As filed with the Securities and Exchange Commission on February 2, 2011
Registration No. 333-170965

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

AMENDMENT NO. 4 TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

FLUIDIGM CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**3826**	**77-0513190**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification Number)**

7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
(650) 266-6000
(Address, including ZIP code, and telephone number, including area code, of registrant's principal executive offices)

Gajus V. Worthington
President and Chief Executive Officer
7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
(650) 266-6000
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

David J. Segre **Robert F. Kornegay** **Asaf H. Kharal** **Wilson Sonsini Goodrich & Rosati P.C.** **650 Page Mill Road** **Palo Alto, CA 94304** **Telephone: (650) 493-9300** **Telecopy: (650) 493-6811**	**William M. Smith** **Vice President, Legal Affairs and General Counsel** **7000 Shoreline Court, Suite 100** **South San Francisco, CA 94080** **Telephone: (650) 266-6000** **Telecopy: (650) 871-7152**	**Charles K. Ruck** **B. Shayne Kennedy** **Latham & Watkins LLP** **650 Town Center Drive, 20th Floor** **Costa Mesa, CA 92626** **Telephone: (714) 540-1235** **Telecopy: (714) 755-8290**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act, as amended, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	Smaller reporting company	☐

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to such Section 8(a), may determine.

EXPLANATORY NOTE

This Amendment No. 4 to the Registration Statement on Form S-1 (File No. 333-170965) is solely to file Exhibits 10.21, 10.22 and 10.23. Accordingly, a preliminary prospectus has been omitted.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth all expenses to be paid by the registrant, other than estimated underwriting discounts and commissions, in connection with this offering. All amounts shown are estimates except for the SEC registration fee and the Financial Industry Regulatory Authority, or FINRA, filing fee.

SEC registration fee	$6,150
FINRA filing fee	$9,125
The NASDAQ Global Market listing fee	$125,000
Printing and engraving expenses	$100,000
Legal fees and expenses	$1,350,000
Accounting fees and expenses	$600,000
Blue sky fees and expenses (including legal fees)	$20,000
Transfer agent and registrar fees	$2,500
Miscellaneous expenses	$37,225
Total	$2,250,000

Item 14. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law, or DGCL, authorizes a corporation's board of directors to grant, and authorizes a court to award, indemnity to officers, directors and other corporate agents.

As permitted by Section 102(b)(7) of the Delaware General Corporation Law, the registrant's certificate of incorporation includes provisions that eliminate the personal liability of its directors and officers for monetary damages for breach of their fiduciary duty as directors and officers.

In addition, as permitted by Section 145 of the DGCL, the bylaws of the registrant provide that:

- The registrant shall indemnify its directors and officers for serving the registrant in those capacities or for serving other business enterprises as a director, officer, employee or agent at the registrant's request, to the fullest extent permitted by the DGCL. The DGCL provides that a corporation may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful.
- The registrant may, in its discretion, indemnify employees and agents in those circumstances where indemnification is not prohibited by the DGCL or other law.
- The registrant is required to advance expenses, as incurred, to its directors and officers in connection with defending a proceeding, except that such director or officer shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification under the registrant's bylaws or the DGCL.
- The registrant will not be obligated pursuant to the bylaws to indemnify a person with respect to proceedings initiated by that person against the registrant or its directors, officers, employees, agents or other indemnities, except with respect to proceedings authorized by the registrant's Board of Directors prior to their initiation, or brought to enforce a right to indemnifications as otherwise required by applicable law.
- The rights conferred in the bylaws are not exclusive, and the registrant is authorized to enter into indemnification agreements with its directors, officers, employees and agents and to obtain insurance to indemnify such persons.

- The registrant may not retroactively amend the bylaw provisions to reduce its indemnification obligations to directors, officers, employees and agents.

The registrant's policy is to enter into separate indemnification agreements with each of its directors and officers that provide the maximum indemnity allowed to directors and executive officers by Section 145 of the Delaware General Corporation Law and also provides for certain additional procedural protections. The registrant also maintains directors and officers insurance to insure such persons against certain liabilities.

These indemnification provisions and the indemnification agreements entered into between the registrant and its officers and directors may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act.

The underwriting agreement filed as Exhibit 1.1 to this registration statement provides for indemnification by the underwriters of the registrant and its officers and directors for certain liabilities arising under the Securities Act and otherwise.

Item 15. Recent Sales of Unregistered Securities.

In the three years prior to the filing of this registration statement, the registrant has issued the following unregistered securities:

(a) From December 20, 2007 through June 11, 2010, the registrant issued and sold an aggregate of 90,014 shares of its common stock upon the exercise of options issued to certain employees, directors and consultants under the registrant's 1999 Stock Option Plan, as amended, at exercise prices ranging from $0.92 to $14.54, for aggregate consideration of $246,318.

(b) From December 28, 2007 through December 29, 2008, the registrant granted to certain of its employees, directors and consultants under the registrant's 1999 Stock Option Plan, as amended, options to purchase an aggregate of 531,964 shares of its common stock at exercise prices ranging from $6.60 to $21.99 per share.

(c) From August 3, 2010 through August 30, 2010, the registrant issued and sold an aggregate of 3,726 shares of its common stock upon the exercise of options issued to certain employees, directors and consultants under the registrant's 2009 Equity Incentive Plan, as amended, at exercise prices ranging from $4.09 to $4.45, for aggregate consideration of $16,388.

(d) From November 17, 2009 through January 24, 2011, the registrant granted to certain of its employees, directors and consultants under the registrant's 2009 Equity Incentive Plan, as amended, options to purchase an aggregate of 702,831 shares of its common stock at exercise prices ranging from $4.09 to $8.38 per share.

(e) From October 2007 through December 2007, the registrant issued and sold an aggregate of 1,452,508 shares of Series E preferred stock to a total of seven investors at $24.22 per share, for aggregate proceeds of $35,179,780.

(f) In December 2007, the registrant issued 990 shares of its common stock to one accredited investor at an issuance price of $8.24 per share for aggregate monetary consideration of $8,160, which amount was deemed paid by the transfer of certain rights granted to registrant pursuant to the terms of a licensing agreement.

(g) In December 2007, the registrant granted to one of its directors under the registrant's 1999 Stock Option Plan, as amended, options to purchase an aggregate of 16,515 shares of the registrant's common stock at an exercise price of $14.54 per share.

(h) In February 2008, in connection with an amendment to a loan and security agreement between the registrant and Lighthouse Capital Partners V, L.P., or LCP, the registrant issued a warrant to purchase 49,545 shares of the registrant's Series E preferred stock to LCP, or LCP, at an exercise price of $24.22 per share.

(i) In February 2008, the registrant granted to one of its executive officers under the registrant's 1999 Stock Option Plan, as amended, options to purchase an aggregate of 99,090 shares of the registrant's common stock at an exercise price of $14.54 per share.

(j) In April 2008, the registrant granted to 110 of its employees, consultants and directors under the registrant's 1999 Stock Option Plan, as amended, options to purchase an aggregate of 316,017 shares of its common stock at an exercise price of $19.31 per share.

(k) On May 12, 2008, the registrant issued 2,712 shares of its Series C preferred stock to Imperial Bank pursuant to Imperial Bank's net exercise of its warrant to purchase up to 6,817 shares of Series C preferred stock. The remainder of the warrant was cancelled pursuant to the terms of the net exercise.

(l) In June 2008, the registrant granted to seven of its employees and consultants under the registrant's 1999 Stock Option Plan, as amended, options to purchase an aggregate of 14,119 shares of its common stock at an exercise price of $20.71 per share.

(m) In August 2008, the registrant granted to eight of its employees under the registrant's 1999 Stock Option Plan, as amended, options to purchase an aggregate of 10,650 shares of its common stock at an exercise price of $21.99 per share.

(n) In August 2009, the registrant issued and sold convertible promissory notes with an aggregate principal amount of $10,666,814 and warrants to purchase an aggregate of 220,176 shares of the registrant's Series E preferred stock an exercise price of $24.22 per share to a total of 100 accredited investors.

(o) In November 2009, the registrant issued and sold an aggregate of 765,186 shares of the registrant's Series E preferred stock to a total of 101 accredited investors at a purchase price of $24.22 per share, for aggregate consideration of $18,532,822, of which (i) $11,032,826 was paid by the conversion of indebtedness of the registrant and interest accrued thereon, and (ii) $7,499,996 was paid by cash payments to the registrant.

(p) In November 2009, the registrant granted to seven of its employees and consultants under the registrant's 2009 Equity Incentive Plan, as amended, options to purchase an aggregate of 108,985 shares of its common stock at an exercise price of $4.09 per share.

(q) In December 2009, as part of a stock option exchange program, the registrant granted to 109 of its employees, directors and consultants under the registrant's 2009 Equity Incentive Plan, as amended, options to purchase an aggregate of 806,743 shares of the registrant's common stock at an exercise price of $4.45 per share in exchange for the cancellation by such parties of stock options to purchase an equal number of shares of the registrant's common stock that were previously outstanding under the registrant's 1999 Stock Option Plan, as amended.

(r) In January 2010, the registrant granted to five of its directors under the registrant's 2009 Equity Incentive Plan, as amended, options to purchase an aggregate of 43,352 shares of its common stock at an exercise price of $4.45 per share.

(s) In June 2010, in connection with an amendment to a loan and security agreement between the registrant and LCP, the registrant (i) amended and restated warrants previously issued to LCP and its affiliates to provide that the exercise price of the amended and restated warrants will be reduced to $12.11 per share and that the

amended and restated warrants will be exercisable for a number of shares of the registrant's Series D-1 preferred stock or Series E-1 preferred stock, as applicable, equal to the number of shares of the registrant's Series D preferred stock or Series E preferred stock that was previously issuable upon the exercise of the warrants; and (ii) issued a new warrant to purchase 148,6178 shares of the registrant's Series E-1 preferred stock to LCP at an exercise price of $12.11 per share.

(t) In August 2010, upon exercise of outstanding amended and restated warrants, the registrant issued and sold an aggregate of 57,724 shares of the registrant's Series E-1 preferred stock and an aggregate of 57,724 shares of the registrant's common stock to 49 accredited investors for aggregate proceeds of $699,048.

(u) In August 2010, the registrant granted to one of its employees under the registrant's 2009 Equity Incentive Plan, as amended, options to purchase an aggregate of 115,606 shares of its common stock at an exercise price of $4.45 per share.

(v) In January 2011, the registrant granted to fourteen of its executive officers and directors under the registrant's 2009 Equity Incentive Plan, as amended, options to purchase an aggregate of 138,150 shares of its common stock at an exercise price of $8.38 per share.

(w) In January 2011, the registrant issued and sold subordinated secured promissory notes with an aggregate principal amount of $5,000,000 and warrants to purchase an aggregate of 98,751 shares of the registrant's Series E-1 preferred stock at an exercise price of $0.02 per share to a total of 49 accredited investors all of whom were existing investors in the registrant and had a substantial pre-existing relationship with the registrant.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering, and the registrant believes that each transaction was exempt from the registration requirements of the Securities Act in reliance on the following exemptions:

- with respect to the transactions described in paragraphs (a) through (d), Rule 701 promulgated under the Securities Act as transactions pursuant to a compensatory benefit plan approved by the registrant's Board of Directors; and
- with respect to the transactions described in paragraphs (e) through (w), Section 4(2) of the Securities Act, or Rule 506 of Regulation D promulgated thereunder, as transactions by an issuer not involving a public offering. Each recipient of the securities in this transaction represented his or her intention to acquire the securities for investment only and not with a view to, or for resale in connection with, any distribution thereof, and appropriate legends were affixed to the share certificates issued in each such transaction. In each case, the recipient received adequate information about the registrant or had adequate access, through his or her relationship with the registrant, to information about the registrant.

Item 16. Exhibits and Financial Statement Schedules.

(a) *Exhibits*. The following exhibits are included herein or incorporated herein by reference:

Exhibit Number	Description
1.1[(1)]	Form of Underwriting Agreement.
3.1[(3)]	Certificate of Incorporation of the registrant, as currently in effect.
3.1.1[(3)]	Form of Certificate of Incorporation of the registrant, to be in effect prior to completion of this offering.
3.2[(3)]	Form of Restated Certificate of Incorporation of the registrant, to be in effect upon the completion of this offering.
3.3[(3)]	Bylaws of the registrant, as currently in effect.
3.4[(3)]	Form of Amended and Restated Bylaws of the registrant, to be in effect upon completion of this offering.
4.1[(1)]	Specimen Common Stock Certificate of the registrant.

Exhibit Number	Description
4.2[2][3]	Series E Preferred Stock Purchase Agreement dated June 13, 2006 by and among the registrant and the purchasers of the registrant's preferred stock set forth therein, as amended.
4.3[3]	Form of Warrant to Purchase Shares of Preferred Stock of the registrant dated as of August 25, 2009.
4.4[3]	Series E Preferred Stock Purchase Agreement dated November 16, 2009 by and among the registrant and the purchasers of the registrant's preferred stock set forth therein.
4.5[3]	Ninth Amended and Restated Investor Rights Agreement between the registrant and certain holders of the registrant's capital stock named therein, including amendments No. 1, No. 2 and No. 3.
4.6[2][3]	Loan and Security Agreement No. 4561 between the registrant and Lighthouse Capital Partners V, L.P. dated March 29, 2005, including amendments No. 1 through No. 8.
4.6A[3]	Amended and Restated Preferred Stock Purchase Warrant issued to Lighthouse Capital Partners V, L.P. effective June 14, 2010.
4.6B[3]	Amended and Restated Preferred Stock Purchase Warrant issued to Lighthouse Capital Partners V, L.P. effective June 14, 2010.
4.6C[3]	Amended and Restated Preferred Stock Purchase Warrant issued to Lighthouse Capital Partners V, L.P. effective June 14, 2010.
4.6D[3]	Preferred Stock Purchase Warrant issued to Lighthouse Capital Partners V, L.P. effective June 14, 2010.
4.6E[3]	Negative Pledge Agreement by and between the registrant and Lighthouse Capital Partners V, L.P. dated March 29, 2005.
4.7[3]	Note and Warrant Purchase Agreement dated January 6, 2011 among the registrant and the investors named therein.
4.8[3]	Business Financing Agreement between the registrant and Bridge Bank, National Association, dated as of December 16, 2010.
5.1[1]	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
10.1[3]	Form of Indemnification Agreement between the registrant and its directors and officers.
10.2[3]	1999 Stock Option Plan of the registrant, as amended.
10.2A[3]	Forms of agreements under the 1999 Stock Option Plan.
10.3[3]	2009 Equity Incentive Plan of the registrant, as amended.
10.3A[3]	Forms of agreements under the 2009 Equity Incentive Plan.
10.4[3]	2011 Equity Incentive Plan of the registrant.
10.4A[3]	Forms of agreements under the 2011 Equity Incentive Plan.
10.5[2][3]	Second Amended and Restated License Agreement by and between California Institute of Technology and the registrant effective as of May 1, 2004.
10.5A[2][3]	First Addendum, effective as of March 29, 2007, to Second Amended and Restated License Agreement by and between California Institute of Technology and the registrant effective as of May 1, 2004.

Exhibit Number	Description
10.6[2][3]	Co-Exclusive License Agreement between President and Fellows of Harvard College and the registrant effective as of October 15, 2000.
10.6A[2][3]	First Amendment to Co-Exclusive License Agreement between President and Fellows of Harvard College and the registrant effective as of October 15, 2000.
10.7[2][3]	Co-Exclusive License Agreement between President and Fellows of Harvard College and the registrant effective as of October 15, 2000.
10.8[2][3]	Co-Exclusive License Agreement between President and Fellows of Harvard College and the registrant effective as of October 15, 2000.
10.9[2][3]	Letter Agreement between President and Fellows of Harvard College and the registrant dated December 22, 2004.
10.10[2][3]	Patent License Agreement by and between Gyros AB and the registrant dated January 9, 2003.
10.10A[2][3]	Amendment No. 1 dated January 9, 2005 to Patent License Agreement by and between Gyros AB and the registrant dated January 9, 2003.
10.11	Reserved.
10.12[2][3]	Amended and Restated Letter Agreement Regarding Application for Incentives Under the Research Incentive Scheme for Companies (RISC) dated March 27, 2008 (originally dated October 7, 2005), by and between Singapore Economic Development Board and Fluidigm Singapore Pte. Ltd.
10.12A[2][3]	Supplement, dated January 11, 2006, to Letter Agreement Relating to Application for Incentives under the Research Incentive Scheme for Companies (RISC), dated October 7, 2005 between Singapore Economic Development Board and Fluidigm Singapore Pte. Ltd.
10.13[2][3]	Amended and Restated Letter Agreement Regarding Application for Incentives Under the Research Incentive Scheme for Companies (RISC) dated March 27, 2008 (originally dated February 12, 2007), by and between Singapore Economic Development Board and Fluidigm Singapore Pte. Ltd.
10.14[3]	Form of Employment and Severance Agreement between the registrant and each of its executive officers.
10.15[3]	Employee Loan Agreement by and between the registrant and Gajus V. Worthington dated January 20, 2004.
10.16[3]	Stock Repurchase Agreement by and between the registrant and Gajus V. Worthington dated April 10, 2008.
10.17[3]	Offer Letter to Vikram Jog dated January 29, 2008.
10.18[3]	Offer Letter to Fredric Walder dated May 3, 2010.
10.19[3]	Lease Agreement between ARE - San Francisco No. 17 LLC and the registrant, dated September 14, 2010, as amended September 22, 2010.
10.20[3]	Tenancy for Flatted Factory Space in Singapore between JTC Corporation and the registrant dated July 27, 2005, as amended August 12, 2008 and May 31, 2010.
10.21[2]	Collaboration and Option Agreement by and between Novartis Vaccines & Diagnostics, Inc. and the registrant dated May 17, 2010, including all exhibits thereto.
10.22[2]	Form of License Agreement by and between Novartis Vaccines & Diagnostics, Inc. and the registrant.

Exhibit Number	Description
10.23[2]	Quality Agreement for Development of In-Vitro Diagnostic Devices by and between Novartis Vaccines & Diagnostics, Inc. and the registrant dated May 14, 2010.
10.24[3]	Co-Promotion Agreement, by and between 454 Life Sciences and the registrant dated May 20, 2010.
21.1[3]	List of subsidiaries of registrant.
23.1[3]	Consent of Independent Registered Public Accounting Firm.
23.2[1]	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1).
24.1[3]	Power of Attorney.

(1) To be filed by amendment.
(2) Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.
(3) Previously filed.

(b) *Financial Statement Schedules.*

All schedules have been omitted because the information required to be presented in them is not applicable or is shown in the consolidated financial statements or related notes.

Item 17. Undertakings.

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Amendment No. 4 to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Palo Alto, State of California, on the 2nd day of February, 2011.

FLUIDIGM CORPORATION

By: /s/ Gajus V. Worthington
Gajus V. Worthington
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 4 to the registration statement has been signed by the following persons in the capacities indicated on the 2nd day of February, 2011:

Signature	Title	Date
/s/ Gajus V. Worthington Gajus V. Worthington	President, Chief Executive Officer and Director (Principal Executive Officer)	February 2, 2011
/s/ Vikram Jog Vikram Jog	Chief Financial Officer (Principal Accounting and Financial Officer)	February 2, 2011
* Jeremy Loh	Director	February 2, 2011
* Samuel Colella	Director	February 2, 2011
* Kenneth Nussbacher	Director	February 2, 2011
* Raymond Whitaker	Director	February 2, 2011
* John A. Young	Director	February 2, 2011

*By: /s/ Gajus V. Worthington
Gajus V. Worthington
Attorney-in-Fact

*By: /s/ Vikram Jog
Vikram Jog
Attorney-in-Fact

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10.12A[2][3]	Supplement, dated January 11, 2006, to Letter Agreement Relating to Application for Incentives under the Research Incentive Scheme for Companies (RISC), dated October 7, 2005 between Singapore Economic Development Board and Fluidigm Singapore Pte. Ltd.
10.13[2][3]	Amended and Restated Letter Agreement Regarding Application for Incentives Under the Research Incentive Scheme for Companies (RISC) dated March 27, 2008 (originally dated February 12, 2007), by and between Singapore Economic Development Board and Fluidigm Singapore Pte. Ltd.
10.14[3]	Form of Employment and Severance Agreement between the registrant and each of its executive officers.
10.15[3]	Employee Loan Agreement by and between the registrant and Gajus V. Worthington dated January 20, 2004.
10.16[3]	Stock Repurchase Agreement by and between the registrant and Gajus V. Worthington dated April 10, 2008.
10.17[3]	Offer Letter to Vikram Jog dated January 29, 2008.

Exhibit Number	Description
10.18[3]	Offer Letter to Fredric Walder dated May 3, 2010.
10.19[3]	Lease Agreement between ARE-San Francisco No. 17, LLC and the registrant, dated September 14, 2010, as amended September 22, 2010.
10.20[3]	Tenancy for Flatted Factory Space in Singapore between JTC Corporation and the registrant dated July 27, 2005, as amended August 12, 2008 and May 31, 2010.
10.21[2]	Collaboration and Option Agreement by and between Novartis Vaccines & Diagnostics, Inc. and the registrant dated May 17, 2010, including all exhibits thereto.
10.22[2]	Form of License Agreement by and between Novartis Vaccines & Diagnostics, Inc. and the registrant.
10.23[2]	Quality Agreement for Development of In-Vitro Diagnostic Devices by and between Novartis Vaccines & Diagnostics, Inc. and the registrant dated May 14, 2010.
10.24[3]	Co-Promotion Agreement, by and between 454 Life Sciences and the registrant dated May 20, 2010.
21.1[3]	List of subsidiaries of registrant.
23.1[3]	Consent of Independent Registered Public Accounting Firm.
23.2[1]	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1).
24.1[3]	Power of Attorney.

(1) To be filed by amendment.
(2) Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.
(3) Previously filed.

CONFIDENTIAL TREATMENT REQUESTED BY FLUIDIGM CORPORATION

EXHIBIT 10.21

COLLABORATION AND OPTION AGREEMENT

by and between

NOVARTIS VACCINES & DIAGNOSTICS, INC.

and

FLUIDIGM CORPORATION

DATE: MAY 17, 2010

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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Schedules and Exhibits

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

COLLABORATION AND OPTION AGREEMENT

THIS COLLABORATION AND OPTION AGREEMENT (this "**Agreement**") is made and entered into effective as of [_____, 2010] (the "**Effective Date**"), by and between NOVARTIS VACCINES AND DIAGNOSTICS, INC., a Delaware corporation, with offices at 4560 Horton Street, Emeryville, CA 94608 ("**Novartis**"), and FLUIDIGM CORPORATION, a Delaware corporation with offices at 7000 Shoreline Court, Suite 100, South San Francisco, CA 94080 ("**Fluidigm**").

RECITALS

WHEREAS, Fluidigm has developed a digital PCR/digital array chip reader instrument system and approach towards non-invasive prenatal and pregnancy related diagnostics using cell-free DNA in maternal blood, urine, saliva, bloodspot or stool;

WHEREAS, Novartis has specialized experience in, among other things, the research, development and commercialization of diagnostics and Fluidigm has specialized experience in digital PCR and has developed certain technology of interest to Novartis;

WHEREAS, Novartis and Fluidigm desire to enter into an exclusive (as described in this Agreement) research and development collaboration to identify and develop reagents to be used in connection with the Fluidigm Technology (as defined below) and, if applicable, to modify such Fluidigm Technology, to develop a Test (as defined below) in the Primary Field (as defined below);

WHEREAS, Fluidigm desires to grant Novartis an option to exclusively license Novartis the Fluidigm Technology, Fluidigm Know-How and Fluidigm Patents in the Primary Field and Secondary Field (each as defined below), and an option to exclusively supply Novartis the Fluidigm Products for use in the Primary Field and Secondary Field, and Novartis may desire to exercise such options as set forth herein.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual promises and covenants of the parties contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, do hereby agree as follows:

ARTICLE I
Definitions

Unless otherwise specifically provided herein, the following terms shall have the following meanings:

"Affiliate" shall mean, with respect to a party, any Person that, directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with such party. For purposes of this definition, "control" and, with correlative meanings, the terms "controlled by" and "under common control with" shall mean (a) the possession, directly or indirectly, of the power to direct the management or policies of such a Person, whether through

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the ownership of voting securities, by contract relating to voting rights or corporate governance, or otherwise, or (b) the ownership, directly or indirectly, of more than fifty percent (50%) of the voting securities or other ownership interest of such Person.

"Ancillary Agreement" shall mean the Supply Agreement, the License Agreement and any other agreement entered into pursuant to this Agreement or the Supply Agreement, including the Novartis Development Quality Agreement.

"Applicable Law" shall mean the applicable laws, rules, regulations, including any rules, regulations, guidelines, or other requirements of any applicable regulatory authorities, that may be in effect from time to time in the Territory.

"ASR" shall mean an analyte specific reagent, including nucleic acid sequences, or similar reagent which, through specific binding or chemical reaction with substances in a specimen, is intended for use in a Test.

"Change of Control" shall mean the occurrence of any of the following events: (a) any Person acquires, either directly or indirectly, (i) at least fifty percent (50%) of the then-outstanding shares of common stock of Fluidigm or any direct or indirect parent of Fluidigm or (ii) securities of Fluidigm or any direct or indirect parent of Fluidigm entitled to cast at least fifty percent (50%) of the votes that may be cast in an election of directors of Fluidigm or such parent; (b) a reorganization, merger or consolidation with a Person to which Fluidigm or any direct or indirect parent of Fluidigm is a party, unless, after the occurrence of such reorganization, merger or consolidation, Fluidigm's or such direct or indirect parent of Fluidigm's outstanding common stock immediately prior to the effectiveness of such transaction constitutes or is converted into securities of the surviving company entitled to cast a majority of the votes that may be cast in an election of directors of the surviving company; (c) a sale or transfer of all or substantially all of Fluidigm's or any direct or indirect parent of Fluidigm's assets to a Person; or (d) a liquidation or dissolution of Fluidigm or any direct or indirect parent of Fluidigm.

"Collaboration Activities" shall mean those tests, studies and other activities set forth in, or performed in order to obtain the information set forth in, the Collaboration Plan and such other tests, studies and other activities as may be agreed upon from time to time by the JSC.

"Collaboration Information and Inventions" shall mean any and all Information and Inventions that are (a) in the case of inventions, conceived or (b) in all other cases, developed or made, in each case ((a) and (b)) by or on behalf of either party (or its Affiliates or subcontractors) or jointly by or on behalf of one party (or its Affiliates or subcontractors) and the other party (or its Affiliates or subcontractors) in the performance of or pursuant to the Collaboration Plan or otherwise in the performance of any Collaboration Activities. "Collaboration Information and Inventions" shall not, however, include any Information and Inventions that are (i) in the case of inventions, conceived, or (ii) in all other cases, developed or made, in each case ((i) and (ii)) by or for a party (or its Affiliates or subcontractors) prior to the Effective Date, or after the Effective Date and solely outside the performance of the Collaboration Activities ("Excluded Information and Inventions"). (For example, Excluded

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Information and Inventions developed prior to the Effective Date and incorporated into Collaboration Information and Inventions shall not thereby become Collaboration Information and Inventions, and, similarly, Collaboration Information and Inventions incorporated into Information and Inventions developed after termination of this Agreement shall not cause such later-developed Information and Inventions to be Collaboration Information and Inventions).

"Collaboration Know-How" shall mean all Collaboration Information and Inventions that are not generally known, but excluding any Collaboration Information and Inventions to the extent claimed by a Collaboration Patent.

"Collaboration Patents" shall mean any Patents to the extent that they claim any Collaboration Information and Inventions. For the avoidance of doubt, "Collaboration Patents" shall not include any Patents existing prior to the Effective Date (or any resulting Patent rights), nor any Patents to the extent claiming inventions within the Excluded Information and Inventions.

"Collaboration Plan" shall mean that detailed work plan attached hereto as Exhibit B, as amended from time to time by the JSC in accordance with this Agreement.

"Completion" shall mean, with respect to a Phase, the date on which all the Collaboration Activities for such Phase are completed and the Final Report for such Phase has been provided by each party.

"Confidential Information" of a party shall mean all Information and Inventions and other confidential information and data of a financial, commercial or technical nature which the disclosing party or any of its Affiliates has supplied or otherwise made available to the other party or its Affiliates, whether made available orally, visually (e.g., by access to facilities or property), in writing or in electronic form, and whether before, on or after the Effective Date, including information comprising or relating to concepts, discoveries, inventions, data, designs or formulae in relation to this Agreement.

"Control" shall mean, with respect to any item of Information and Inventions, Patent or other intellectual property right, possession of the right, whether directly or indirectly, and whether by ownership, license or otherwise, to assign, or grant a license, sublicense or other right to or under, such Information and Inventions, Patent or right without violating the terms of any agreement or other arrangement with any Third Party.

"Core Fluidigm Know-How" shall mean Fluidigm Know-How required to practice the inventions as claimed in the Core Fluidigm Patents.

"Core Fluidigm Patents" shall mean, for Patents set forth on Schedule 11.2(d), those certain claims covering Core Fluidigm Technology and, after the Effective Date, any additional Fluidigm Patents covering the Core Fluidigm Technology that the parties agree in writing shall constitute Core Fluidigm Patents, such agreement by Fluidigm not to be unreasonably withheld.

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"Core Fluidigm Technology" shall mean the Fluidigm Technology (a) constituting Fluidigm Chips and other chips manufactured by Fluidigm specifically for conducting digital PCR, (b) directed to the use of the chips specified in clause (a) hereinabove for conducting digital PCR in the Primary Field or Secondary Field, (c) constituting the Fluidigm Instrument(s) for conducting digital PCR using the chips specified in section (a) herein, (d) directed to the use of such Fluidigm Instrument(s) for conducting digital PCR, or (e) for conducting digital PCR specifically in the Primary Field or Secondary Field.

"Exploit" or "Exploitation" shall mean to make, have made, import, export, use, sell, offer for sale, or otherwise dispose of, including all discovery, research, development, registration, modification, enhancement, improvement, manufacture, storage, formulation, exportation, transportation, distribution, promotion and marketing activities related thereto.

"Final Report" shall have the meaning set forth in Section 3.1(d).

"Fluidigm Assay Patent Claims" shall mean those certain assay claims, existing as of the Effective Date and filed prior to [***], of the Fluidigm Patents Controlled by Fluidigm, which claims are set forth on Exhibit C.

"Fluidigm Chip" shall mean the [***], and any Improvements thereto developed by or on behalf of Fluidigm or any of its Affiliates during the term of this Agreement, or, if the License Option is exercised, during the term of the License Agreement. "Fluidigm Chip" includes any additional buffers and reagents (excluding assay reagents) and other consumables (e.g., oils) required for operation of the applicable chip and that are customarily provided by Fluidigm with the sale of its chips.

"Fluidigm Instrument" shall mean that certain Fluidigm digital PCR/digital array chip reader instrument system (including software required to run the instrument and to conduct the applicable analysis) currently sold by Fluidigm, including any Improvements to such instrument (including such software) developed by or on behalf of Fluidigm or any of its Affiliates during the term of this Agreement, or, if the License Option is exercised, during the term of the License Agreement.

"Fluidigm Know-How" shall mean all Information and Inventions Controlled (other than pursuant to a license or other right granted to Fluidigm in this Agreement) by Fluidigm or an Affiliate of Fluidigm as of the Effective Date or at any time during the term of this Agreement (or, if the License Option is exercised, during the term of the License Agreement), including the Fluidigm Method, Fluidigm Technology, and the Fluidigm Solely-Owned Collaboration Information and Inventions, that are not generally known and are reasonably necessary or useful for, or otherwise related to, the Exploitation of any Novartis Licensed Products (including generating results from Tests, but excluding the manufacture of Fluidigm Technology) in the Primary Field and the Secondary Field, but excluding any Information and Inventions to the extent claimed by one or more of the Fluidigm Patents.

"Fluidigm Method" shall mean the Fluidigm Know-How and the inventions claimed in the Fluidigm Patents, in each case, that relate to non-invasive prenatal and pregnancy related

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diagnostics using digital PCR and cell-free DNA in maternal blood, urine, saliva, bloodspot or stool in the Primary Field or Secondary Field.

"Fluidigm Patents" shall mean all Patents Controlled by Fluidigm or an Affiliate of Fluidigm as of the Effective Date or at any time during the term of this Agreement, including any Patents claiming (a) the Fluidigm Method or the Fluidigm Technology, or (b) the Fluidigm Solely-Owned Collaboration Information and Inventions, in each case that are reasonably necessary or useful for, or otherwise related to, the Exploitation (but excluding the manufacture of Fluidigm Technology) of any Novartis Licensed Products, including the generation of results from Tests, in the Primary Field and the Secondary Field. The "Fluidigm Patents" shall include (i) all Patents listed in Exhibit E, (ii) all patents issuing on such patent applications, and any divisionals, continuations, continuations-in-part, reissues, reexaminations, extensions, substitutions, registrations, additions, confirmations and renewals of such patents and patent applications, including any patents and patent applications that claim priority to a common priority document in the priority chain of any of the foregoing, (iii) supplemental protection certificates and the like relating to any of the foregoing, and (iv) counterparts or substantial equivalents of any of the foregoing in any country.

"Fluidigm Products" shall mean the Fluidigm Chips and the Fluidigm Instruments, collectively.

"Fluidigm Royalty-Bearing Product" shall mean any instrument, chip or chip system, sold by or on behalf of Fluidigm or any of its Affiliates or (sub)licensees, that infringes any Valid Claim(s) of the Collaboration Patents.

"Fluidigm Solely-Owned Collaboration Information and Inventions" shall mean the Collaboration Information and Inventions that (a) in the case of inventions, are described in written claims solely directed to, or (b) in all other cases, is specifically about, the design, development, or manufacture of Fluidigm Chips or any other chips, Fluidigm Instruments or any other instruments, or associated control software.

"Fluidigm Technology" shall mean Fluidigm's current digital PCR and associated chips, including the Fluidigm Chips, and digital array chip reader instrument system, including the Fluidigm Instruments, each as further described in Exhibit D, including Improvements to any of the foregoing and any other technology that Fluidigm Controls at any time during the term of this Agreement relating to or applicable in the Primary Field or Secondary Field.

"FTE" shall mean the equivalent of the work of one (1) employee full time for one (1) calendar year.

"Improvement" shall mean (a) any modification, variation or revision to Fluidigm Technology, including Fluidigm Instruments and Fluidigm Chips, as they exist on the Effective Date, or (b) inventions for which patent applications are or may be filed that incorporate or expand on the Fluidigm Patents claiming Fluidigm Technology, including Fluidigm Instruments and Fluidigm Chips, as they exist on the Effective Date.

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"Indemnified Party" shall mean a party, its Affiliates or its or their respective directors, officers, employees, agents, partners and shareholders seeking to recover a Loss under Section 10.1 or 10.2.

"Indemnifying Party" shall mean a party from whom recovery of a Loss is sought under Section 10.1 or 10.2.

"Information and Inventions" shall mean all technical information, know-how and data (including clinical, analytical, and quality control data), inventions (whether patentable or not), discoveries, trade secrets, specifications, instructions, processes, formulae, materials, expertise and other technology applicable to diagnostics, formulations, compositions, products or to their manufacture, research, development, registration, use or commercialization or methods of assaying or testing them or processes for their manufacture, formulations containing them, compositions incorporating or comprising them, kits incorporating or comprising them, and including all biological, chemical, pharmacological, biochemical, toxicological, pharmaceutical, physical and analytical, safety, quality control, manufacturing, preclinical and clinical data, instructions, processes, formulae, expertise and information relevant to the research, development, manufacture, use or commercialization of or which may be useful in studying, testing, development, production or formulation of products, but excluding the Regulatory Documentation. Notwithstanding any other provision (but without limiting any obligation that Fluidigm may have under any Ancillary Agreement), Fluidigm shall have no obligation under this Agreement to disclose to Novartis (or its Affiliates) any information with respect to the manufacture of Fluidigm products other than certain related information specifically identified in this Agreement (e.g., for quality standards).

"IVD [***]" shall mean an in vitro diagnostic product [***].

"JSC" shall mean the joint steering committee as established in Section 2.1.

"Knowledge" of a party shall mean such party's and its Affiliates' best knowledge of the facts and information after due inquiry and performing a diligent investigation with respect to such facts and information. "Known" to a party shall have a corresponding meaning.

"License Agreement" shall mean a license agreement in the form of Exhibit F.

"License Option" shall mean that certain exclusive option set forth in Section 5.2.

"Net Sales" shall mean, with respect to any [***] that is subject to a royalty under this Agreement ("Royalty [***]"), the gross amount invoiced by or on behalf of (x) Fluidigm or any of its Affiliates or (sub)licensees to Third Parties other than (sub)licensees, or (y) in the case of Results as the subject of the royalty, Fluidigm or any of its Affiliates or (sub)licensees, Third Party commercialization partners or customers, in each case in bona fide, arms-length transactions, determined in accordance with U.S. Generally Accepted Accounting Principles ("GAAP") standard accounting methods as generally and consistently applied by Fluidigm or such other Person, less the following customary deductions to the extent included in the gross invoiced sales price of any such Royalty [***] or otherwise directly paid or incurred by Fluidigm

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or any of its Affiliates or (sub)licensees with respect to the sale or provision of such Royalty [***], such as:

(a) free goods to the extent the value thereof is included in the gross invoiced sales price;

(b) cash discounts taken for timely payments;

(c) direct to customer discounts actually granted at or about the time of, and in conjunction with, the sale;

(d) charge backs and other amounts paid on sale or dispensing of Royalty [***];

(e) amounts payable resulting from Medicaid rebates and other governmental (or agency thereof) mandated rebate programs;

(f) discounts actually granted pursuant to discount card programs, indigent patient programs and patient discount programs, including "Together Rx" and coupon discounts;

(g) amounts repaid or credited by reasons of defects, rejections, recalls or returns;

(h) tariffs, duties, excise, sales, value-added and other taxes (other than taxes based on income), if separately stated on the invoice;

(i) all freight, postage and insurance expenses, if separately stated on the invoice; and

(j) amounts repaid or credited for uncollectible amounts on previously sold or provided Royalty [***].

(i) For the avoidance of doubt, in the event of any sale or other disposal of a Royalty [***] between or among Fluidigm or any of its Affiliates shall not be considered Net Sales and in such cases Net Sales shall be calculated only on the value charged or invoiced on the first arm's-length sale thereafter to a Third Party.

(ii) In the case of any sale which is not invoiced or is delivered before invoice, Net Sales shall be calculated at the time of shipment or when the Royalty [***] is paid for, if paid for before shipment or invoice.

(iii) In the case of any sale or other disposal for value, such as barter or counter-trade, of any Royalty [***], or part thereof, other than in an arm's-length transaction exclusively for money, Net Sales shall be calculated to also include the value of the non-cash consideration received, or shall be the fair market price (if higher) of the Royalty [***] in the country of sale or disposal.

In the event the Royalty [***] is sold as part of a bundled [***] ("Bundled [***]"), the Net Sales of the Royalty [***], for the purposes of determining royalty payments under this Agreement, shall be determined by multiplying the Net Sales of the Bundled Product by the fraction, A/(A+B) where A is the weighted (by sales volume) average sale price in a particular country of the Royalty [***] when sold separately in finished form and B is the weighted (by sales volume) average sale price in that country of the other product(s)/service(s) sold separately in finished form. In the event that such average sale price cannot be determined for both the Royalty [***] and the other product(s)/services in the applicable bundle, Net Sales for purposes of determining royalty payments shall be agreed by the parties based on the relative value contributed by each component [***], such agreement not to be unreasonably withheld.

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"Novartis Know-How" shall mean Information and Inventions owned or Controlled by Novartis or an Affiliate of Novartis as of the Effective Date or any time during the term of this Agreement, including the Novartis Solely-Owned Collaboration Information and Inventions, that (a) are necessary or useful for the Exploitation of any Novartis Licensed Product, and (b) are not generally known, but excluding any Information and Inventions to the extent claimed by the Novartis Patents.

"Novartis Licensed Products" shall mean the [***].

"Novartis Patents" shall mean all Patents that claim any Novartis Licensed Products Controlled (other than pursuant to a license or other right granted to Novartis in this Agreement) by Novartis or an Affiliate of Novartis as of the Effective Date or any time during the term of this Agreement, including those written claims within Patents that claim Novartis Solely-Owned Collaboration Information and Inventions.

"Novartis Solely-Owned Collaboration Information and Inventions" shall mean any Collaboration Information and Inventions that (a) (i) in the case of inventions, are described in written claims that are solely directed to, or (ii) in all other cases, are specifically about, sample enrichment or assay(s) (including any sample enrichment-related or assay-related algorithms constituting Collaboration Information and Inventions), but in each case ((i) and (ii)) excluding any improvements to the inventions claimed in the Fluidigm Assay Patent Claims (including Fluidigm algorithms or mathematical models claimed in the Fluidigm Assay Patent Claims) or (b) constitute improvements of any Novartis Know-How or any invention claimed in any Novartis Patents, but excluding such improvements if they constitute Fluidigm Solely-Owned Collaboration Information and Inventions. For purposes of this definition only, the Novartis Know-How and the Novartis Patents shall be deemed to include any Patents or Information and Inventions to which Novartis or any of its Affiliates have, from a Third Party, an exclusive license that falls within the Primary Field or the Secondary Field or an exclusive option for an exclusive license that falls within the Primary Field or the Secondary Field, in each case as of the Effective Date or at anytime during the term of this Agreement (and, for clarity, excluding any such license or option under this Agreement or any Ancillary Agreement).

"Option Term" shall mean the period commencing from the Effective Date until ninety (90) days after the Completion of Phase 1.

"Patents" shall mean (a) patents and patent applications, (b) all patents issuing on such patent applications, and any divisionals, continuations, continuations-in-part, reissues, reexaminations, extensions, substitutions, registrations, additions, confirmations and renewals of such patents and patent applications, including any patents and patent applications that claim priority to a common priority document in the priority chain of any of the foregoing, (c) supplemental protection certificates and the like relating to any of the foregoing, and (d) counterparts or substantial equivalents of any of the foregoing in any country.

"Person" shall mean an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock

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company, trust, unincorporated association, joint venture or other similar entity or organization, including a government or political subdivision, department or agency of a government.

"Phase" shall have the meaning set forth in Section 3.1(c).

"Primary Field" shall mean the Testing of fetal aneuploidies of a fetus in a pregnant woman.

"Primary Field Competitor" shall mean a Person that is commercializing (including promoting, selling, offering for sale or otherwise commercially distributing) (a) the reporting of a result of any Test for a fee or (b) an IVD [***], in each case in the Primary Field.

"Regulatory Documentation" shall mean all applications, registrations, licenses, authorizations and approvals (including all regulatory approval), all correspondence submitted to or received from regulatory authorities (including minutes and official contact reports relating to any communications with any regulatory authority) and all supporting documents and all clinical studies and tests, relating to any Novartis Licensed Product, and all data contained in any of the foregoing, including any and all investigational new device exemptions, 510K notifications (if required) or premarket approvals (if required) within the meaning of the United States Federal Food, Drug, and Cosmetic Act, as amended from time to time, and the regulations promulgated thereunder, and any corresponding foreign application, registration or certification, to market a Novartis Licensed Product in the Territory, and manufacturing records maintained pursuant to the Supply Agreement.

"Results" shall mean reporting a result of any Test for a fee.

"Secondary Field" shall mean the Testing of (a) a genetic abnormality, disease or condition in a fetus or in a pregnant woman as associated with her pregnancy (other than that Tested in the Primary Field), (b) the RhD genotyping or carrier status in a pregnant woman, or (c) the genetic carrier status of a prospective mother-to-be and her male partner or donor, as the case may be.

"Side Letter" shall mean that certain disclosure letter provided by Fluidigm's designated counsel to Novartis' designated counsel on or before the Effective Date.

"Territory" shall mean the entire world.

"Test" shall mean any non-invasive (including human blood, urine, saliva, bloodspot or stool) screening, diagnostic, prognostic, predictive or other clinical test. "Testing" shall have a corresponding meaning.

"Third Party" shall mean any Person other than Novartis, Fluidigm and their respective Affiliates.

"Valid Claim" shall mean, with respect to any country, a claim of an issued and unexpired patent in such country which patent has not been held unenforceable, unpatentable or

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invalid by a decision of a court or other governmental agency of a competent jurisdiction, unappealable or unappealed within the time allowed for appeal, and which patent has not been admitted to be invalid or unenforceable through reissue, disclaimer or otherwise.

ARTICLE II
Committees

2.1 Joint Steering Committee. The parties shall establish a joint steering committee (the "**JSC**") to review and discuss matters relating to the performance of the parties' respective obligations and the exercise of the parties' respective rights under this Agreement. Each party shall appoint its Alliance Manager and two (2) senior executives as representatives of the JSC. The Alliance Managers shall be co-chairs of the JSC. A party's representative may be removed or replaced at any time by the party that appointed such representative by written notice to the other party.

(a) Responsibilities. The JSC shall have only the responsibilities and authority delegated to or vested in it in this Section 2.1 or elsewhere in this Agreement. The JSC shall: (i) oversee the Collaboration Activities; (ii) review and approve amendments to the Collaboration Plan, *provided* that if such approval is not unanimous, the dispute shall be resolved as set forth in Section 12.6; (iii) establish subcommittees, as appropriate; (iv) seek to resolve disputes arising under this Agreement; and (v) perform such other functions with respect to this Agreement as the parties may mutually agree in writing from time to time.

(b) Decision-Making and Dispute Resolution. Decisions of the JSC shall be made by unanimous vote, with each party's representatives collectively having one (1) vote. The representatives of the JSC shall use reasonable efforts to reach unanimous agreement on all matters. If, despite such efforts, agreement on a particular matter cannot be reached by the JSC within ten (10) days after the JSC first considers such matter (or such shorter time as may be reasonable under the circumstances), then, unless otherwise expressly provided in this Agreement, Novartis shall have the right to make the final decision with regard to the disputed matter following good faith consideration of Fluidigm's comments. Notwithstanding anything to the contrary in this Section 2.1(b), Novartis shall have sole decision-making authority with respect to all quality to the extent so specified in the Novartis Development Quality Agreement if and when the parties execute the Novartis Development Quality Agreement. Subject to the preceding sentence and the other terms of this Agreement and the Ancillary Agreements, Fluidigm shall have sole decision-making authority with respect to all matters pertaining to the design, development, or manufacture of Fluidigm Chips and Fluidigm Instruments (and Novartis' right of final decision set forth in the third sentence of this clause (b) shall not apply with respect to such matters).

(c) Meetings. The JSC shall meet at least bi-weekly either in person, at a location in California as designated on an alternating basis by each party unless otherwise determined by the JSC, or by telephone, video conference equipment or similar means in which each participant can hear what is said by, and be heard by, the other participants. A quorum shall be required and shall exist whenever there is present at a meeting at least one (1) representative appointed by each party.

(d) Minutes. The JSC shall keep minutes of its meetings that record in reasonable detail all decisions and all actions recommended or taken. The parties shall alternate

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responsibility for the preparation and circulation of draft minutes. Each JSC representative shall have the opportunity to provide comments on the draft minutes. The draft minutes shall be sent to the other party for review or comment within five (5) days following the meeting to which the minutes pertain. The minutes shall be approved by the JSC at the next JSC meeting. Upon approval, final minutes of each meeting shall be circulated to each representative of the JSC.

(e) Expenses. Each party shall bear all costs of its representatives related to their participation on the JSC and attendance at JSC meetings.

2.2 Alliance Managers. Each party shall designate within its respective organization an alliance manager (an "**Alliance Manager**") with responsibility for facilitating the interaction and cooperation between the parties with respect to the activities conducted hereunder. Each party may change its designated Alliance Manager from time to time upon written notice to the other party. Each Alliance Manager shall be charged with creating and maintaining a collaborative work environment and facilitating the interaction and cooperation between the parties. Each Alliance Manager shall (a) be the point of first referral in all matters of conflict resolution; (b) coordinate the relevant functional representatives of the parties in developing and executing strategies and plans under the Collaboration Plan; (c) provide a single point of communication for seeking consensus both internally within the respective parties' organizations and between the parties regarding key strategy and plan issues; (d) identify and bring disputes to the attention of the JSC in a timely manner; (e) plan and coordinate cooperative efforts and internal and external communications; (f) create the meeting agenda, co-chair the meetings, share resources and to ensure alignment for completion of action items; and (g) take responsibility for ensuring that governance activities, such as the conduct of required meetings and production of meeting minutes occur as set forth in this Agreement, and that relevant action items resulting from such meetings are appropriately carried out or otherwise addressed.

ARTICLE III
Collaboration

3.1 Collaboration Plan.

(a) General. Under the direction and supervision of the JSC, each party shall perform, or cause to be performed, its respective Collaboration Activities in accordance with this Agreement and the Collaboration Plan.

(b) Scope of the Collaboration. Subject to Section 5.4, the parties shall collaborate in the Primary Field (i) to identify and develop reagents, including ASR reagents, that are necessary or useful for development of a Test in the Primary Field, (ii) to develop or modify the Fluidigm Technology as necessary or useful for development of a Test in the Primary Field, and (iii) to develop a Test in the Primary Field using reagents and the Fluidigm Technology (including Fluidigm Chips and Fluidigm Instruments). To achieve such purpose, the parties have developed the detailed work plan attached hereto as Exhibit B, as amended from time to time by the JSC in accordance with this Agreement (the "**Collaboration Plan**"). From time to time, either party may propose to the JSC for review any proposed amendments to the Collaboration Plan. Each party shall have the opportunity to review and

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comment upon the proposed updates to the Collaboration Plan through its representatives on the JSC prior to its approval by the JSC (which approval shall require the consent of both parties' representatives).

(c) Performance of the Collaboration Plan. The Collaboration Plan shall have three (3) phases (each, a "**Phase**"). The first Phase of the Collaboration Plan is anticipated to begin [***] and be completed [***] ([***] months). The second Phase is anticipated to take approximately [***] months. The third Phase is anticipated to take [***] months. The Collaboration Activities shall not progress from one Phase to the next Phase without the written consent of Novartis, which consent may be withheld in Novartis's sole discretion.

(d) Reports. Every month in which Collaboration Activities are performed, each party shall provide to the JSC a written progress report, which shall describe the Collaboration Activities it has performed, or caused to be performed during such calendar quarter, evaluate the Collaboration Activities performed and provide such other information as may be required by the Collaboration Plan or reasonably requested by the JSC with respect to such activities, including progress made, issues arising, and inventions made during that month. If the JSC reasonably believes that a Phase is complete (other than the final report), the JSC shall request from each party a final written report for such Phase (a "**Final Report**"), which report shall be completed within thirty (30) days after the date of such request (the "**Final Report Due Date**").

(e) FTE Obligations. During the term of this Agreement, each party shall dedicate research and development FTEs, as set forth on the Collaboration Plan, [***] time commitment to the Collaboration Plan (or such other time commitment as set forth in the Collaboration Plan).

3.2 Phase 1 Collaboration Milestones.

(a) Subject to Section 3.2(b), during Phase 1, Fluidigm shall be diligent and use reasonable efforts to achieve the following milestones within the time periods set forth in the Collaboration Plan:

(i) Collaboration Milestone 1. [***]

(ii) Collaboration Milestone 2. [***]

(iii) Collaboration Milestone 3. [***]

(iv) Collaboration Milestone 4. [***]

(v) Collaboration Milestone 5. [***]

(vi) Collaboration Milestone 6. [***]

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(b) During Phase 1, Novartis shall be diligent and use reasonable efforts to achieve the following milestones:

(i) [***]

(ii) [***]

(iii) [***]

(iv) [***]

(v) [***]

If Novartis fails to achieve the milestones listed above in Sections 3.2(b)(i) to (iv) in the time allotted above or in the Collaboration Plan, then Fluidigm shall have no obligation to achieve its milestone listed in Section 3.2(a)(v) to the extent and for so long as its failure is attributable to such failure by Novartis.

3.3 Phase 2 and 3 Collaboration and Quality Milestones. Prior to execution of the License Agreement (if applicable), the Parties shall amend the Collaboration Plan and this Agreement to include collaboration and quality milestones for Phase 2 and Phase 3 and the compensation of Fluidigm with respect thereto.

3.4 General Conduct of Collaboration Activities. Under the direction and supervision of the JSC, each party shall (a) perform, or cause to be performed its Collaboration Activities in good scientific manner, and in compliance in all material respects with all Applicable Law and in accordance with the quality milestones set forth in Exhibit B and (b) allocate reasonable time, effort, equipment and skilled personnel to complete such activities successfully and promptly and in accordance with the Collaboration Plan. In general, Fluidigm shall be responsible for chip and instrument reader design and manufacturing with design requirements from Novartis.

3.5 Principal Scientist. The day-to-day Collaboration Activities shall be conducted under the joint direction and supervision the principal scientists, [***] (each, a "**Principal Scientist**"). The Principal Scientists shall be the primary contacts for the parties with respect to the Collaboration Activities. Each party shall ensure that it shall not substitute or materially reduce the time commitment of its Principal Scientist to the Collaboration Activities without the prior written approval of the other party, not to be unreasonably withheld, *provided* that a party may appoint a substitute if its Principal Scientist dies, resigns, or is terminated for cause, or to the extent that its Principal Scientist is disabled.

3.6 Record Keeping. Each party shall maintain, or cause to be maintained, records of its respective Collaboration Activities in sufficient detail and in good scientific manner appropriate for patent and regulatory purposes, which shall be complete and accurate and shall fully and properly reflect all work done and results achieved in the performance of its respective Collaboration Activities, and which shall be retained by such party for at least five (5)

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years after the expiration or the termination of this Agreement, or for such longer period as may be required by Applicable Law. Each party shall have the right, during normal business hours and upon reasonable notice, to inspect and copy any such records maintained by the other party solely as reasonably required for the purpose of exercising its rights and performing its obligations under this Agreement or any Ancillary Agreement.

3.7 Cooperation.

(a) General Assistance. Each party shall cooperate with any and all reasonable requests for assistance from the other party with respect to the Collaboration Activities and regulatory processes with respect thereto, including by making the assisting party's, and its Affiliates', employees, consultants and other scientific staff available upon reasonable notice during normal business hours at their respective places of employment to consult with the requesting party on issues arising with respect to the Collaboration Activities.

(b) Information Disclosure. Fluidigm shall, and shall cause its Affiliates to, without additional compensation, in the normal course of the Collaboration Activities reasonably disclose and make available to Novartis, as reasonably required for Novartis to exercise its rights or perform its obligations under this Agreement using the Core Fluidigm Technology, in whatever form Novartis may reasonably request, Fluidigm Know-How and Collaboration Information and Inventions and Regulatory Documentation relating to the Fluidigm Technology in the Primary Field or Secondary Field. In addition, at Novartis' written request, Fluidigm will so disclose and make available to Novartis, as reasonably required for Novartis to exercise its rights or perform its obligations under this Agreement using the Core Fluidigm Technology, in whatever form Novartis may reasonably request, such additional Fluidigm Know-How and Collaboration Information and Inventions and any Regulatory Documentation relating to the Fluidigm Technology in the Primary Field or Secondary Field as Novartis may specifically request.

3.8 Costs. Each party shall bear its own costs related to the Collaboration Activities, subject solely to the payment obligations set forth in ARTICLE VI.

ARTICLE IV
Supply

4.1 Collaboration and Clinical Trial Supply Obligations. Novartis may purchase from Fluidigm and Fluidigm shall supply to Novartis commercially available Fluidigm chips as well as Fluidigm Chips, Fluidigm Instruments, including, for clarity, any additional buffers and reagents (excluding assay reagents) and other consumables (e.g., oils) required for the operation of the foregoing and that are customarily provided by Fluidigm with its sales of its chips, at Novartis's sole discretion, for purposes of conducting the Collaboration Activities. If (following exercise of the License Option) Novartis commences with Fluidigm any research and development project in the Secondary Field other than as provided for herein, Fluidigm shall provide supplies analogous to the foregoing for such project on such terms and the cost bases described below.

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(a) During Phase 1, Fluidigm shall supply Fluidigm's commercially available [***] chips as well as Fluidigm Chips as are designated by Novartis and associated materials (as described above) as deemed necessary by Novartis and in quantities deemed necessary by Novartis [***], for Novartis to fulfill its obligations herein, [***]. Additional chips (and associated materials) requested by Novartis [***].

(b) During Phases 2 and 3, Fluidigm shall supply Novartis up to [***].

(c) During Phase 2 and Phase 3, Fluidigm shall supply Novartis Commercial Chips and associated materials [***] as deemed necessary by Novartis and in quantities deemed necessary by Novartis for Novartis to fulfill its obligations under this Agreement, [***].

(d) For clinical trials, Fluidigm shall supply Novartis Commercial Chips at a price of [***].

(e) During each Phase, Fluidigm shall supply [***].

(f) The Fluidigm chips, including Fluidigm Chips, associated materials, and Fluidigm Instruments may be purchased at the terms set forth above by Novartis or an Affiliate thereof from Fluidigm under a separate purchase order at the discretion of Novartis.

(g) Fluidigm shall maintain, or cause to be maintained, in accordance with Applicable Law relating to the Fluidigm Technology, and giving due consideration, in good faith, to any written instructions from Novartis, (i) all records necessary to comply with all Applicable Law relating to the Fluidigm Technology, (ii) all manufacturing records, standard operating procedures, equipment log books, laboratory notebooks and all raw data relating to the manufacturing of the Fluidigm Technology, and (iii) such other records as Novartis may reasonably require in order to ensure compliance by Fluidigm of its obligations under this Agreement and any Ancillary Agreement. During Phase 2 and Phase 3, the parties shall comply with that certain development quality agreement executed by the parties simultaneously with this Agreement, which development quality agreement is attached hereto as Exhibit A (the "**Novartis Development Quality Agreement**"). Without limitation of Section 3.2(a), the parties shall have no obligation to comply with the terms of such agreement during Phase 1.

4.2 Audit and Inspection. Fluidigm agrees that Novartis and its agents or other designees shall have the right from time to time, upon reasonable prior notice to Fluidigm, and during regular business hours, to inspect any facility in which Fluidigm or its Affiliates manufacture the Fluidigm Technology, and interview personnel of Fluidigm or its Affiliates, including inspection of and interviews with respect to (a) the materials used or to be used in the manufacture of the Fluidigm Technology, (b) the equipment used in connection with the manufacture of the Fluidigm Technology, and (c) all records relating to such manufacturing of the Fluidigm Technology.

4.3 Supply Agreement. Fluidigm hereby grants to Novartis the exclusive option, at no additional charge and exercisable simultaneously with or after the parties execute the

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License Agreement, to enter into an exclusive commercial supply agreement for Fluidigm Instruments and Fluidigm Chips for use in the Primary Field or Secondary Field (the "**Supply Agreement**") and a related manufacturing quality agreement. If Novartis exercises such option, the parties shall negotiate in good faith for a period of thirty (30) days, the terms of the Supply Agreement, which terms shall include the terms set forth on Exhibit G. If at the end of such period the parties fail to reach agreement on the terms of the Supply Agreement, the areas of disagreement shall be referred to the JSC, *provided* that if the JSC decision is not unanimous, the dispute shall be referred to the Executives pursuant to Section 12.6 for resolution. If the Executives fail to reach a resolution within thirty (30) days after the matter is first brought before them, the terms set forth on Exhibit G shall constitute the Supply Agreement. If after Completion of Phase 1 that demonstrates to Novartis a successful proof of concept, Novartis is unable to show commercial feasibility in models prior to commercial launch, then the parties shall enter into good faith negotiations to renegotiate the chip supply pricing set forth on Exhibit G.

ARTICLE V
License Grants, Option Rights and Related Matters

5.1 License Grants.

(a) Subject to the terms and conditions of this Agreement, each party hereby grants to the other party a non-exclusive right and license in the Primary Field and Secondary Field in the Territory, to perform its obligations or exercise its rights under this Agreement during the term of this Agreement, under its and its Affiliates' rights, titles, and interests in and to the Fluidigm Patents (in the case of Fluidigm) and Novartis Patents (in the case of Novartis) necessary to perform such obligations or exercise such rights; *provided*, *however*, that such license shall not extend to any activities of either party outside the scope of this Agreement or to the exercise by Fluidigm of the license granted to it in Section 5.1(b). The license granted in this Section 5.1(a) shall be sublicensable only to the party's Affiliates and permitted subcontractors and only to the extent reasonably required in connection with the performance of such obligations or exercise of such rights by such Persons. For avoidance of doubt, (i) each party shall have no rights, express or implied, under the other party's Patents or Know-How, except as expressly provided in this ARTICLE V or in a separate written agreement, and (ii) without limitation of any rights of Novartis under any Ancillary Agreement, Novartis is not granted any right under this Agreement to manufacture any Fluidigm products. For clarity, Novartis shall have no obligation to disclose to Fluidigm any Novartis Patents or Novartis Know-How.

(b) Subject to the restrictions in Section 5.4 and Section 7.1(b) and the other terms and conditions of this Agreement, Novartis hereby grants Fluidigm a worldwide, royalty free (except as otherwise provided herein), non-exclusive and non-sublicensable (except as set forth below in this Section 5.1(b)) right and license under the Novartis Solely-Owned Collaboration Information and Inventions and any Novartis solely-owned Collaboration Patents claiming such Information and Inventions solely for research (i.e., not clinical) purposes, including sales of individual components of Fluidigm Technology for research purposes,

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provided, however, that such license shall include such intellectual property only if and to the extent that Novartis is able to make such grant without incurring a payment obligation to any Third Party in connection with the grant of such license or its exercise by Fluidigm. Such right and license shall be limited to activities conducted outside the Primary Field and Secondary Field except to the extent otherwise provided in Section 9.5(c). Notwithstanding the above prohibition on sublicensing, Fluidigm shall be entitled grant sublicenses of these rights in connection with sales or other transfers of Fluidigm products, which sublicense shall be limited to use of the Fluidigm product so sold or transferred.

5.2 Option. Fluidigm hereby grants Novartis an exclusive option, exercisable at any time during the Option Term, to enter into the License Agreement (the "**License Option**"), under which Fluidigm grants Novartis an exclusive license to the Fluidigm Patents and the Fluidigm Know-How (including any Collaboration Know-How and Collaboration Patents solely owned by Fluidigm) in the Primary Field and the Secondary Field (as such license is more fully described in the License Agreement). If Novartis desires to exercise the License Option, it shall notify Fluidigm of its intention to do so prior to the end of the Option Term. Within thirty (30) days after such notice is delivered to Fluidigm, the parties shall execute the License Agreement.

5.3 Right of First Negotiation. If Fluidigm desires to Exploit any Collaboration Information and Inventions at any time during the Option Term (or if the License Agreement is executed, during the term of the License Agreement) for any type of screening, diagnostic, prognostic, predictive or other product used by Fluidigm or a Third party to perform clinical services and report a result for a fee or sold to a laboratory performing services and reporting results for a fee, outside of the Primary Field and the Secondary Field, then Fluidigm shall notify Novartis in writing and Novartis shall have thirty (30) days from receipt of such notice in which to respond and, if applicable, begin negotiations for an exclusive, worldwide license under the Fluidigm Patents and Fluidigm Know-How to Novartis for clinical applications in such field. If (a) Novartis does not respond to Fluidigm's notice within such thirty (30)-day period, (b) Novartis declines its right of first negotiation, or (c) the parties are unable to execute a definitive agreement within one hundred and twenty (120) days after Novartis notifies Fluidigm that it desires such a license pursuant to this Section 5.3, then if Fluidigm proceeds with commercialization in such field on its own, by or with a Third Party, then Novartis shall receive, in addition to the royalty set forth in Section 6.2, an additional non-refundable royalty of [***] on the Net Sales of the Results, where (i) the generation of such Results is covered by a Valid Claim of the Collaboration Patents in the country in which such Results are generated, or where (ii) such Results are generated using a Fluidigm Product, the sale of which is covered by a Valid Claim of the Collaboration Patents in the country of sale. For the avoidance of doubt, (A) Fluidigm will be entitled to Exploit all Fluidigm Solely-Owned Collaboration Information and Inventions, and all jointly owned Collaboration Information and Inventions, outside the Primary Field and the Secondary Field without any royalty obligation under this Section 5.3 if such Exploitation is not covered by a Valid Claim of the Collaboration Patents in the country in which such Results are generated (as described in clause (i) above), or if such Results are generated using a Fluidigm Product, the sale of which is not covered by a Valid Claim of the Collaboration Patents in the country of sale (as described in clause (ii) above); and (B) if Novartis does not exercise its right of first negotiation, or if it does so but the parties are unable to execute a

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definitive agreement within the above one hundred and twenty (120) day period, with respect to any field, then Fluidigm will have fully performed its notice and negotiation obligations under this Section 5.3 with respect to that field and shall have no further obligation with respect to such right of first negotiation at any time.

5.4 Non-Compete. During the term of this Agreement, Fluidigm covenants that, except for the performance of Fluidigm's Collaboration Activities and the performance of Fluidigm's obligations under this Agreement or any Ancillary Agreement, it and its Affiliates shall not (a) Exploit any product or service in the Primary Field or Secondary Field (other than the conduct of research, and the sale and other disposal (including manufacture, storage, exportation, transportation, distribution, promotion and marketing activities related thereto) of products for conducting research in the Secondary Field, which research shall not include providing clinical results for a fee or for use in the medical management of a patient), (b) conduct any activity with, for the benefit of, or sponsored by, any Person, that has as its goal or intent Exploiting any product or service in the Primary Field or Secondary Field, or (c) grant any license or other rights to any Person to utilize any intellectual property Controlled by Fluidigm or its Affiliates (including any Fluidigm Patents or Fluidigm Know-How) to Exploit any product or service in the Primary Field or the Secondary Field (other than licenses to Third Parties to perform research in the Secondary Field, which research shall not include providing clinical results for a fee or for use in the medical management of a patient). Fluidigm acknowledges that the restrictions contained in this Section 5.4 are reasonable, valid and necessary for the adequate protection of the Novartis Licensed Products business in the Primary Field and the Secondary Field and that Novartis would not have entered into this Agreement without the protection afforded to it by this Section 5.4. Notwithstanding the foregoing, Fluidigm may grant, in connection with the sale of the Fluidigm Technology, a restricted research only license to use Fluidigm Technology and Fluidigm Know-How and Fluidigm Patents (including the Fluidigm Method), and all Collaboration Information and Inventions owned solely or jointly by Fluidigm and Collaboration Patents owned solely or jointly by Fluidigm, in the Primary Field to academic institutions for research purposes only, including in connection with the commencement of new research studies or maintenance of existing research studies (which existing research studies Fluidigm has disclosed to Novartis prior to the Effective Date), *provided* that Fluidigm obtains Novartis' prior written consent to the terms of the new agreements with such academic institutions, which consent shall not be unreasonably withheld. In no event shall Fluidigm grant to any academic collaborator access to or rights to use Fluidigm Technology or the Fluidigm Method in the Primary Field or Secondary Field to provide a result that will be used in the medical management of a patient or provide a Result. It is understood and agreed that, prior to the Effective Date, Fluidigm has granted, in connection with and solely for the use of Fluidigm products shipped prior to the Effective Date for research use only, licenses for research purposes only that do not prohibit use of such products for such research purposes in the Primary Field or Secondary Field, which licenses are ongoing, and that this does not and shall not constitute a breach of this section. For the avoidance of doubt, Fluidigm may grant, in connection with the sale or other transfer of the Fluidigm Technology, licenses to use Fluidigm Technology and Fluidigm Know-How and Fluidigm Patents (including the Fluidigm Method), and all Collaboration Information and Inventions owned solely or jointly by Fluidigm and Collaboration Patents owned solely or jointly by Fluidigm, outside the Primary Field and

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Secondary Field without restriction (but without limitation of the right of first negotiation set forth in Section 5.3 or any royalties due under Section 6.2 or 9.5(e)).

5.5 No Encumbrance. Fluidigm shall not (a) assign, transfer, convey or otherwise encumber any of its rights to the Fluidigm Patents or Fluidigm Know-How, or (b) use any of the foregoing or grant any right, title or interest in or to any of the foregoing, in each case ((a) and (b)) to any Person that is inconsistent with the exclusive licenses or other rights (including the License Option) granted to Novartis under this Agreement or the Supply Agreement. Novartis shall not grant any right, title or interest in or to any of the Novartis Solely-Owned Collaboration Information and Inventions or Novartis solely-owned Collaboration Patents to any Person that is inconsistent with the licenses or other rights granted to Fluidigm under this Agreement or the Ancillary Agreements. It is understood and agreed that, prior to the Effective Date, Fluidigm has granted, in connection with and solely for the use of Fluidigm products shipped prior to the Effective Date, licenses for research purposes only that do not prohibit use of such products for such research purposes in the Primary Field or Secondary Field, which licenses are ongoing, and that this does not and shall not constitute a breach of this section.

5.6 Use of Materials. Fluidigm shall not and shall cause its Affiliates not to: (a) derivatize, modify, reverse engineer or analyze any primers or probes or any other materials supplied to Fluidigm, or its Affiliates, by or on behalf of Novartis or any of its Affiliates, or (b) transfer any such primers, probes or other materials to any Third Party. Fluidigm shall return any such unused primers, probes, or other materials to Novartis immediately following a request from Novartis and at the end of the term of this Agreement. Novartis shall not and shall cause its Affiliates not to derivatize, modify, reverse engineer or analyze any chips, instruments, or any other materials supplied to Novartis, or its Affiliates, by or on behalf of Fluidigm or any of its Affiliates, except in the case in which Fluidigm breaches this Agreement or any Ancillary Agreement in a manner that triggers, but renders Novartis unable to exercise, its alternate supply rights under the Supply Agreement, and Novartis may perform such activities only to enable Novartis to exercise such rights.

ARTICLE VI
Payments and Royalties

6.1 Collaboration Milestone Payments. In consideration of the exclusive research and development and other rights granted by Fluidigm to Novartis herein and subject to the terms and conditions of this Agreement, Novartis shall pay Fluidigm the following payments:

(a) with respect to Phase 1 of the Collaboration Plan, (i) [***] within fifteen (15) days of the execution of this Agreement and (ii) the following payments set forth below following achievement of the applicable milestones:

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Table 1. Milestone Payments

Milestones	Payment Amounts
Collaboration Milestone 1	[***]
Collaboration Milestone 2	[***]
Collaboration Milestone 3	[***]
Collaboration Milestone 4	[***]
Collaboration Milestone 5	[***]
All Collaboration Milestones (1-6) and delivery of the Final Report for Phase 1	[***]

(b) with respect to each of Phases 2 and 3, and any anticipated subsequent Phases of the Collaboration Plan, the parties shall mutually agree upon the milestone payments to be made by Novartis to Fluidigm, which shall not be pre-paid, and the timing therefor, prior to the execution of the License Agreement. Such payments shall partially support Phases 2 and 3 and any subsequent Phases. The JSC shall determine the FTE rate to be used to determine such milestone payments, *provided* that if the JSC can not reach unanimous agreement on such milestone payments within thirty (30) days, the dispute shall be escalated to the Executives pursuant to Section 12.6.

(c) For each milestone payment other than the first payment in Section 6.1(a), Fluidigm shall report the achievement of the milestone to the JSC and provide related supporting documents to the JSC in order for the JSC to confirm whether the milestone has been achieved. If there is a dispute concerning whether a milestone has been achieved, the dispute shall be escalated to the Executives pursuant to Section 12.6. Upon the JSC's or Executives', if applicable, confirmation that a milestone has been achieved, Fluidigm shall invoice Novartis for the corresponding milestone payment amount and Novartis shall pay such amount within sixty (60) days of receiving such invoice. For clarification, each milestone payment shall be payable only once irrespective of the number of times a milestone event set forth in this Section 6.1 is achieved.

6.2 Royalties to Novartis. Fluidigm shall pay to Novartis, based on worldwide aggregate Net Sales (whether made by Fluidigm, its Affiliates, (sub)licensees (or a Third Party under agreement with Fluidigm, including a Third Party commercialization partner or customer) of the Results that are generated using a Fluidigm Royalty-Bearing Product outside the Primary Field and Secondary Field, non-refundable royalties in the amount of [***] of the Net Sales of such Results, but only if the sale of the Fluidigm Royalty-Bearing Product is covered by a Valid Claim of the Collaboration Patents in the country of sale; and *provided, however*, that this

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royalty shall not apply to any activities that are subject to the royalties set forth in Section 9.5(e) (including, for clarity, that this royalty shall not apply to any activities that are not royalty-bearing under Section 9.5(e)(i) due to termination of this Agreement by Fluidigm, pursuant to Section 9.2, for non-payment by Novartis).

6.3 Royalty Payments. Royalties due under Section 6.2 shall be payable on a quarterly basis, within sixty (60) days after the end of each calendar quarter, based upon the Net Sales during such calendar quarter, commencing with the calendar quarter in which the first commercial sale of the applicable Results is made. Royalties shall be calculated in accordance with United States generally accepted accounting principles consistently applied and with the terms of this ARTICLE VI. Each royalty payment hereunder shall be accompanied by a statement showing (a) invoiced sales and Net Sales, (b) the number of applicable Results provided by Fluidigm (or its Affiliates, (sub)licensees, Third Party commercialization partners or Fluidigm customers) on a country-by-country basis during the applicable calendar quarter, and (c) the amount of royalties due on such Net Sales.

6.4 Records Retention; Audit.

(a) Fluidigm shall keep (and shall cause its Affiliates and (sub)licensees to keep) records of sales (or provision of Results) that trigger a royalty under this Agreement until the third anniversary of December 31 of the calendar year in which such sales (or provision) occur. For any payment under this Agreement by Novartis that is not based on a fixed amount set forth in this Agreement, Fluidigm shall keep (and cause its Affiliates to keep) records demonstrating the basis for the amount charged until the third anniversary of December 31 of the calendar year in which such amounts were charged to Novartis under this Agreement. Upon the written request of Novartis and not more than once in each calendar year, Fluidigm shall permit an independent certified public accounting firm of nationally recognized standing selected by Novartis, and reasonably acceptable to Fluidigm, at Novartis's expense, to have access during normal business hours, and upon reasonable prior written notice, to such of the records of Fluidigm as may be reasonably necessary to verify the accuracy of the royalty reports and such amounts charged for any calendar year ending not more than thirty-six (36) months prior to the date of such request. The accounting firm shall disclose to Fluidigm and Novartis whether the royalty reports are correct or incorrect and the specific details concerning any discrepancies and any identification of any non-compliance by Fluidigm with respect to such charge. No other information shall be provided to Novartis. Any failure by Novartis to exercise its right under this Section 6.4(a) with respect to a calendar year, within the time period allotted therefor, shall constitute a waiver by Novartis of its right to later object to the amount of royalties paid by Fluidigm or amounts charged to Novartis under this Agreement during such calendar year. Novartis shall treat all information subject to review under this Section 6.4 in accordance with the confidentiality provisions of ARTICLE VIII and shall cause its accounting firm to enter into a reasonably acceptable confidentiality agreement with Fluidigm obligating such firm to retain all such financial information in confidence pursuant to such confidentiality agreement.

(b) Adjustments. If such accounting firm concludes that additional royalties were owed during a given period or that Novartis was overcharged by Fluidigm under

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this Agreement, within sixty (60) days after the date on which such accounting firm's written report is delivered to Fluidigm, Fluidigm shall pay the additional royalties or refund the amounts overcharged with interest from the date originally due calculated under Section 6.5 as if it were a late payment. Fluidigm shall reimburse Novartis for all costs related to such audit if, and only if, the amount of the underpayment by Fluidigm or overcharge by Fluidigm is greater than [***] of the total amount owed or charged, as applicable, for such period.

6.5 Mode of Payment. All payments to Fluidigm or Novartis under this Agreement shall be made by deposit of United States Dollars in the requisite amount to such bank account as such party may from time to time designate by notice to the other party. Such bank account of Fluidigm as of the Effective Date is Fluidigm Corporation, [***]. With respect to sales outside the United States, payments shall be calculated based on currency exchange rate for the last day of the calendar quarter for which remittance is made for royalties. Such exchange rate shall be obtained from *The Wall Street Journal*, Eastern United States Edition, or, if not so available, as otherwise agreed by the parties.

6.6 Taxes.

(a) The royalties and milestone payments under this Agreement ("**Payments**") shall not be reduced on account of any taxes except as set forth herein. The party on whom any such tax is assessed alone shall be responsible for paying any and all such taxes (other than withholding taxes required by Applicable Law to be withheld and paid by the party making the Payment (the "**Paying Party**")) levied on account of, or measured in whole or in part by reference to, any Payments. The Paying Party shall deduct or withhold from the Payments any taxes assessed on the party receiving the Payment (the "**Payment Receiving Party**") that the Paying Party is required by Applicable Law to deduct or withhold. Notwithstanding the foregoing, if the Payment Receiving Party is entitled under any applicable tax treaty to a reduction of rate of, or the elimination of, applicable withholding tax, it may deliver to the Paying Party or the appropriate governmental authority (with the assistance of the Paying Party to the extent that this is reasonably required and is expressly requested in writing) the prescribed forms necessary to reduce the applicable rate of withholding or to relieve the Paying Party of its obligation to withhold tax, and the Paying Party shall apply the reduced rate of withholding, or dispense with withholding, as the case may be, *provided* that the Paying Party has received evidence, in a form satisfactory to the Paying Party, of the Payment Receiving Party's delivery of all applicable forms (and, if necessary, its receipt of appropriate governmental authorization) at least fifteen (15) days prior to the time that the Payments are due. If, in accordance with the foregoing, the Paying Party withholds any amount, it shall pay to the Payment Receiving Party the balance when due, make timely payment to the proper taxing authority of the withheld amount, and send to the Payment Receiving Party proof of such payment within sixty (60) days following that payment. For the avoidance of doubt, the parties acknowledge and agree that none of the milestones or royalties payable under this Agreement are related to the license (or right) to import or any import of any Novartis Licensed Product or Fluidigm Royalty-Bearing Product.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(b) Any prices for Fluidigm Products set forth in this Agreement are exclusive of any U.S. or foreign sales, use, value added or other similar tax that may be due on the sale or purchase of the Fluidigm Products under this Agreement (*provided* that Fluidigm shall use any reasonably available tax exemptions in connection with any such sale).

ARTICLE VII
Intellectual Property Rights

7.1 Intellectual Property Ownership.

(a) Ownership of Intellectual Property. Subject to the license grants to each party herein, as between the parties, Novartis shall own and retain all right, title and interest in and to any and all of the Novartis Patents and the Novartis Know-How, including the Novartis Solely-Owned Collaboration Information and Inventions, and Fluidigm shall own and retain all right, title and interest in and to any and all of the Fluidigm Patents and the Fluidigm Know-How, including the Fluidigm Solely-Owned Collaboration Information and Inventions. The parties shall jointly and equally own all Collaboration Information and Inventions other than the Novartis Solely-Owned Collaboration Information and Inventions and the Fluidigm Solely-Owned Collaboration Information and Inventions. Except as may be expressly otherwise set forth in this Agreement or an Ancillary Agreement (including in ARTICLE V), each party shall be entitled to Exploit its joint ownership interest in the jointly owned Collaboration Information and Inventions and all associated jointly owned intellectual property rights, without any duty of notice or accounting.

(b) Disclosure, Assignment and Use of Collaboration IP. Each party shall, pursuant to a procedure, to be established by the JSC no later than thirty (30) days after the Effective Date, disclose to the other party in writing the conception, development or making of any Collaboration Information and Inventions by or on behalf of such party (or its Affiliates or subcontractors). Subject to Section 7.2, each party shall, and does hereby, assign, and shall cause its Affiliates and (sub) licensees to so assign, to the other party, without additional compensation, such right, title and interest in and to any Collaboration Information and Inventions, Collaboration Know-How and Collaboration Patents, as is reasonably necessary to fully effect the ownership of the foregoing as provided for in Section 7.1(a). For clarity, Novartis has the unrestricted right to Exploit the Novartis Solely-Owned Collaboration Information and Inventions and jointly-owned Collaboration Information and Inventions for any and all purposes. For clarity and without limitation of Fluidigm's rights after termination or expiration of this Agreement, during the term of this Agreement Fluidigm shall have the right to Exploit the Fluidigm Solely-Owned Collaboration Information and Inventions and jointly owned Collaboration Information and Inventions (i) for research purposes (A) without restriction outside the Primary Field and Secondary Field and (B) without restriction in the Primary Field and Secondary Field except as set forth in Section 5.4; and (ii) for clinical purposes (A) without restriction outside the Primary Field and Secondary Field subject to Novartis' right of first negotiation (and any resulting agreement) under Section 5.3 and (B) in the Primary Field and

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Secondary Field only as expressly provided for in this Agreement or any Ancillary Agreement. For clarity and without limitation of Fluidigm's rights after termination or expiration of this Agreement, during the term of this Agreement Fluidigm shall have the right to Exploit Novartis Solely-Owned Collaboration Information and Inventions (i) for research purposes, only to perform Collaboration Activities or as set forth in Section 5.1(b); and (ii) for clinical purposes, only with the written permission of Novartis. Fluidigm's exercise of such rights pursuant to the license grant in Section 5.1(b) includes sales of individual components of Fluidigm Technology for research purposes; *provided*, *however,* that Fluidigm shall ensure that neither Fluidigm nor its Affiliates combine, and shall use reasonable best efforts that no Third Party combines, such components or hardware and software into a kit used for any purpose where any end user uses such kit to provide a result that will be used in the medical management of a patient or provide clinical results for a fee. Fluidigm may Exploit the data that constitutes Collaboration Information and Inventions and relates to sample handling, sample preparation, or assay (including primers and probes) or arises from Phase 3, as reasonably required, including for Fluidigm to access in order to secure FDA approval of the Fluidigm Products, *provided* that Fluidigm shall obtain Novartis' written consent to disclose any such data, such consent not to be unreasonably withheld, and *provided* that any such disclosure shall be subject to ARTICLE VIII. For the avoidance of doubt, neither party transfers or assigns any Patents existing prior to the Effective Date (and any resulting Patent rights), nor any Patents to the extent claiming inventions within the Excluded Information and Inventions.

(c) United States Law. The determination of whether Information and Inventions are conceived, developed or made by a party for the purpose of allocating proprietary rights (including Patent rights, copyrights or other intellectual property rights) therein in accordance with the terms of this Agreement, shall be made in accordance with applicable United States law.

7.2 Prosecution of Collaboration Patents. Each party, through patent attorneys or agents of its choice, shall have the first right, but not obligation, to prepare and file Patent applications claiming its respective solely owned Collaboration Information and Inventions and to obtain, prosecute, and maintain its respective solely owned Collaboration Patents throughout the Territory subject to the remainder of this Section 7.2. Novartis, through patent attorneys or agents of its choice, shall have the first right, but not obligation, to prepare and file Patent applications claiming the jointly owned Collaboration Information and Inventions and to obtain, prosecute, and maintain the jointly owned Collaboration Patents throughout the Territory subject to the remainder of this Section 7.2. The Parties' patent counsel shall confer and coordinate regarding the filing and prosecution of Patents on the Collaboration Information and Inventions. Except as otherwise agreed by the Parties, such Patents shall be initially filed in a jointly owned patent application, *provided* that (i) any claims that are solely directed to the design, development, or manufacture of Fluidigm Chips or any other chips, Fluidigm Instruments or any other instruments, or associated control software, shall, at the request of Fluidigm, be filed in a divisional application prosecuted by Fluidigm and assigned solely to Fluidigm, and (ii) any claims in such Patent application that are solely directed to an assay (including any assay-related algorithms constituting Collaboration Information and Inventions), but excluding any improvements to the inventions claimed in the Fluidigm Assay Patent Claims (including

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Fluidigm algorithms or mathematical models claimed in the Fluidigm Assay Patent Claims) shall, at the request of Novartis, be filed in a divisional application prosecuted by Novartis and assigned solely to Novartis. It is understood that any Patent claims that are directed both to (x) the design, development, or manufacture of Fluidigm Chips or any other chips, Fluidigm Instruments or any other instruments, or associated control software, and to (y) an assay (including any assay-related algorithms constituting Collaboration Information and Inventions) shall be jointly owned. Each party shall have the right to request that the other party (if it is the party with prosecution rights, as described above) obtain, prosecute and maintain a Collaboration Patent in a particular country. If the party with first priority declines, or otherwise fails, to initiate any such requested action with respect to a Collaboration Patent within sixty (60) days (and thereafter diligently pursues such action), the other party shall have the right to take such action with respect to such Collaboration Patent in the name of such other party or as otherwise agreed by the parties in writing, *provided* that each party shall obtain the consent of the other party prior to doing so, which consent shall not be unreasonably withheld, where it shall be reasonable to withhold consent if taking such action could affect the scope, validity or enforceability of any Collaboration Patent. Each party shall, and shall cause their respective Affiliates, as applicable, to assist and cooperate with one another in filing, prosecuting and maintaining the Collaboration Patents. Each party shall bear its own expenses under this Section 7.2. The prosecuting party under this Section 7.2 shall consult with the other party as to the strategy and prosecution and maintenance of the Collaboration Patents under this Section 7.2 and shall provide other party with sufficient opportunity to review and comment on the nature and text of new or pending applications, amendments, registrations, filing, submissions, pleadings, responses or correspondence with any patent authorities with respect to the jointly owned Collaboration Patents. The prosecuting party shall (A) notify the other party as early as reasonably practicable in advance of all meetings and significant communications with any patent authorities concerning the Collaboration Patents and shall permit the other party to participate in such meetings, (B) promptly prepare and deliver to the other party complete and accurate minutes of any such meeting or communications, and (C) promptly forward to the other party copies of all office actions and written communications received from any patent authorities with respect to the Collaboration Patents upon receipt therefrom.

7.3 Enforcement and Defense of Collaboration Patents. If either party reasonably believes that a Third Party may be infringing any of the Collaboration Patents in the Primary Field or Secondary Field in the Territory, such party shall promptly notify the other party in writing, identifying the alleged infringer and the alleged infringement complained of and furnishing the information upon which such determination is based. With respect to its solely owned Collaboration Patents (except as otherwise agreed in the License Agreement, or agreed by the parties upon expiration or termination of this Agreement if the License Option is not exercised) each party shall have the sole right, but not the obligation, through counsel of its choosing, to take any measures it deems appropriate to stop such infringing activities by such Third Party in any part of the Territory and to defend such Collaboration Patent against any invalidity or unenforceability action. The parties shall cooperate reasonably with respect to the enforcement and defense of jointly owned Collaboration Patents.

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ARTICLE VIII
Confidentiality and Nondisclosure

8.1 Restricted Fluidigm Information. Fluidigm recognizes that Novartis has an interest in Fluidigm's retention in confidence of the Fluidigm Know-How and the Collaboration Know-How. Accordingly, until the expiration or termination of this Agreement, Fluidigm shall, and shall cause its Affiliates and their respective officers, directors, employees and agents to, keep completely confidential, and not publish or otherwise disclose (except as set forth below in this section), and not use for any purpose in the Primary Field or Secondary Field (except for uses expressly permitted under this Agreement or any Ancillary Agreement, which uses for clarity shall be subject to the restrictions on use set forth in this Agreement and shall be subject to any applicable royalty set forth in this Agreement) any Fluidigm Know-How relating to the Primary Field or Secondary Field or Collaboration Know-How (the "**Restricted Information**"); *provided* that the "**Restricted Information**" shall not include any Fluidigm Know-How or Collaboration Know-How to the extent (a) it is in the public domain through no fault of Fluidigm, its Affiliates or any of their respective officers, directors, employees or agents, (b) its disclosure or use by Fluidigm would be expressly permitted under Section 8.3 if it were Confidential Information of Novartis, or (c) its disclosure or use by Fluidigm is otherwise expressly permitted by the terms of this Agreement or any Ancillary Agreement. Fluidigm shall ensure that each of its and its Affiliates' employees is bound by a written confidentiality agreement that is comparable to the protection of the Restricted Information in the provisions set forth in this ARTICLE VIII. Novartis shall ensure that each of its and its Affiliates' employees who is involved in the performance of Novartis's obligations or exercise of Novartis's rights under this Agreement or any Ancillary Agreement is bound by a written confidentiality agreement that is at least as protective of the Restricted Information as the provisions set forth in this ARTICLE VIII. If Fluidigm becomes aware of any disclosure of any Restricted Information or Novartis Confidential Information in violation of this Agreement, Fluidigm shall promptly notify Novartis. If Novartis becomes aware of any disclosure of any Restricted Information or other Fluidigm Confidential Information in violation of this Agreement, Novartis shall promptly notify Fluidigm. For the avoidance of doubt, the treatment of Confidential Information that is also Restricted Information is governed by the terms of this Section 8.1 while the treatment of Confidential Information that is not also Restricted Information is governed by Section 8.2. Notwithstanding the above restriction on Fluidigm's disclosure of Restricted Information, to the extent any Restricted Information also applies to Fluidigm's business outside of the Primary Field or Secondary Field, Fluidigm shall be entitled to disclose Restricted Information in the normal course of, and under such terms as Fluidigm customarily requires in, such other Fluidigm business, *provided* that such terms include terms requiring the maintenance of confidentiality that are comparable to the protection of the Confidential Information of Novartis in the provisions set forth in this ARTICLE VIII. For clarity, notwithstanding Section 7.1(b) or any other provision of this Agreement, except (i) as set forth in this Agreement with respect to Collaboration Know-How and Collaboration Patents, and (ii) as set forth in this Section 8.1, Section 5.3, Section 5.4 and Section 11.2(i), there are no restrictions on Fluidigm in this Agreement with respect to its Exploitation, outside of the Primary Field and the Secondary Field, of Fluidigm Methods, Fluidigm Patents, or any other Information and Inventions and intellectual property rights Controlled by Fluidigm.

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8.2 Confidentiality Generally. At all times during the term of this Agreement and for the applicable confidentiality period specified herein below, each party (the "**Receiving Party**") shall, and shall cause its officers, directors, employees, agents, Affiliates and (sub)licensees to, keep confidential and not publish or otherwise disclose and not use, directly or indirectly, for any purpose, any Confidential Information provided to it by or on behalf of the other party (the "**Disclosing Party**"), except to the extent such disclosure or use is otherwise expressly permitted by the terms of this Agreement or is reasonably necessary for the performance of such party's obligations under this Agreement, or any Ancillary Agreement. Fluidigm shall ensure that each of its and its Affiliates' employees is bound by a written confidentiality agreement that is comparable to the protection of the Confidential Information of Novartis in the provisions set forth in this ARTICLE VIII. Novartis shall ensure that each of its and its Affiliates' employees who is involved in the performance of Novartis's obligations or exercise of Novartis's rights under this Agreement or any Ancillary Agreement is bound by a written confidentiality agreement that is comparable to the protection of the Confidential Information of Fluidigm in the provisions set forth in this ARTICLE VIII. The confidentiality period for regulatory information (e.g., clinical trial data) shall be [***] years following termination or expiration of this Agreement, and the confidentiality period for all other information shall be [***] years following disclosure.

8.3 Permitted Disclosures. Each party may disclose Confidential Information of the other party to the extent that such disclosure is:

(a) made in response to a valid order of a court of competent jurisdiction or other competent authority; *provided*, *however*, that the Receiving Party shall first have given notice to the Disclosing Party and given the Disclosing Party a reasonable opportunity to quash any such order or obtain a protective order requiring that the Confidential Information and documents that are the subject of such order be held in confidence by such court or authority or, if disclosed, be used only for the purpose for which the order was issued; and *provided further* that if such order is not quashed or a protective order is not obtained, the Confidential Information disclosed in response to such court or governmental order shall be limited to that information that is legally required to be disclosed in response to such court or governmental order;

(b) made by a party to a patent authority as may be reasonably necessary or useful for purposes of obtaining or enforcing a Patent (consistent with the terms and conditions of ARTICLE VII); *provided*, *however*, that reasonable measures shall be taken to assure confidential treatment of such information, to the extent such protection is available;

(c) otherwise required by law; *provided*, *however*, that if either party is required to disclose Confidential Information of the other party, the party required to make the disclosure shall (i) provide to the other party reasonable advance notice of and an opportunity to comment on any such required disclosure, (ii) if requested by the other party, seek confidential treatment with respect to any such disclosure to the extent available, and (iii) use good faith efforts to incorporate the comments of the other party in any such disclosure or request for confidential treatment; or

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(d) made by a party or its Affiliates or (sub)licensees to Third Parties as may be reasonably necessary in connection with its performance of the Collaboration Activities as contemplated by this Agreement, including subcontracting or sublicensing transactions in connection therewith or in the case of Novartis, the exercise of its rights or performance of its obligations under the License Agreement.

8.4 Exclusions. Notwithstanding the foregoing, Confidential Information shall not include any information that: (a) is or hereafter becomes part of the public domain by public use, publication, general knowledge or the like through no wrongful act, fault or negligence on the part of the Receiving Party; (b) can be demonstrated by documentation or other competent proof to have been in the Receiving Party's or its Affiliates' possession, without confidentiality restriction, prior to disclosure by the Disclosing Party; (c) is subsequently received by the Receiving Party or its Affiliates, without confidentiality restriction, from a Third Party or a (sub)licensee who is not bound by any obligation of confidentiality with respect to said information; (d) is generally made available to Third Parties by the Disclosing Party without restriction on disclosure; or (e) is independently developed by or for the Receiving Party or its Affiliates without reference to the Disclosing Party's Confidential Information or, as to Novartis as the Receiving Party, the Restricted Information.

8.5 Confidentiality of Terms of Agreement. The parties both agree that the terms of this Agreement are the Confidential Information of each party, and they each shall keep such terms confidential and not disclose this Agreement, except as otherwise provided herein. Notwithstanding the foregoing, the parties acknowledge and agree that either party may be required by Applicable Law (including by any court or other governmental body) to disclose this Agreement, or the terms hereof, in whole or in part, and in such case, such party shall notify the other party in writing and shall provide the other party with at least seven (7) business days to request redactions thereof prior to making such filing or disclosure. The Disclosing Party shall seek confidential treatment of any such proposed redactions timely made and use reasonable efforts to procure confidential treatment of such proposed redactions pursuant to the Securities Act of 1933 or the Securities Exchange Act of 1934, in each case as amended, and the rules, regulations and guidelines promulgated thereunder, or any other Applicable Law or the rules, regulations or guidelines promulgated thereunder, *but provided* that neither party shall unreasonably withhold its consent in a manner that would prevent the other party from making such public disclosures as it, on advice of counsel, must make to comply with Applicable Law. In addition, each party shall be entitled to disclose the terms of this Agreement to under obligations of confidentiality comparable to those set forth in this Agreement (a) to legal counsel, accountants and other professional advisors; (b) banks, investors and other financing sources; or (c) to Third Parties with whom a party is engaged in an actual or prospective merger or acquisition or similar transaction. Each party shall also be entitled to disclose such portions of this agreements as are necessary (i) to enforce this Agreement or its rights under this Agreement; or (ii) during the course of litigation so long as the disclosure of such terms and conditions are restricted in the same manner as is the confidential information of other litigating parties and so long as (1) the restrictions are embodied in a court-entered protective order limiting disclosure to outside counsel and (2) the disclosing party informs the other party in writing at least ten (10)

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business days in advance of the disclosure and discusses the nature and contents of the disclosure, in good faith, with the other party.

8.6 Use of Name. Neither party shall disclose or otherwise use the name, insignia, symbol, trademark, trade name or logotype of the other party or its Affiliates in any publication, press release, promotional material or other form of publicity without the prior written consent of the other party (which shall not be unreasonably withheld or delayed). Notwithstanding the foregoing, Novartis and its Affiliates and (sub)licensees shall have the right to use in a reasonable manner the name of Fluidigm and its Affiliates to the extent that Novartis is required by Applicable Law to identify Fluidigm or its applicable Affiliate as having developed or manufactured Novartis Licensed Products sold in the Primary Field or Secondary Field, in the Territory.

8.7 Press Releases. Except pursuant to Section 8.5, no public announcement or press release concerning this Agreement, its subject matter or the transactions described herein, negotiations and discussions thereof, or any other agreement between the parties, whether contemplated, negotiated or executed, shall be made, either directly or indirectly, by either party or their respective Affiliates. Notwithstanding the foregoing, Fluidigm shall be entitled to disclose to Third Parties that "Fluidigm has entered into an exclusive relationship with a multinational diagnostic company for development of certain tests in prenatal and women's health." In addition, Fluidigm shall be entitled to disclose the definitions of the Primary Field and Secondary Field to the extent necessary to fulfill its obligations under this Agreement (*e.g.*, in restrictive portions of its sales or license agreements with Third Parties).

8.8 Publications and Presentations. Fluidigm shall not make or otherwise disclose any Publication (as defined below) without Novartis's prior written approval, other than Publications that have been submitted for publication prior to the Effective Date and disclosed to Novartis prior to the Effective Date. "**Publication**" shall mean any publication, presentation or disclosure to a Third Party that contains material (including abstracts, scientific posters and presentations) related to any Collaboration Activity or any research and development related to the Primary Field or Secondary Field conducted by Fluidigm prior to the Effective Date.

ARTICLE IX
Term and Termination

9.1 Term. This Agreement shall commence upon the Effective Date and shall continue until the earlier of (a) termination in accordance with this ARTICLE IX, (b) expiration of the Option Term if Novartis has not exercised the License Option pursuant to Section 5.2, or (c) the Completion of Phase 3, unless extended by mutual written agreement by the parties (the "**Term**").

9.2 Termination of this Agreement for Material Breach. Any material breach by a party of any of its material obligations contained herein, including a party's failure to comply with its diligence obligations under this Agreement, shall entitle the party not in breach to give to the party in breach notice specifying the nature of the breach, requiring the breaching

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party to cure such breach, and stating its intention to terminate if such breach is not cured. If such breach is not cured within thirty (30) days (the "**Cure Period**") after the receipt of such notice (or, if such breach cannot be cured within such thirty (30) day period, if the party in breach does not commence actions to cure such breach within the Cure Period and thereafter diligently continue such actions), the party not in breach shall be entitled, without prejudice to any of its other rights conferred on it by this Agreement, and in addition to any other remedies available to it by law or in equity, to terminate this Agreement.

9.3 Termination Upon Insolvency. Either party may terminate this Agreement if, at any time, the other party shall file in any court or agency pursuant to any statute or regulation of any state, country or jurisdiction, a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of that party or of its assets, or if the other party proposes a written agreement of composition or extension of its debts, or if the other party shall be served with an involuntary petition against it, filed in any insolvency proceeding, and such petition shall not be dismissed within sixty (60) days after the filing thereof, or if the other party shall propose or be a party to any dissolution or liquidation, or if the other party shall make an assignment for the benefit of its creditors.

9.4 Additional Termination Rights. The parties shall have the following additional termination rights: (a) Novartis may, in its sole discretion, terminate this Agreement upon thirty (30) days' prior written notice to Fluidigm; (b) if a Third Party institutes a law suit alleging that any Collaboration Activity infringes or misappropriates any Third Party intellectual property, Novartis may, upon written notice to Fluidigm, terminate this Agreement immediately upon notice to Fluidigm; (c) Novartis may terminate this Agreement upon written notice delivered to Fluidigm in the case of a Change of Control, which notice shall be provided within ninety (90) days of such Change of Control unless any Acquiring Entity(ies) is a Primary Field Competitor; and (d) upon thirty (30) days' prior written notice to Novartis, Fluidigm may terminate this Agreement if Novartis does not provide its consent to progress to the next Phase within ninety (90) days after the later of the Final Report Due Date for the prior Phase and the date on which Fluidigm has completed all of the Fluidigm milestones for the prior Phase (as described in Section 3.2 or the Collaboration Plan) and delivered all deliverables, including its Final Report, for that Phase to Novartis; *provided, however,* that Fluidigm shall first discuss the matter with Novartis in good faith.

9.5 Consequences of Expiration or Termination.

(a) Wind-Down. If this Agreement is terminated (or if a notice of termination has been provided) for any reason, the parties shall immediately commence a wind-down of the Collaboration Activities. (For clarity, any such wind-down activities shall constitute Collaboration Activities for purposes of the intellectual property provisions and indemnification provisions of this Agreement, notwithstanding the termination of this Agreement). Except as required to perform such wind-down activities, the licenses granted in Section 5.1(a) shall terminate.

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(b) Material Breach by Fluidigm. If Novartis terminates this Agreement pursuant to Section 9.2 following execution of the License Agreement, Fluidigm shall not directly or with a partner, develop, make, use, sell, or otherwise commercialize or license any Third Party any rights with respect to a Test in the Primary Field for a period of fifteen (15) months. If Novartis terminates this Agreement pursuant to Section 9.2 at any time, the licenses granted to Fluidigm in Section 5.1(b) shall terminate. Upon any other termination or expiration of this Agreement, the licenses granted to Fluidigm in Section 5.1(b) shall survive.

(c) Material Breach by Novartis. If Fluidigm terminates this Agreement pursuant to Section 9.2 following execution of the License Agreement, then all rights of Novartis under the License Agreement, and under the Supply Agreement if and when entered into, shall become non-exclusive.

(d) Post-Termination Commercialization.

(i) (A) If either Party terminates this Agreement prior to the exercise of the License Option, other than pursuant to Section 9.4(c), Fluidigm shall have the right to pursue other partners or commercialize a Test in the Primary Field or Secondary Field on its own, subject to the royalties payable by Fluidigm to Novartis as provided herein. In addition, unless the termination is by Novartis pursuant to Section 9.2, the license granted to Fluidigm in Section 5.1(b) shall remain in effect and shall extend to all fields solely for research purposes subject to the restrictions with respect thereto in Section 7.1. (The foregoing shall not be construed to grant Fluidigm any license rights under any intellectual property of Novartis, except as set forth in Section 5.1(b).)

(B) If Novartis terminates this Agreement pursuant to Section 9.4(c) prior to exercise of the License Option, but Novartis does not exercise the License Option pursuant to Section 9.5(d)(iii) or (iv), then Fluidigm shall have the right to pursue other partners or commercialize a Test in the Primary Field or Secondary Field on its own, subject to the royalties payable by Fluidigm to Novartis as provided herein. In addition, if Novartis terminates this Agreement pursuant to Section 9.4(c) prior to exercise of the License Option, but Novartis does not exercise the License Option pursuant to Section 9.5(d)(iii) or (iv), unless the termination is by Novartis pursuant to Section 9.4(c) due to a Change of Control in which any Acquiring Entity is a Primary Field Competitor, the license granted to Fluidigm in Section 5.1(b) shall remain in effect and shall extend to all fields solely for research purposes subject to the restrictions with respect thereto in Section 7.1. (The foregoing shall not be construed to grant Fluidigm any license rights under any intellectual property of Novartis, except as set forth in Section 5.1(b).)

(C) If Novartis terminates this Agreement pursuant to Section 9.4(c), but Novartis does exercise the License Option pursuant to Section 9.5(d)(iii) or (iv), then unless the termination is by Novartis pursuant to Section 9.4(c) due to a Change of Control in which any Acquiring Entity is a Primary Field Competitor, the license granted to Fluidigm in Section 5.1(b) shall remain in effect. (The foregoing shall not be construed to grant

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Fluidigm any license rights under any intellectual property of Novartis, except as set forth in Section 5.1(b).)

(ii) If either Party terminates this Agreement after exercise of the License Option, other than (A) pursuant to Section 9.4(c) where any Acquiring Entity is a Primary Field Competitor or (B) by Novartis pursuant to Section 9.2, the license granted to Fluidigm in Section 5.1(b) shall remain in effect and, in addition, shall extend to the Primary Field (and the Secondary Field, if such field is repurchased by Fluidigm pursuant to the License Agreement or if the licenses to Novartis under the License Agreement in the Secondary Field are terminated) for research purposes if and only when Fluidigm exercises its rights under the License Agreement to repurchase Novartis' license in the Primary Field (and the Secondary Field, if applicable) (as described further therein). For clarity, the licenses granted to Novartis under the License Agreement remain in effect unless and until such repurchase occurs.

(iii) If Novartis terminates this Agreement pursuant to Section 9.4(c) due to a Change of Control in which no Acquiring Entity is a Primary Field Competitor, the following shall apply:

(A) If Novartis (or its Affiliates or (sub)licensees) are commercializing one or more Novartis Licensed Products as of the Change of Control, then the License Agreement and the Supply Agreement shall remain in effect and, if either such agreement is not in effect at the time of such Change of Control, Novartis shall have the right, on written notice to Fluidigm together with Novartis' notice of such termination of this Agreement pursuant to Section 9.4(c), to have the parties enter into such agreement as described in Section 5.2 or Section 4.3, as applicable, provided that under no circumstance shall the Option Term extend past ninety (90) days after the Completion of Phase 1.

(B) If the foregoing clause (A) does not apply and Novartis (or its Affiliates or (sub)licensees) desires to continue the development of one or more Novartis Licensed Products, then:

(x) the License Agreement shall remain in effect or, if not executed, Novartis shall have the right, on written notice to Fluidigm together with Novartis' notice of such termination of this Agreement pursuant to Section 9.4(c), to have the parties enter into the License Agreement as described in Section 5.2 (*provided* that under no circumstance shall the Option Term extend past ninety (90) days after the Completion of Phase 1), and the licenses granted therein shall be extended to the Exploitation of all products in the Primary Field and the Secondary Field, whether or not they use the Fluidigm Chips or Fluidigm Instruments; *provided, however,* that Novartis shall have no right to manufacture or have manufactured any Fluidigm Chips or Fluidigm Instruments or any other products under such agreement other than pursuant to clause (y) of this Section 9.5(d)(iii)(B), and if Novartis elects to exercise such license using chips or instruments other than Fluidigm Chips or Fluidigm Instruments, then Novartis and Fluidigm shall negotiate a reasonable non-refundable royalty rate that would apply to such exercise,

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(y) at the election of Novartis on written notice to Fluidigm together with Novartis' notice of such termination of this Agreement pursuant to Section 9.4(c), either (1) the Supply Agreement shall remain in effect or, if not executed, Novartis shall have the right to have the parties enter into the Supply Agreement as described in Section 4.3, *provided* that under no circumstance shall the Option Term extend past ninety (90) days after the Completion of Phase 1, or (2) Novartis may obtain from Fluidigm a license under any intellectual property rights then Controlled by Fluidigm or any of its Affiliates, which rights are necessary or reasonably useful to manufacture the Novartis Licensed Products (*provided* that such intellectual property rights that are Acquisition IP shall be limited to Acquisition IP that is necessary to so use such intellectual property rights Controlled by Fluidigm (or any of its then Affiliates) immediately preceding the Change of Control) ("**Manufacturing License**"), in which case the parties shall negotiate reasonable compensation to Fluidigm for such license ("**Manufacturing Fee**"), it being understood and agreed that no license is granted to manufacture any Fluidigm chip other than the Fluidigm Chips or to manufacture any Fluidigm instrument other than the Fluidigm Instruments, and

(z) at the election of Novartis on written notice to Fluidigm together with Novartis' notice of such termination of this Agreement pursuant to Section 9.4(c), Fluidigm shall provide technology transfer to Novartis or its designee to enable Novartis to continue development and, if Novartis has exercised its option for a manufacturing option under clause (y)(2) of this Section 9.5(d)(iii)(B), manufacture, of the Novartis Licensed Products then in development, in which case Fluidigm shall be compensated by Novartis for such technology transfer at cost. If Fluidigm fails to do so within a reasonable time, Novartis may exercise its escrow rights under the License Agreement as if it were a Failure to Supply.

If the parties cannot agree on a reasonably royalty or compensation for a Manufacturing License pursuant to this Section 9.5(d)(iii) within ninety (90) days after termination of this Agreement pursuant to Section 9.4(c), the dispute resolution provisions in Section 12.6 shall apply and the arbitrator shall make its determination after affording each party an opportunity to submit a proposal and thereafter selecting one of the proposals of the parties or a non-refundable royalty rate or compensation, as applicable, that falls within the range established by the parties' proposals. During the pendency of any negotiation or arbitration of such terms, Novartis shall be deemed licensed to perform the applicable activities and following resolution thereof shall pay any compensation due to Fluidigm based on the established royalty or other compensation, as applicable.

(iv) If Novartis terminates this Agreement pursuant to Section 9.4(c) due to a Change of Control in which any Acquiring Entity is a Primary Field Competitor, Section 9.5(d)(iii) shall apply, but with the following modifications: (A) no additional amounts shall be due to Fluidigm under Section 4.1 or Section 4.2 of the License Agreement, (B) any technology transfer described in Section 9.5(d)(iii) shall be at the sole expense of Fluidigm, and (C) Novartis may elect to secure a Manufacturing License whether or not any Novartis Licensed Product is then being commercialized; *provided*, *however*, that Novartis may deduct from the Manufacturing Fee that would apply as described in Section 9.5(d) the amounts paid by Novartis under Section 6.1 of this Agreement.

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(e) Royalties.

(i) Royalty for Using Collaboration Chip Developments. If this Agreement expires or is terminated by either party, other than a termination by Fluidigm, pursuant to Section 9.2, based on non-payment by Novartis, Fluidigm shall pay to Novartis, based on worldwide aggregate Net Sales (whether made by Fluidigm, its Affiliates, (sub)licensees (or a Third Party under agreement with Fluidigm, including a Third Party commercialization partner or customer)) of Results using a Fluidigm Royalty-Bearing Product the sale of which is covered by a Valid Claim of the Collaboration Patents in the country of sale, non-refundable royalties in the amount of [***] of the Net Sales of such Results.

(ii) Royalty for the Primary Field. If this Agreement expires or is terminated by either party, Fluidigm shall pay to Novartis, (A) in the case of the sale of IVD [***] in the Primary Field by Fluidigm, its Affiliates or (sub)licensees, based on worldwide aggregate Net Sales of any such IVD [***], if the sale of such IVD [***] are covered by a Valid Claim of the Collaboration Patents (other than improvements to inventions claimed in the Fluidigm Assay Patent Claims) in the country of sale, royalties in the amount of [***] of the Net Sales of such IVD [***], or (B) in the case of the generation of Results in the Primary Field by Fluidigm, its Affiliates or (sub)licensees or any Third Party under agreement with Fluidigm, including any Third Party commercialization partners or customers, other than such generation conducted using an IVD [***], based on worldwide aggregate Net Sales of any such Results where (x) the generation of such Results is covered by a Valid Claim of the Collaboration Patents, other than the Fluidigm solely-owned Collaboration Patents, in the country in which the Results are generated, or (y) such Results are generated using a Fluidigm Product, the sale of which is covered by a Valid Claim of such Collaboration Patents in the country of sale, non-refundable royalties in the amount of [***] of such Net Sales.

For clarity, royalties may be payable under both clause (i) and clause (ii) of this Section 9.5(e), if applicable (but not under both clauses (A) and (B) of paragraph (ii)).

The parties acknowledge that clauses (i) and (ii) of this Section 9.5(e) shall not apply to Fluidigm commercial activities relating to its products sold for research use only, it being understood and agreed that research use does not include use of products to provide a result that will be used in the medical management of a patient or provide clinical results for a fee.

(iii) Additional Royalty Provisions. The payments, statements, record retention and audit provisions related to the royalties in Sections 6.3 to 6.6 of this Agreement shall apply to this Section 9.5(e) as if they were royalties due on Results under ARTICLE VI.

(f) Transfer of Materials. Each party shall, and shall cause its Affiliates to, cooperate with the other party in transferring to the other party, within sixty (60) days after the termination or expiration of this Agreement, all Confidential Information of the other party in the Territory, except that (i) each party may retain one (1) copy of such data, files or materials for its records and for the purpose of performing any obligations under this Agreement that may

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survive such termination or expiration and (ii) Novartis may retain the Confidential Information of Fluidigm as reasonably necessary to exercise its rights under any Ancillary Agreement.

9.6 Remedies; Accrued Rights; and Surviving Obligations. Except as otherwise expressly provided herein, termination of this Agreement in accordance with the provisions hereof shall not limit remedies which may otherwise be available in law or equity. Termination or expiration of this Agreement for any reason shall be without prejudice to any rights that shall have accrued to the benefit of a party prior to such termination or expiration (including accrued payments). Such termination or expiration shall not relieve a party from obligations that are expressly indicated to survive the termination or expiration of this Agreement pursuant to this Section 9.6. Without limiting the foregoing, Sections 3.6, (if the Supply Agreement is in effect) 4.2, (if the License Agreement is in effect but the Supply Agreement has not been executed or as provided in Section 9.5(d)(iii) or (iv)) 4.3, (if and to the extent provided in Section 9.5) 5.1(b), (solely as described in Section 9.5(d)(iii) or (iv)) 5.2, (if the License Agreement has been executed) 5.3, 5.6, 6.2 through 6.6, 8.2 through 8.7, (if the License Agreement has been executed) 8.8, 9.5 and 9.6 and ARTICLE VII, ARTICLE X, and ARTICLE XII of this Agreement shall survive the expiration or termination of this Agreement for any reason.

ARTICLE X
Indemnity; Limitation of Liability

10.1 Indemnification of Fluidigm. In addition to any other remedy available to Fluidigm, Novartis shall indemnify, defend and hold harmless Fluidigm, its Affiliates and its and their respective directors, officers and employees (each a "**Fluidigm Party**") in full and on demand, from and against any and all direct or indirect liabilities or litigation expenses, including interest, penalties and reasonable lawyers' fees (as set forth in Section 10.4(b)) and disbursements (collectively, "**Losses**") incurred by them to the extent resulting from any claims or allegations made or suits, actions or proceedings brought by a Third Party (collectively, "**Third Party Claims**") against any Fluidigm Party that result from:

(a) any intentional misconduct or negligence on the part of Novartis or any of its Affiliates in performing any activity contemplated by this Agreement, or the breach of any provision of this Agreement by Novartis;

(b) any infringement claims by a Third Party resulting from any Excluded Cause; or

(c) the incorporation, at Novartis' request (and in the manner specified by Novartis), of Additional Excluded Items in Fluidigm Products;

except, in the cases of clause (a) and clause (c), (i) for any Losses for which Fluidigm has an obligation to indemnify any Novartis Party pursuant to Section 10.2, as to which Loss each party shall indemnify the other to the extent of their respective liability for such Loss, (ii) to the extent such Losses arise or result from the intentional misconduct or negligence of a Fluidigm Party, or the breach of any provision of this Agreement or any Ancillary Agreement by Fluidigm, and

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(iii) to the extent Fluidigm has an obligation to indemnify a Novartis Party for any such Losses pursuant to an Ancillary Agreement.

10.2 Indemnification of Novartis. In addition to any other remedy available to Novartis, Fluidigm shall indemnify, defend and hold harmless Novartis and its Affiliates its and their respective directors, officers and employees (each a "**Novartis Party**") in full and on demand, from and against any and all Losses incurred by them to the extent resulting from (or in the case of clause (b), arise out of or in connection with) any Third Party Claims against any Novartis Party that result from (or in the case of clause (b), arise out of):

(a) (i) (x) any intentional misconduct or negligence on the part of Fluidigm or its Affiliates in performing any activity contemplated by this Agreement, or the breach of any provision of this Agreement by Fluidigm or (y) the supply of defective or non-conforming Fluidigm Chips or Fluidigm Instruments under this Agreement (only to the extent such Third Party Claim is a products liability claim or a claim for personal injury or death); or (ii) the Exploitation of any Fluidigm Instrument, Fluidigm Chip, or the Fluidigm System by or on behalf of Fluidigm or any of its Affiliates, which claim(s) is based on acts or omissions occurring or failing to occur, in whole or in part, prior to the Effective Date, including any violation of Applicable Law in connection with such Exploitation and any Third Party Claims that allege that the claimant has suffered personal injury or death as a result of the use of any of the foregoing sold or distributed by or on behalf of Fluidigm or any of its Affiliates prior to the Effective Date, except in each case ((i) and (ii)), (A) for any Losses for which Novartis has an obligation to indemnify any Fluidigm Party pursuant to Section 10.1, as to which Loss each party shall indemnify the other to the extent of their respective liability for such Loss, (B) to the extent such Losses arise or result from the intentional misconduct or negligence of a Novartis Party, or the breach of any provision of this Agreement or any Ancillary Agreement by Novartis, and (C) to the extent Novartis has an obligation to indemnify a Fluidigm Party for any such Losses pursuant to an Ancillary Agreement;

(b) the Exploitation of any Fluidigm Instrument, Fluidigm Chip, or Fluidigm Royalty-Bearing Product by or on behalf of Fluidigm or its Affiliates, licensees, or (sub)licensees anywhere in the world, including claims that arise from any violation of Applicable Law in connection with such Exploitation or allege that the claimant has suffered personal injury or death as a result of the use of any of the foregoing sold or distributed by or on behalf of Fluidigm or its Affiliates or (sub)licensees (in each case excluding any such sale, distribution, or other Exploitation by Novartis or any of its Affiliates or (sub)licensees hereunder or under any Ancillary Agreements); or

(c) any infringement claims by a Third Party resulting from Exploitation under this Agreement of the Fluidigm Technology in general, i.e., the infringement claim would have occurred regardless of specific assay or Tests (where Exploitation of the Fluidigm Technology in general includes the performance of digital PCR using Fluidigm Products), *provided* that Fluidigm shall have no liability under this Section 10.2(c) with respect to any claim resulting from (i) modification of Fluidigm Technology by Novartis or any of its Affiliates or sublicensees unless Fluidigm has been notified of such modification in writing and fails to

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reasonably object to such modification by written notice to Novartis within sixty (60) days following such notification; (ii) the combination by Novartis, its Affiliates, its sublicensees and their respective customers of Fluidigm Technology with any product or item not provided by or on behalf of Fluidigm or any of its Affiliates unless Fluidigm has been notified of such combination in writing and fails to reasonably object to such combination by written notice to Novartis within sixty (60) days following such notification; (iii) Fluidigm's compliance with Novartis' specifications or designs if, prior to such compliance, Fluidigm reasonably objects to such compliance by written notice to Novartis; or (iv) any name or mark included on a Novartis Licensed Product not applied by Fluidigm (or applied at Novartis' request) (collectively (i)-(iv), "**Excluded Causes**").

In addition, Fluidigm shall have no liability or obligation under this Section 10.2 with respect to items incorporated into Fluidigm Products at Novartis' request (and in the manner specified by Novartis, if Novartis has specified a manner in writing), including reagents and mastermixes if, prior to such incorporation, Fluidigm reasonably objects to such incorporation by written notice to Novartis within thirty (30) days of such request ("**Additional Excluded Items**").

10.3 Notice of Claim. An Indemnified Party shall give the Indemnifying Party prompt written notice of any Loss or discovery of fact upon which such Indemnified Party intends to base a request for indemnification under Section 10.1 or 10.2. The Indemnifying Party shall not be liable for any Loss that results from any delay in providing such notice. Such notice shall contain a description of the claim and the nature and amount of the Loss claimed (to the extent that the nature and amount of such Loss is known at such time). The Indemnified Party shall furnish promptly to the Indemnifying Party copies of all papers and official documents received in respect of any such Loss.

10.4 Indemnification Procedures. The obligations of an Indemnifying Party under this ARTICLE X shall be governed by and contingent upon the following:

(a) Assumption of Defense. At its option, the Indemnifying Party may assume the defense of any Third Party Claim by giving written notice to the Indemnified Party within fourteen (14) days after receipt of notice pursuant to Section 10.3. Such assumption shall not be construed as an acknowledgement of liability or a waiver of any defenses (and the Indemnifying Party shall be reimbursed by the Indemnified Party in the case in which the Indemnifying Party is not liable under this ARTICLE X).

(b) Control of Defense. Upon the assumption of the defense of a Third Party Claim by the Indemnifying Party, such party may appoint lead counsel in the defense of the Third Party Claim, which shall be reasonably acceptable to the Indemnified Party, and except as expressly provided in this Section 10.4(b), the Indemnifying Party shall not be liable to the Indemnified Party for any legal expenses subsequently incurred by such Indemnified Party in connection with the analysis, defense or settlement of the Third Party Claim. The Indemnified Party shall be entitled to participate in, but not control, the defense of a Third Party Claim and to retain counsel of its choice for such purpose at its expense unless the interests of the Indemnified Party and the Indemnifying Party with respect to such Third Party Claim are sufficiently adverse

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to prohibit the representation by the same counsel of both parties under Applicable Law, ethical rules or equitable principles, in which latter case such retention shall be at the expense of the Indemnifying Party.

(c) Settlement. With respect to all Losses resulting from or arising out of or in connection with Third Party Claims, where the Indemnifying Party has assumed the defense of a Third Party Claim in accordance with Section 10.4(a), (i) the Indemnifying Party shall have authority to consent to the entry of any judgment, enter into any settlement or otherwise dispose of such Losses, *provided* that it obtains the prior written consent of the Indemnified Party, which consent shall not be unreasonably withheld or delayed and (ii) no Indemnified Party shall admit any liability with respect to, or settle, compromise or discharge, any such Third Party Claim without the prior written consent of the Indemnifying Party, which consent shall not be unreasonably withheld or delayed.

(d) Cooperation. If the Indemnifying Party chooses to defend or prosecute any Third Party Claim, the Indemnified Party that is a party to this Agreement shall, and shall cause each of its Affiliates and each of their respective directors, officers, employees and agents to reasonably cooperate in the defense or prosecution thereof and shall furnish such records, information and testimony, provide such witnesses and attend such conferences, discovery proceedings, hearings, trials and appeals as may be reasonably requested in connection therewith. Such cooperation shall include access during normal business hours by the Indemnifying Party to, and reasonable retention by the Indemnified Party of, records and information that are reasonably relevant to such Third Party Claim, and making the Indemnified Party, its Affiliates and its and their respective directors, officers, employees and agents available on a mutually convenient basis to provide additional information and explanation of any records or information provided, and the Indemnifying Party shall reimburse the Indemnified Party for all of its related reasonable out-of-pocket expenses.

(e) Expenses. Any reasonable and verifiable costs and expenses incurred by the Indemnified Party in connection with any claim and reimbursable as set forth above in this ARTICLE X shall be reimbursed on a calendar quarter basis by the Indemnifying Party, without prejudice to the Indemnifying Party's right to contest the Indemnified Party's right to indemnification and subject to refund in the event the Indemnifying Party is ultimately held not to be obligated to indemnify the Indemnified Party.

10.5 Limitation on Damages; Indemnity Cap.

(a) General Limitations. EXCEPT IN CIRCUMSTANCES OF RECKLESSNESS OR INTENTIONAL MISCONDUCT BY A PARTY OR ITS AFFILIATES, OR A PARTY'S INDEMNIFICATION OBLIGATIONS WITH RESPECT TO THIRD PARTY CLAIMS UNDER SECTION 10.1 OR 10.2, NEITHER PARTY OR ANY OF ITS AFFILIATES SHALL BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR LOST PROFITS, UNEARNED MILESTONES OR ROYALTIES, WHETHER IN CONTRACT, WARRANTY, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE, ARISING OUT OF OR IN CONNECTION WITH THIS

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AGREEMENT, INCLUDING (a) THE COLLABORATION ACTIVITIES, OR (b) ANY BREACH OF OR FAILURE TO PERFORM ANY OF THE PROVISIONS OF THIS AGREEMENT. IN NO EVENT SHALL FLUIDIGM OR ANY OF ITS AFFILIATES BE LIABLE FOR COSTS OF SUBSTITUTE PRODUCTS, SERVICES, OR TECHNOLOGY.

(b) Indemnity Caps. NOVARTIS' MAXIMUM AGGREGATE LIABILITY UNDER SECTION 10.1 AND FLUIDIGM'S MAXIMUM AGGREGATE LIABILITY UNDER SECTION 10.2(a)(i) AND (c) (COLLECTIVELY), RESPECTIVELY, SHALL EQUAL [***] (THE "**CAP**"); PROVIDED, HOWEVER, THAT NO LOSSES RESULTING FROM SUCH PARTY'S RECKLESSNESS OR INTENTIONAL MISCONDUCT SHALL BE COVERED BY OR COUNTED TOWARDS SUCH PARTY'S CAP. THESE LIMITATIONS, HOWEVER, SHALL NOT APPLY TO LIABILITY FOR PERSONAL INJURY, DEATH, OR PHYSICAL DAMAGE TO TANGIBLE PROPERTY.

10.6 Insurance. During the term of this Agreement and any other period during which Exploitation of Fluidigm Royalty-Bearing Products or Results occurs and triggers a royalty hereunder, Fluidigm shall secure and maintain in full force and effect insurance coverage covering the risks associated with the business of Fluidigm in the amounts typically carried by a business similarly situated to Fluidigm. If requested by Novartis, Fluidigm shall provide to Novartis certificates of insurance evidencing compliance with the above requirements.

ARTICLE XI
Representations, Warranties and Covenants

11.1 Representations, Warranties and Covenants. Each party hereby represents, warrants and covenants to the other party as of the Effective Date as follows:

(a) Such party (i) has the power and authority and the legal right to enter into this Agreement and perform its obligations hereunder, and (ii) has taken all necessary action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder. This Agreement has been duly executed and delivered on behalf of such party and constitutes a legal, valid and binding obligation of such party and is enforceable against it in accordance with its terms subject to the effects of bankruptcy, insolvency or other laws of general application affecting the enforcement of creditor rights and judicial principles affecting the availability of specific performance and general principles of equity, whether enforceability is considered a proceeding at law or equity.

(b) Except as otherwise disclosed to the other party in the Side Letter, to such party's Knowledge, there is no pending or threatened litigation (and it has not received any communication) that alleges that such party's activities related to this Agreement have violated, or that by conducting the activities as contemplated herein such party would violate, any of the intellectual property rights of any Third Party.

(c) All necessary consents, approvals and authorizations of all regulatory and governmental authorities and other Persons required to be obtained by such party

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in connection with the execution and delivery of this Agreement and the performance of its obligations hereunder have been obtained.

(d) The execution and delivery of this Agreement and the performance of such party's obligations hereunder (i) do not conflict with or violate any requirement of applicable law or regulation or any provision of the articles of incorporation, bylaws, limited partnership agreement or any similar instrument of such party, as applicable, in any material way, and (ii) do not conflict with, violate, or breach or constitute a breach or require any consent under, any contractual obligation or court or administrative order by which such party is bound.

11.2 Additional Representations, Warranties and Covenants of Fluidigm. Fluidigm represents, warrants and covenants to Novartis that:

(a) To Fluidigm's Knowledge as of the Effective Date, the Core Fluidigm Know-How and any other data, clinical studies and other Information and Inventions in its or its Affiliates' possession or Control in each case relating to the Core Fluidigm Technology that Fluidigm has made available to Novartis is not materially incomplete or inaccurate.

(b) During the term of this Agreement, Fluidigm will make available, to Novartis, Core Fluidigm Know-How and any other data, clinical studies and other Information and Inventions in its or its Affiliates' possession or Control relating to the Core Fluidigm Technology as set forth in Section 3.7(b) and, to Fluidigm's Knowledge, as of the time of delivery, all such Core Fluidigm Know-How and other Information and Inventions that Fluidigm delivers pursuant to Section 3.7(b) will not be materially incomplete or inaccurate.

(c) To Fluidigm's Knowledge as of the Effective Date, Fluidigm has disclosed all material adverse information with respect to the Core Fluidigm Technology, which information is Known to Fluidigm as of the Effective Date. For the purpose of this Section 11.2(c), "material adverse information" [***].

(d) Fluidigm is the sole and exclusive owner of all right, title and interest in and to the Patents listed as "Owned" on Schedule 11.2(d) (the "**Owned Core Fluidigm Patents**") and, except as provided in Schedule 11.2(d), as of the Effective Date such rights are not subject to any encumbrance, lien or claim of ownership by any Third Party. Fluidigm is the licensee of and Controls rights, title and interest in and to the Patents listed on Schedule 11.2(d) as "Licensed" (the "**In-Licensed Core Fluidigm Patents**"), in each case on either an exclusive or non-exclusive basis, as indicated in such schedule, and, except as provided in Schedule 11.2(d), as of the Effective Date such rights are not subject to any encumbrance, lien or claim of ownership by any Third Party. True, complete and correct copies of all license agreements in which Fluidigm receives any right or license to any In-Licensed Core Fluidigm Patents (the "**Core Fluidigm In-License Agreements**"), as amended to the date hereof, have been provided to Novartis, and a list of such agreements is set forth in Schedule 11.2(d). Upon request of Novartis during the Option Term, Fluidigm shall use its commercially reasonable efforts (i) to obtain from its Third Party licensors the right for Novartis (if it were to enter into the License Agreement) to further sublicense any rights that are sublicensed to Novartis under by

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Fluidigm under the License Agreement and (ii) to modify the diligence requirements under the Core Fluidigm In-License Agreements so that they are consistent with the terms of the License Agreement.

(e) During the term of this Agreement, Fluidigm shall not encumber or diminish the rights granted to Novartis hereunder with respect to the Fluidigm Patents, including by not (i) committing any acts or permitting the occurrence of any omissions that would cause the material breach or termination of any Core Fluidigm In-License Agreement, or (ii) amending or otherwise modifying, or permitting to be amended or modified, any Core Fluidigm In-License Agreement, in the case of clause (ii) in a manner that is inconsistent with the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement (including its option rights set forth in this Agreement). Fluidigm shall promptly provide Novartis with notice of any alleged, threatened, or actual breach of any Core Fluidigm In-License Agreement of which Fluidigm is aware and that is likely to have a material adverse effect on the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement. As of the Effective Date, none of Fluidigm, its Affiliates and, to Fluidigm's Knowledge, any Third Party is in breach of any Core Fluidigm In-License Agreement that is likely to have a material adverse effect on the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement (including its option rights set forth in this Agreement).

(f) To Fluidigm's knowledge as of the Effective Date except as disclosed in the Side Letter, (i) the Core Fluidigm Patents are subsisting and are not invalid or unenforceable, in whole or in part, (ii) the conception, development and reduction to practice of the Core Fluidigm Patents and Core Fluidigm Know-How existing as of the Effective Date have not constituted or involved the misappropriation of trade secrets or other rights or property of any Third Party, (iii) there are no claims, judgments or settlements against or amounts with respect thereto owed by Fluidigm or any of its Affiliates relating to the Core Fluidigm Patents or Core Fluidigm Know-How, (iv) no claim or litigation has been brought or threatened against Fluidigm or any of its Affiliates (or to Fluidigm's Knowledge) by any Person alleging, that any Core Fluidigm Patents or Core Fluidigm Know-How or the disclosing, copying, making, assigning, licensing or Exploiting of any Core Fluidigm Patents or Core Fluidigm Know-How, or products and services embodying the Core Fluidigm Patents or Core Fluidigm Know-How, including the Exploitation of the Novartis Licensed Products using the Core Fluidigm Technology, violates, infringes or otherwise conflicts or interferes with any intellectual property or proprietary right of any Third Party, and (v) Fluidigm has not received any written notice alleging that any Third Party rights would be infringed or misappropriated by Exploiting the Core Fluidigm Technology or otherwise suggesting that Fluidigm obtain a license in order to Exploit the Core Fluidigm Technology, Core Fluidigm Patents or Core Fluidigm Know-How.

(g) Except for products shipped by or on behalf of Fluidigm or its Affiliates to Third Parties prior to the Effective Date for research-use-only (and not clinical use) that are not subject to restrictions with respect to the Primary Field or Secondary Field, Fluidigm and its Affiliates have not, directly or indirectly, expressly or by implication, by action or omission or otherwise (i) assigned, transferred, conveyed or otherwise encumbered any right, title or interest in or to any Core Fluidigm Patents or Core Fluidigm Know-How, (ii) granted any

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license or other right, title or interest in or to any Core Fluidigm Patents or Core Fluidigm Know-How in any manner, or (iii) agreed to or is otherwise bound by any covenant not to sue for any infringement, misuse or otherwise with respect to any Core Fluidigm Patents or Core Fluidigm Know-How, in each case ((i), (ii), and (iii)) that is inconsistent with the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement (including the exclusive options set forth herein).

(h) During this Agreement, Fluidigm and its Affiliates shall not, directly or indirectly, expressly or by implication, by action or omission or otherwise (i) assign, transfer, convey or otherwise encumber any right, title or interest in or to any Core Fluidigm Patents or Core Fluidigm Know-How, (ii) grant any license or other right, title or interest in or to any Core Fluidigm Patents or Core Fluidigm Know-How in any manner, or (iii) agree to or become otherwise bound by any covenant not to sue for any infringement, misuse or otherwise with respect to any Core Fluidigm Patents or Core Fluidigm Know-How, in each case ((i), (ii), and (iii)) in a manner that is inconsistent with the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement (including the exclusive options set forth herein). Novartis acknowledges that Fluidigm shall be entitled, from time-to-time, to make intercompany transfers of intellectual property rights between Fluidigm and its Affiliates.

(i) Prior to the Effective Date, Fluidigm has not granted to any Third Party a license to use any Fluidigm chips or instruments for diagnostic or other clinical use in the Primary Field or the Secondary Field. Fluidigm has disclosed to Novartis prior to the Effective Date the current (as of the Effective Date) version of those certain standard terms and conditions that Fluidigm uses to govern the sale of its chips and instruments. On and after the Effective Date, Novartis shall have the right to review and approve a revision to those portions, of Fluidigm's standard terms and conditions for the sale of Fluidigm's chips and instruments, that govern licenses granted by Fluidigm, which approval may be denied solely on the basis of protecting Novartis' rights under this Agreement and the Ancillary Agreements, including its exclusive rights in the Primary Field and the Secondary Field (as such exclusivity is described in this Agreement, the License Agreement and the Supply Agreement). Novartis shall respond promptly to each Fluidigm request for approval of such a change, and, in any case, any failure of Novartis to so respond in writing (including an explanation of the basis for any refusal to approve) within fifteen (15) days after receipt of Fluidigm's proposed change(s) shall constitute Novartis' approval thereof. Such terms and conditions shall prohibit any Exploitation of such chips and instruments in the Primary Field and the Secondary Field but may permit research-only use (but not use to generate clinical results for a fee or results for use in the medical management of a patient) in the Secondary Field.

(j) Fluidigm shall obtain from each of its Affiliates, and from the employees of its Affiliates, who are involved in the manufacture of the Novartis Licensed Product(s) sold to Novartis under this Agreement, are otherwise participating in the Exploitation of the Fluidigm Patents or Fluidigm Know-How under this Agreement, or who have access to any Confidential Information of Novartis, rights to any and all Information and Inventions that relate to the Fluidigm Patents or Fluidigm Know-How, such that Novartis shall, by virtue of this

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Agreement, receive from Fluidigm, without payments beyond those required herein, the licenses and other rights granted to Novartis and its Affiliates hereunder.

(k) Except as disclosed in the Side Letter, to Fluidigm's Knowledge as of the Effective Date, there is no actual or threatened infringement or misappropriation by a Third Party of the Core Fluidigm Patents or the Core Fluidigm Know-How that is likely to have a material adverse effect on Novartis' Exploitation of the Core Fluidigm Patents and the Core Fluidigm Know-How contemplated by this Agreement.

ARTICLE XII
Miscellaneous

12.1 Force Majeure. Neither party shall be held liable or responsible to the other party or be deemed to have breached under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the non-performing party, including fires, floods, embargoes, shortages, epidemics, quarantines, war, acts of war (whether war be declared or not), insurrections, riots, civil commotion, strikes, lockouts or other labor disturbances, acts of God or acts, omissions or delays in acting by any governmental authority. The non-performing party shall notify the other party of such force majeure within ten (10) days after such occurrence by giving written notice to the other party stating the nature of the event, its anticipated duration, and any action being taken to avoid or minimize its effect. The suspension of performance shall be of no greater scope and no longer duration than is necessary and the non-performing party shall use commercially reasonable efforts to remedy its inability to perform.

12.2 Assignment; Change of Control.

(a) Neither party may assign its rights or delegate its obligations under this Agreement, in whole or in part, without the prior written consent of the other party, except that (i) Novartis shall have the right, without such consent, to assign any or all of its rights and delegate any or all of its obligations hereunder to any of its Affiliates or to any successor in interest (whether by merger, acquisition, asset purchase, or otherwise) to all or substantially all of the assets to which this Agreement relates and (ii) Fluidigm shall have the right, without such consent, to assign any or all of its rights and delegate any or all of its obligations hereunder to any company that acquires all or substantially all of Fluidigm's assets (whether by merger, acquisition, asset purchase, or otherwise). Any permitted successor of a party or any permitted assignee of all of a party's rights under this Agreement that has also assumed all of such party's obligations hereunder in writing shall, upon any such succession or assignment and assumption, be deemed to be a party to this Agreement as though named herein in substitution for the assigning party, whereupon the assigning party shall cease to be a party to this Agreement and shall cease to have any rights or obligations under this Agreement. All validly assigned rights of a party shall inure to the benefit of and be enforceable by, and all validly delegated obligations of such party shall be binding on and be enforceable against, the permitted successors and assigns of such party. Any attempted assignment or delegation in violation of this Section 12.2 shall be void and without effect.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(b) Notwithstanding Section 12.2(a), Novartis shall have the right (i) to perform any or all of its obligations and exercise any or all of its rights hereunder; (ii) to perform any or all of its obligations and exercise any or all of its rights under this Agreement through any of its Affiliates; and (iii) to subcontract its obligations hereunder to a Third Party, *provided* that Novartis remains liable for such Third Party's performance of such obligations.

(c) Fluidigm shall provide Novartis with fifteen (15) days' prior written notice of any Change of Control. Following the Change of Control, unless and until Novartis elects its right to terminate this Agreement pursuant to Section 9.4(c), the following shall apply:

(i) If Fluidigm or any of its Affiliates engages in development or commercialization of products in the Primary Field or Secondary Field other than the performance of its obligations under this Agreement, including the Collaboration Activities, or any Ancillary Agreement, Fluidigm and its Affiliates shall establish and enforce appropriate firewall procedures between such activities and the activities performed by or on behalf of Fluidigm or Affiliates pursuant to its other programs to ensure that no Collaboration Information and Inventions or Confidential Information of Novartis is used in connection with such other programs (such programs conducted in compliance with this Agreement, including the exclusivity afforded to Novartis with respect to the Fluidigm Patents, the Fluidigm Know-How and the Fluidigm Technology under this Agreement and the Ancillary Agreements, ("**Independent Programs**").

(ii) The Fluidigm Know-How, Fluidigm Patents and Fluidigm Technology shall exclude (A) any technology or intellectual property rights, [***] (collectively, "**Acquiring Entities**") and (B) any technology or intellectual property [***] in accordance with this Agreement ("**Acquisition IP**"); *provided*, *however*, that such exclusions (in clauses (A) and (B)) shall not apply to any Acquisition IP that is either (1) [***].

(iii) [***]

(iv) Without limitation of any other obligation of Fluidigm hereunder, Fluidigm shall ensure that it devotes adequate resources to the performance of the Collaboration Activities assigned to Fluidigm hereunder and shall maintain at least the level of support therefor consistent with the level of support afforded by Fluidigm prior to the Change of Control, including being diligent and using reasonable efforts to achieve the milestones set forth in this Agreement in accordance with ARTICLE III of this Agreement. If Novartis reasonably determines that such level of support is not being afforded by Fluidigm following the Change of Control, Novartis may so notify Fluidigm in writing, and if Fluidigm does not cure such failure within thirty (30) days after such notice, then Novartis shall have the right, on further written notice to Fluidigm at any time after such failure to cure by Fluidigm, to assume the performance of such activities promptly following written notice to Fluidigm and Fluidigm shall assist with the transfer of such activities to Novartis. If Novartis does so, then Novartis may deduct from the payments due to Fluidigm under this Agreement or any Ancillary Agreement any costs and expenses incurred by Novartis in performing such activities.

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12.3 Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable under any present or future law, and if the rights or obligations of any party under this Agreement will not be materially and adversely affected thereby, (a) such provision shall be fully severable, (b) this Agreement shall be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof, (c) the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid or unenforceable provision or by its severance herefrom, and (d) in lieu of such illegal, invalid or unenforceable provision, there shall be added automatically as a part of this Agreement a legal, valid and enforceable provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and reasonably acceptable to the parties herein. To the fullest extent permitted by applicable law, each party hereby waives any provision of law that would render any provision hereof prohibited or unenforceable in any respect.

12.4 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California without reference to the rules of conflict of laws thereof that would require the application of the laws of another jurisdiction. The parties expressly agree to exclude application of the United Nations Convention of the International Sale of Goods to this Agreement.

12.5 Notices. All notices or other communications that are required or permitted hereunder shall be in writing and delivered personally, sent by facsimile (and promptly confirmed by personal delivery, registered or certified mail or overnight courier as provided herein), sent by nationally-recognized overnight courier or sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

If to Fluidigm, to:

7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
Attention: [***]
Facsimile: (650) 871-7152

with a copy to:

7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
Attention: General Counsel
Facsimile: (650) 871-7195

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

If to Novartis, to:

Novartis Vaccines and Diagnostics, Inc.
4560 Horton Street, Emeryville, CA 94608
Attention: President, Diagnostics
Facsimile: (510) 655-9910

with copies to:

Novartis Vaccines and Diagnostics, Inc.
350 Massachusetts Avenue
Cambridge, MA 02139
Attention: General Counsel
Facsimile: (617) 871-8911

Covington & Burling
One Front Street
San Francisco, CA 94111
Attention: Amy L. Toro
Facsimile: (415) 955-6586

or to such other address as the party to whom notice is to be given may have furnished to the other party in writing in accordance herewith. Any such communication shall be deemed to have been given (i) when delivered, if personally delivered or sent by facsimile on a business day, (ii) on the business day after dispatch, if sent by nationally-recognized overnight courier, and (iii) on the fifth business day following the date of mailing, if sent by mail. It is understood and agreed that this Section 12.5 is not intended to govern the day-to-day business communications necessary between the parties in performing their duties, in due course, under the terms of this Agreement.

12.6 Dispute Resolution. Any matter that is unable to be resolved by the JSC shall be referred to Fluidigm's Chief Executive Officer and Novartis' President, Diagnostics for resolution (collectively, the "**Executives**"). The Executives shall negotiate in good faith to resolve any such dispute for up to forty-five (45) days of such dispute being referred to them. Any dispute regarding the validity, interpretation or construction of, or the compliance with or breach of this Agreement or any Ancillary Agreement, and is not resolved by the Executives shall be solely and exclusively settled by final and binding arbitration in accordance with the commercial arbitration rules of the American Arbitration Association ("**AAA**"), subject to the terms and conditions of this Section 12.6. Either party may initiate the arbitration of a dispute by sending written notice of such election to the other party clearly marked "Arbitration Demand" (the "**Arbitration Demand**"). The arbitration shall be adjudicated by one arbitrator appointed in accordance with the commercial rules of the AAA. The decision of the arbitrator shall be final and binding upon the parties hereto, and may be entered in any competent court for judicial acceptance of such an award and order of enforcement. The place of arbitration shall be San

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Francisco, California. Notwithstanding anything to the contrary in this Section 12.6, each party may, and expressly reserves the right to, seek judicial relief from any court of competent jurisdiction in order to obtain an injunction or other equitable relief pending the outcome of an arbitration hereunder or to enforce a breach of the confidentiality provisions in ARTICLE VIII. Subject to the foregoing, the state and federal courts situated in the city of San Francisco, California, shall have sole jurisdiction and venue to enforce any arbitration award and over proceeding for such injunctive or equitable relief brought pursuant to this Section 12.6. The parties irrevocably submit to such jurisdiction and venue, waive any claim to an inconvenient forum posed by such venue, and agree that process may be served in any manner permitted by such court before which a dispute is pending.

12.7 Entire Agreement; Modifications. This Agreement sets forth and constitutes the entire agreement and understanding between the parties with respect to the subject matter hereof and all prior agreements, understanding, promises and representations, whether written or oral, with respect thereto, including that certain Letter Of Intent dated December 23, 2009 and that certain Mutual Confidential Disclosure Agreement dated September 15, 2009, are superseded hereby. Each party confirms that it is not relying on any representations or warranties of the other party except as specifically set forth herein. No amendment, modification, release or discharge hereof shall be binding upon the parties unless in writing and duly executed by authorized representatives of both parties.

12.8 Relationship of the Parties. It is expressly agreed that Fluidigm, on the one hand, and Novartis, on the other hand, shall be independent contractors and that the relationship between the two parties shall not constitute a partnership, joint venture or agency. Neither Fluidigm, on the one hand, nor Novartis, on the other hand, shall have the authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the other, without the prior written consent of the other party to do so. All persons employed by a party shall be employees of such party and not of the other party and all costs and obligations incurred by reason of any such employment shall be for the account and expense of such party.

12.9 Equitable Relief. Each party acknowledges and agrees that the restrictions set forth in ARTICLE VIII of this Agreement are reasonable and necessary to protect the legitimate interests of the other party and that the other party would not have entered into this Agreement in the absence of such restrictions, and that any violation or threatened violation of any provision of ARTICLE VIII will result in irreparable injury to the other party. Each party also acknowledges and agrees that in the event of a violation or threatened violation of any provision of ARTICLE VIII, the other party shall be entitled to preliminary and permanent injunctive relief, without the necessity of proving irreparable injury or actual damages and without the necessity of having to post a bond, as well as to an equitable accounting of all earnings, profits and other benefits arising from any such violation. The rights provided in the immediately preceding sentence shall be cumulative and in addition to any other rights or remedies that may be available to either party.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

12.10 Waiver. Any term or condition of this Agreement may be waived at any time by the party that is entitled to the benefit thereof, but no such waiver shall be effective unless set forth in a written instrument duly executed by or on behalf of the party waiving such term or condition. The waiver by either party hereto of any right hereunder or of the failure to perform or of a breach by the other party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by said other party whether of a similar nature or otherwise.

12.11 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

12.12 No Benefit to Third Parties. The representations, warranties, covenants and agreements set forth in this Agreement are for the sole benefit of the parties hereto and their successors and permitted assigns, and they shall not be construed as conferring any rights on any other Persons.

12.13 Further Assurance. Each party shall duly execute and deliver, or cause to be duly executed and delivered, such further instruments and do and cause to be done such further acts and things, including the filing of such assignments, agreements, documents and instruments, as may be necessary or as the other party may reasonably request in connection with this Agreement or to carry out more effectively the provisions and purposes hereof, or to better assure and confirm unto such other party its rights and remedies under this Agreement.

12.14 References; Construction. Unless otherwise specified, (a) references in this Agreement to any Article, Section, Schedule or Exhibit shall mean references to such Article, Section, Schedule or Exhibit of this Agreement, (b) references in any section to any clause are references to such clause of such section, and (c) references to any agreement, instrument or other document in this Agreement refer to such agreement, instrument or other document as originally executed or, if subsequently varied, replaced or supplemented from time to time, as so varied, replaced or supplemented and in effect at the relevant time of reference thereto. Except where the context otherwise requires, wherever used, the singular shall include the plural, the plural the singular, the use of any gender shall be applicable to all genders and the word "or" is used in the inclusive sense (*i.e.*, meaning "and/or"). The captions of this Agreement are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Agreement or the intent of any provision contained in this Agreement. The term "including" as used herein shall mean including, without limiting the generality of any description preceding such term. The language of this Agreement shall be deemed to be the language mutually chosen by the parties and no rule of strict construction shall be applied against either party hereto.

[*Remainder of page left blank intentionally.*]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date first above written.

NOVARTIS VACCINES & DIAGNOSTICS, INC.	FLUIDIGM CORPORATION
By: _____	By: _____
Name: _____	Name: _____
Title: _____	Title: _____

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit A

Novartis Development Quality Agreement

Incorporated by reference to Exhibit 10.23 to the registrant's Registration Statement on Form S-1 filed with the Securities and Exchange Commission on January 18, 2011.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit B

Collaboration Plan

Novartis-Fluidigm Research Collaboration Activities and Milestones

The goal for the research collaboration is to develop and validate digital PCR [***] for use in the diagnosis of fetal aneuploidy from a [***] sample from a pregnant woman.

Phase 1: Evaluation

Goals:

1) [***]

2) [***]

Fluidigm tasks

Tasks	Expected Completion Date (post effective date)	Details/Metrics
Fluidigm Collaboration Milestone 1		
[***]	[***]	[***]
Fluidigm Collaboration Milestone 2		
[***]	[***]	[***]
Fluidigm Collaboration Milestone 3		
[***]	[***]	[***]
[***]	[***]	[***]
Fluidigm Collaboration Milestone 4		
[***]	[***]	[***]
[***]	[***]	[***]
Fluidigm Collaboration Milestone 5		
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	
Fluidigm Collaboration Milestone 6		
[***]	[***]	[***]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Novartis Tasks

Tasks	Expected Completion Date (post effective date)	Details/Metrics
Novartis Collaboration Milestone 1		
[***]	[***]	[***]
Novartis Collaboration Milestone 2		
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
Novartis Collaboration Milestone 3		
[***]	[***]	[***]
[***]	[***]	[***]
Novartis Collaboration Milestone 4		
[***]	[***]	[***]
Novartis Collaboration Milestone 5		
[***]	[***]	[***]
[***]	[***]	[***]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Phase 2: [***]

Note:

- [***]
- [***]

Goals:

1.[***]

2.[***]

3.[***]

Fluidigm tasks

Tasks	Expected Completion Date (post start of Phase 2)	Details/Metrics
[***]	[***]	
[***]	[***]	[***]
[***]	[***]	
[***]	[***]	
[***]	[***]	
[***]	[***]	
[***]	TBD	[***]
[***]	TBD	[***]
[***]	TBD	¡ TBD
[***]	TBD	¡ TBD
[***]	TBD	¡ TBD
[***]	TBD	¡ TBD

Novartis Tasks

Tasks	Expected Completion Date (post start of Phase 2)	Details/Metrics
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Phase 3: [***]

Goals:

1. [***]

Fluidigm tasks

Tasks	Expected Completion Date (post start of Phase 3)	Details/Metrics
[***]	[***]	[***]
[***]	[***]	[***]

Novartis Tasks

Tasks	Expected Completion Date (post start of Phase 3)	Details/Metrics
[***]	[***]	
[***]	[***]	
[***]	[***]	

[***]

Quality Milestones

Milestone	Expected completion time	Details / Metrics
QA Milestone 1[***]	[***]	[***]
QA Milestone 2[***]	[***]	[***]
QA Milestone 3[***]	[***]	[***][***][***]
QA Milestone 4[***]	[***]	[***][***][***]
QA Milestone 5[***]	[***]	[***][***][***]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Confidential

Exhibit C

Assay Patents

Client	Case No. Client Case #	Title	Country	Application Number	Filing Date	Status
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]		[***]	[***]

* No foreign filing planned.
** To be filed in EPO only.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Client	Case No. Client Case #	Title	Country	Application Number	Filing Date	Status
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]

***** Fluidigm's rights (including prosecution rights) have been sublicensed to Artemis Health with respect to sequencing.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit D

Description of Current Fluidigm Technology

[Attached]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Exhibit D
BioMark Real-Time System

Fluidigm

BioMark™ Real-Time PCR System

HIGH-THROUGHPUT GENETIC ANALYSIS

- Gene Expression
- SNP Genotyping
- Digital PCR

The BioMark system comes with a suite of software applications: Real-time PCR, SNP genotyping, and digital PCR.

BIOMARK

The BioMark Real-Time PCR System sets the new standard for high throughput real-time qPCR assays, integrating thermal cycling and flourescence detection on Digital Array™ IFCs and Dynamic Array™ IFCs. The BioMark system — together with the IFC Controller for integrated fluidic circuit (IFC) loading — streamlines workflow for applications demanding sensitivity and dynamic range, at extremely high throughput.

Key Benefits –

- *Real-time and end-point detection of PCR assays on Fluidigm IFCs*
- *Powerful, easy to use software for gene expression, SNP genotyping, and digital PCR*
- *Compatibility with your 5' nuclease assays*

High-Throughput Real-Time Detection

The system integrates thermal cycling and detection of PCR assays for all Dynamic Array IFCs and Digital Array IFCs. It acquires data for each reaction chamber on the IFC simultaneously and can operate in either end-point or real-time detection mode.

Analysis Software

The BioMark Real-Time PCR System is bundled with data collection and data analysis software. Real-Time PCR Analysis Software displays the analyzed data in multiple formats, including color-coded maps of every reaction chamber on the IFC, amplification curves, and numeric tables. Results may be easily managed, annotated, and archived.

5' Nuclease Assays

Because the BioMark system is designed for licensed 5' nuclease assays, laboratories may easily switch to Dynamic Array IFCs and Digital Array IFCs for PCR while continuing to use their tried and true reagents and protocols. Also, the entire system, from the footprint of the chips to the architecture of analysis and database software, adheres to industry standards, ensuring integration with established workflows.

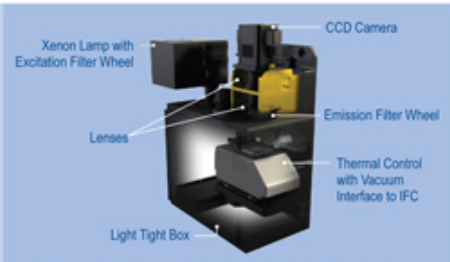
BioMark Real-Time PCR System

Specifications

PARALLEL REACTIONS	
Real-Time qPCR	2,304 / 9,216*
SNP Genotyping	2,304 / 9,216*
Digital PCR	9,180 / 36,960

COMPONENTS	
PARAMETER	
Excitation filters (center-width, in nm)	485-20, 530-20, 580-25 (two empty positions)
Emission filters (center-width, in nm)	525-25, 570-30, 645-75 (two empty positions)
CCD camera	9 MPixel, 12 µm x 12 µm pixel size
Illumination	300-watt Xenon arc lamp
Thermal control	4ºC–99ºC range Heating (65ºC-90ºC) > 2ºC/sec Cooling (90ºC-65ºC) > 1ºC/sec
Software	BioMark Real-Time PCR Analysis software BioMark Genotyping Analysis software BioMark Digital PCR Analysis software BioMark Data Collection software
Computer and accessories	Windows XP, having at least 512 MB memory, 40 GB hard drive, 4 USB ports, LCD flat screen monitor, keyboard and mouse, CD-RW/DVD-ROMData
Data storage	1 GB/sec Ethernet connection 40 GB hard disk space Read-write DVD USB port for memory stick

* Number of parallel reactions depends on IFC architecture, either the 48.48 Dynamic Array IFC or 96.96 Dynamic Array IFC.



The BioMark Real-Time PCR System is comprised of a thermal cycler, high-end optics, and a high-resolution camera that ensure reliable instrument performance.

Fluidigm System for Genetic Analysis

- **Dynamic Array™ IFCs**
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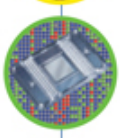
- **Digital Array™ IFCs**
  Consumable IFCs for digital PCR.
- **IFC Controller**
  Integrated hardware/software for loading IFCs.
- **FC1™ Cycler**
  Integrated hardware/software for thermal cycling of IFCs.
- **EP1™ Reader | Real-Time PCR System**
  Integrated hardware/software for detection of fluorescent signal within IFCs.
- **Software Suite**
  Analysis software for gene expression analysis, SNP genotyping, and digital PCR.
- **Service Plans**
  Hardware service and software maintenance plans.

Gene Expression

SNP Genotyping



Digital PCR

BIOMARK

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Fluidigm

END POINT DETECTION OF PCR ASSAYS
ON DYNAMIC ARRAYS AND DIGITAL ARRAYS

SNP Genotyping

Digital PCR

The EP1 system includes a suite of software for SNP genotyping and digital PCR.

FLUIDIGM EP1
GENETIC ANALYSIS

The Fluidigm EP1 Reader opens the door to the power of integrated fluidic circuits (IFCs) for high-throughput SNP genotyping and digital PCR. The EP1 Reader is part of a cost-effective system to streamline the entire workflow, from the setup of Dynamic Array™ IFCs and Digital Array™ IFCs to PCR thermal cycling, endpoint detection, and data analysis. Its economy and flexibility will make it a mainstay in any research lab.

Key Benefits –

- *An economical solution for high throughput SNP genotyping*
- *A modular system design that is easily scalable*
- *Data analysis with a powerful and easy to use suite of software*

Scalable with Your Research

As your research grows, the throughput of your EP1 system can be expanded, too. Simply add IFC Controllers and FC1™ Cyclers to scale up the number of experiments per day on a single EP1 Reader.

Powerful Analysis Software

The EP1 Reader is bundled with data collection and analysis software for SNP genotyping and digital PCR. Genotyping Analysis Software is user friendly and displays results in multiple formats, including scatter plots, heat maps, and tabular reports. Digital PCR Software allows automated analysis to easily determine copy number variations (CNVs) among samples.

Compatible with Your Existing Reagents and Protocols

The EP1 system is designed for licensed 5' nuclease assays. Therefore, laboratories may easily switch to genotyping on Dynamic Array IFCs without the inconvenience of switching their reagents and protocols.

EP1™ Reader

HIGH PERFORMANCE PCR | PRODUCT NEWS

Specifications

PARALLEL REACTIONS	
SNP Genotyping	2,304/9,216*
Digital PCR	9,180/36,960
COMPONENTS	
PARAMETER	
Excitation filters (center-width, in nm)	485-20, 530-20, 580-25
Emission filters (center-width, in nm)	525-25, 570-30, 630-30
Illumination	175-watt Xenon arc lamp
Software	Data Collection software Genotyping Analysis software Digital PCR Analysis software
Computer	Windows XP, having at least 512 MB and accessories memory, 40+GB hard drive, USB ports, LCD flat screen monitor, keyboard, mouse

* Number of parallel reactions depends on IFC architecture, either the 48.48 Dynamic Array IFC or 96.96 Dynamic Array IFC.

Fluidigm System for Genetic Analysis

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  Hardware/software for loading IFCs.
- **FC1™ Cycler**
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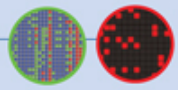
- **EP1™ Reader | Real-Time PCR System**
  Hardware/software for detection of fluorescent signal within IFCs.
- **Software Suite**
  Analysis software for gene expression analysis, SNP genotyping, and digital PCR.
- **Service Plans**
  Hardware service and software maintenance plans.

Fast and Easy Work Flow

1. **Prime** — Prime the IFC to prepare for samples and assays.
2. **Transfer** — Transfer samples and assays into separate inlets on the IFC.
3. **Load** — Place the IFC on the IFC controller to automatically setup reaction chambers.
4. **Thermal Cycle** — Place the IFC onto the FC1 Cycler and start the PCR protocol.
5. **Read** — Place the IFC on the EP1 Reader for fluorescence detection.
6. **Analyze** — Use analysis software to view and interact with results for the run or for multiple runs.



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Fluidigm

IFC Controller MX

– Gene Expression, SNP Genotyping, Digital PCR

HIGH THROUGHPUT GENETIC ANALYSIS

- Gene Expression
- SNP Genotyping
- Digital PCR

The touch screen provides simple, intuitive controls for the IFC loading process.

The Fluidigm IFC Controller MX is part of a complete system for high-throughput genetic analysis, which includes Fluidigm Dynamic Array™ IFCs and Digital Array™ IFCs as well as the instrumentation for thermal cycling and detection. With the IFC Controller MX, high-density reactions can be setup easily and simply within the integrated fluidic circuit (IFCs), without arduous pipetting.

Key Benefits –

- *Automated setup of 48.48 Dynamic Array IFCs and 12.765 Digital Array IFCs*
- *Compact, fully integrated design*
- *Vivid touch screen display and easy-to-use software*

Easy IFC Setup

The IFC Controller MX automates the setup of Dynamic Array IFCs or Digital Array IFCs. After samples and assays have been pipetted into the inlets of the input frame, the IFC is placed onto the IFC Controller MX. A few taps of the touch screen are all that are required to begin loading samples and assays into the IFCs. When setup is complete, the IFCs are thermal cycled, and the data are collected using the BioMark™ Real-Time PCR System or EP1™ Reader.

Sleek, Compact Design

The IFC Controller MX is a fully integrated system, including built in software and a self contained gas source for pressure-loading assay components into the IFCs. The compact design minimizes space requirements and allows labs to accommodate multiple units.

User Friendly Software

The software for the IFC Controller MX has been designed to be simple yet powerful. Preloaded scripts are included, and navigating through menus is effortless with controls that are clear and intuitive.

IFC Controller MX

Specifications

IFC COMPATIBILITY

Gene Expression Analysis	48.48 Dynamic Array IFC
SNP Genotyping	48.48 Dynamic Array IFC
Digital PCR	12.765 Digital Array IFC 48.770 Digital Array IFC

COMPONENTS

PARAMETER	
Experiment tracking	Barcode
Gas pressure	Internal compressor
Interface	USB and Ethernet
IFC Controller MX software	Touch screen interface for operating and tracking
Dimensions (approx.)	19 x 9.5 x 13 inches 48.5 x 24 x 33 cm

Fluidigm System for Genetic Analysis

- **Dynamic Arrays™ IFCs**
  Consumable IFCs for high-throughput gene expression analysis and SNP genotyping.
- **Digital Arrays™ IFCs**
  Consumable IFCs for digital PCR.
- **IFC Controller**
  Hardware/software for loading IFCs.
- **FC1™ Cycler**
  Hardware/software for thermal cycling of IFCs.
- **EP1™ Reader | Real-Time PCR System**
  Hardware/software for detection of fluorescent signal within IFCs.
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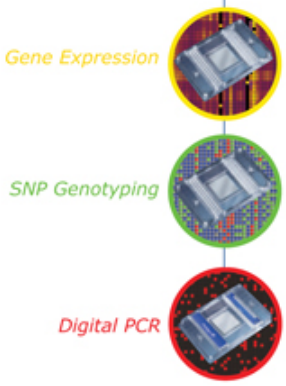
  Hardware service and software maintenance plans.



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IFC Controller HX

– Gene Expression and SNP Genotyping

HIGH THROUGHPUT GENETIC ANALYSIS

Gene Expression

SNP Genotyping

The IFC Controller HX offers a vivid touch screen and easy to use controls.

The Fluidigm IFC Controller HX is part of a complete system for high-throughput genetic analysis, including 96.96 Dynamic Array™ IFCs, instrumentation for thermal cycling and fluorescence detection, and data analysis software for SNP genotyping and gene expression. With the IFC Controller HX, 9,216 reactions can be setup quickly and easily within integrated fluidic circuit (IFCs).

Key Benefits –

- *Automated setup of 96.96 Dynamic Array IFCs*
- *Significantly fewer liquid handling steps compared to conventional platforms*
- *Self-contained and fully integrated design*

Easy Setup of 96.96 Dynamic Array IFCs

After samples and assays have been pipetted into the inlets of the input frame of the 96.96 Dynamic Array IFC, the Dynamic Array IFC is placed onto the IFC Controller HX. Because the software interface is simple yet powerful, a few taps of the touch screen are all that's required to begin loading samples and primer-probe sets.

Minimal Liquid Handling Steps

The IFC Controller HX — in conjunction with a single 96.96 Dynamic Array IFC — facilitates the setup of 9,216 parallel PCR reactions using only 192 liquid handling steps. This represents a significant savings in time and resources when compared to conventional platforms for genetic analysis.

Compact Design With User Friendly Software

The IFC Controller HX is a compact single-bay unit that includes built-in software and a self-contained gas source for pressure-loading assay components into IFCs. Because the IFC Controller HX takes up minimal space, labs can accommodate multiple units to increase chip-loading capacity.

IFC Controller HX

Specifications

IFC COMPATIBILITY	
Gene Expression Analysis	96.96 Dynamic Array IFC
SNP Genotyping	96.96 Dynamic Array IFC

COMPONENTS	
PARAMETER	
Experiment tracking	Barcode
Gas pressure	Internal compressor
Interface	USB and Ethernet
IFC Controller HX software	Touch screen interface for operating and tracking
Dimensions (approx.)	19 x 9.5 x 13 inches 48.5 x 24 x 33 cm

Fluidigm System for Genetic Analysis

- **Dynamic Array™ IFCs**
  Consumable IFCs for high-throughput gene expression analysis and SNP genotyping.
- **Digital Array™ IFCs**
  Consumable IFCs for digital PCR.
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  Hardware/software for loading IFCs.
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- **Software Suite**
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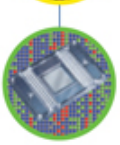
- **Service Plans**
  Hardware service and software maintenance plans.

Gene Expression

SNP Genotyping



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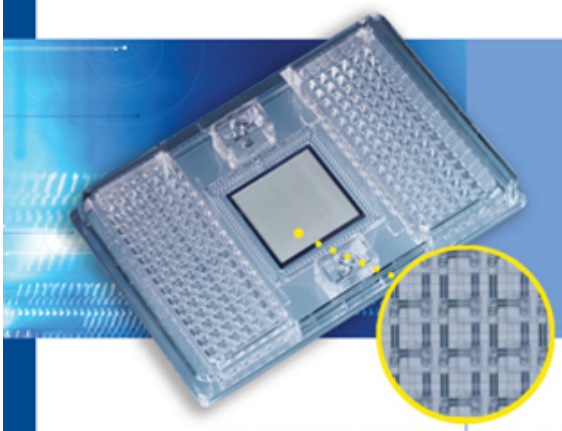
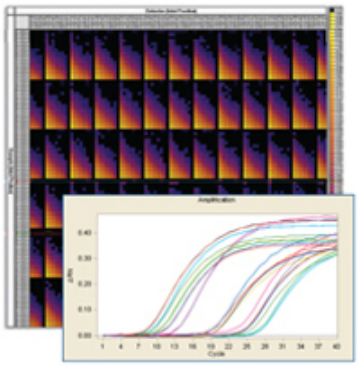
96.96 Dynamic Array IFC

Fluidigm



96.96 Dynamic Array™ IFC
– Gene Expression

HIGH-THROUGHPUT MULTIPLEX PCR



Gene expression results may be viewed as real-time curves and as a heat map showing 9,216 reactions per run.

The Fluidigm 96.96 Dynamic Array IFC – Gene Expression provides the flexibility of a microwell plate and the density of a microarray in one easy-to-use, consumable integrated fluidic circuit (IFC).

Key Benefits –

- *Easy multiplexing of 96 primer-probe sets against 96 samples*
- *9,216 individual data points per Dynamic Array IFC*
- *192 liquid-transfer steps per 9,216 reactions, with complete setup flexibility*

The New Standard in High Throughput Profiling

Fluidigm Dynamic Array IFCs radically reduce the cost per data point and time to results while radically raising the bar for parallel throughput. The chart below shows parameters to complete a study of 2,000 samples against 96 genes using 384-well plates compared to 96.96 Dynamic Array IFCs:

	384-WELL MICROPLATES	96.96 DYNAMIC ARRAY IFCS
TOTAL RUNS	500	21
REACTIONS PER RUN	384	9,216
TOTAL LIQUID-TRANSFER STEPS	384,000	4,032
TOTAL MASTER MIX	960 ml	5.1 ml

The Power of Microfluidics

With a Dynamic Array IFC, high-throughput multiplexing is easy because the microfluidic architecture does the work of combining samples and primer-probe sets into 9,216 PCR reactions. That's twenty four-fold more data than is produced by a 384-well plate. This radical advance in experiment density is fully leveraged through a hardware/software system that automates setup and data analysis.

BIOMARK

96.96 Dynamic Array IFC – Gene Expression

Specifications

PARAMETER	
Quantitative resolution	2-fold difference in starting copy with 99.7 % confidence and 6-log of dynamic range
Chip format	SBS Compatible (128 mm x 85 mm x 14 mm)
Inlet spacing on input frame	4.5 mm pitch
Liquid transfer steps	192
Primer-probe inlets	96
Sample inlets	96
Reaction chambers	9,216
Reaction volume	6.7 nl
Instrument compatibility	BioMark Real-Time PCR System, IFC Controller HX

Fluidigm System for Genetic Analysis

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  Integrated hardware/software for loading IFCs.
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- **EP1™ Reader | Real-Time PCR System**
  Integrated hardware/software for detection of fluorescent signal within IFCs.
- **Software Suite**
  Analysis software for gene expression analysis, SNP genotyping, and digital PCR.
- **Service Plans**
  Hardware service and software maintenance plans.

Work Flow

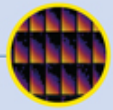
1 Prime
Prime the Dynamic Array IFC to close the interface valves, preventing premature mixing of samples and assays.

2 Transfer
Pipette samples, premixed with master mix, into separate sample inlets and the primer-probe sets into separate primer-probe inlets on the IFC.

3 Load
Place the Dynamic Array IFC on the IFC controller, and use the software interface to pressure load the assay components into reaction chambers. Assay components are automatically combined on-chip.

4 Run
Place the Dynamic Array IFC on the BioMark Real-Time PCR System for thermal cycling and fluorescence detection.

5 Analyze
Use real-time qPCR Analysis software to view and to interact with amplification curves, color-coded heat maps, and C_t data for the run.



For Use with Gold-Standard PCR Assays

The BioMark system runs licensed 5' nuclease assays, so it integrates easily into established workflow. The footprint of the Dynamic Array IFC and spacing of fluid inlets comply with SBS* standards, so the laboratory may continue to use existing liquid-handling equipment. Fluidigm has adopted SBS standards for all of its systems, ensuring compatibility of BioMark instrumentation with higher density IFCs in future releases.

* The Society for Biomolecular Sciences

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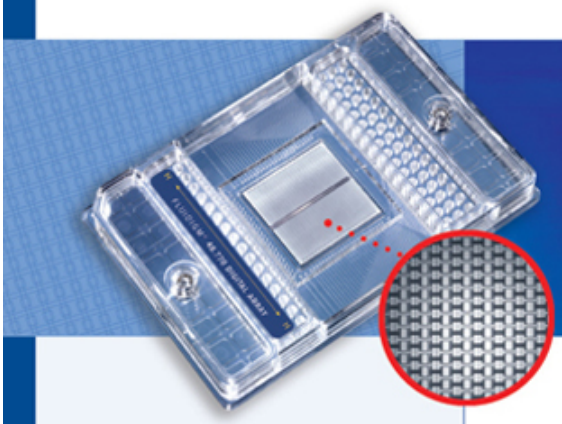
48.770 Digital Array IFC

Fluidigm



48.770 Digital Array™ IFC
– Digital PCR

INDIVIDUAL MOLECULE QUANTIFICATION

- Copy Number Variation Studies
- Absolute Quantification
- Mutation Detection

The Fluidigm 48.770 Digital Array Integrated Fluidic Circuit (IFC) delivers high-throughput digital PCR — the most powerful technique for individual molecule quantification. The 48.770 Digital Array IFC enables up to 48 individual samples to be tested at a time.

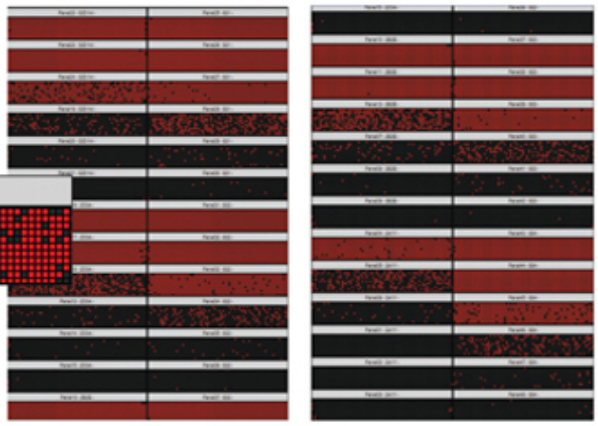
Key Benefits –

- *Unique – the only commercially proven solution for digital PCR.*
- *High throughput – up to 48 samples per run.*
- *Accurate – detection and quantification for individual molecules.*

The Power of Digital PCR

Digital PCR significantly improves the performance of standard PCR assays. Therefore, resolution is higher for CNV experiments, selectivity is better for mutation detection, and molecule quantification is absolute.

Each bright spot indicates a positive PCR reaction. The total number of positives is used to calculate the number of target molecules in an individual sample. Forty eight samples can be tested on a single 48.770 Digital Array IFC.



48.770 Digital Array IFC – Digital PCR

Specifications

PARAMETER	
Detection sensitivity	Single copy (if copy is present in the reaction chamber)
Footprint dimensions	128 mm x 85 mm x 14 mm
Inlet spacing on input frame	4.5 mm pitch
Minimum input volume/sample	4 uL (48 samples per array)
Liquid transfer steps	48
Sample inlets	48
Reactions per sample	770
Total reaction chambers	36,960
Individual reaction volume	0.84 nL
Total reaction volume/sample	0.65 uL (per sample)
Instrument compatibility	BioMark Real-Time PCR System, EP1™ Reader, IFC Controller MX

Fluidigm System for Genetic Analysis

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  Integrated hardware/software for detection of fluorescent signal within IFCs.
- **Software Suite**
  Analysis software for gene expression analysis, SNP genotyping, and digital PCR.
- **Service Plans**
  Hardware service and software maintenance plans.

Digital Accuracy — Fast, Easy, and Reliable

The 48.770 Digital Array IFC uses IFC technology to automatically partition each of the 48 samples into 770 PCR reactions (36,960 individual qPCR reactions). This partitioning, of as little as 4 uL of total reaction volume, eliminates the need for time consuming pipetting steps while minimizing reagent costs. Digital Array IFCs are compatible with off-the-shelf reagents and standard SBS* format dispensing layouts.

48.770 Digital Array Work Flow

DNA

1. **Prime.** — 00:20
2. **Dispense.** Pipette DNA samples, premixed with master mix and primer-probe sets, into inlets on the IFC. — 00:25
3. **Load.** Place the Digital Array IFCs on the IFC controller to automatically load the sample mixture into reaction chambers. — 00:55
4. **Run.** Place the Digital Array IFC on the BioMark Real-Time qPCR System (or FC1 Cycler and EP1 Reader) for thermal cycling and fluourescence detection. — 03:20
5. **Analyze.** Use Digital PCR Analysis software to count the number of positive PCR reactions per sample and calculate the sample concentration.

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FC1 Cycler

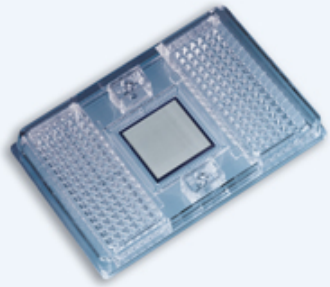
Fluidigm

Fluidigm FC1™ Cycler

THERMAL CYCLING ON DYNAMIC ARRAY AND DIGITAL ARRAY IFCS

SNP Genotyping

Digital PCR



The FC1 Cycler is specially designed for PCR on Fluidigm integrated fluidic circuits.

The Fluidigm FC1 Cycler provides thermal cycling for high sample throughput SNP genotyping and digital PCR applications on Fluidigm integrated fluidic circuits (IFCs).

Key Benefits –

- *Fast thermal cycling for SNP genotyping applications*
- *Scalability of throughput*
- *Intuitive, easy-to-use interface*

Faster Time-to-Results

The FC1 Cycler is capable of fast thermal cycling protocols to greatly increase throughput of Fluidigm IFCs. After PCR is complete, the IFC is placed on the Fluidigm EP1™ Reader or BioMark™ Real-Time PCR System for end-point data collection. The entire workflow, from loading the IFC to end point detection, is complete in a matter of hours with only minutes of hands-on time.

Scalable Throughput

The FC1 Cycler, together with IFC Controller, provide a modular solution for scaling throughput according to laboratory needs. Simply adding FC1 Cyclers greatly increases capacity without modifying the existing platform.

Easy-to-Use Controls

The FC1 Cycler offers a streamlined design, including a self-contained vacuum source, to minimize lab space requirements and maximize productivity. A touchscreen interface with intuitive controls offers easy editing of thermal protocols.

Fluidigm FC1 Cycler

HIGH PERFORMANCE PCR | PRODUCT NEWS

Specifications

IFC COMPATIBILITY	
SNP Genotyping	48.48 and 96.96 Dynamic Array™ IFCs
Digital PCR	12.765 Digital Arrays™ IFCs

COMPONENTS	
PARAMETER	
Dimensions (approx.)	9 x 8 x 19 in. 23 x 20 x 48 cm
Software	Touchscreen interface for operation and protocol editing
Vacuum Source	Internal vacuum pump
Voltage	100-230V, 50-60 Hz

THERMAL CONTROL	
Temperature range	4ºC to 99ºC
Max Heating Rate	>5ºC/sec
Max Cooling Rate	>5ºC/sec

Fluidigm System for Genetic Analysis

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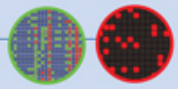
- **Software Suite**
  Analysis software for gene expression analysis, SNP genotyping, and digital PCR.
- **Service Plans**
  Hardware service and software maintenance plans.

Fast and Easy Work Flow

1. **Prime** — Prime the IFC to prepare for samples and assays.
2. **Transfer** — Transfer samples and assays into separate inlets on the chip.
3. **Load** — Place the IFC on the IFC controller to automatically setup reaction chambers.
4. **Thermal Cycle** — Place the IFC onto the FC1 Cycler and start the PCR protocol.
5. **Read** — Place the IFC on the EP1 Reader for fluorescence detection.
6. **Analyze** — Use analysis software to view and interact with results for the run or for multiple runs.



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MRKT00145

Stand-Alone Thermal Cycler

Fluidigm

Stand-Alone Thermal Cycler

THERMAL CYCLING ON DYNAMIC ARRAYS AND DIGITAL ARRAYS

SNP Genotyping

Digital PCR

The Fluidigm Stand-Alone Thermal Cycler (STC) provides an ideal solution for end-point PCR assays on Fluidigm integrated fluidic circuits (IFCs).

Key Benefits –

- *Highly efficient workflow for SNP genotyping or digital PCR*
- *Scalability of throughput*
- *Familiar, easy-to-use interface*

Fast Time-to-Results

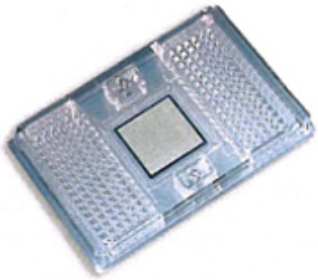
After PCR is complete, the integrated fluidic circuit — either a dynamic array or digital array — is placed on the Fluidigm EP1™ Reader or BioMark™ Real-Time PCR System for end-point data collection. Final results are available in a matter of hours, yet the hands-on time is only minutes.

Scalable Throughput

The Stand-Alone Thermal Cycler, together with the EP1 Reader or BioMark system, provides a modular solution for scaling throughput according to laboratory needs. Simply adding STC units greatly increases capability without modifying the basic platform.

Easy-to-Use Controls

The STC consists of a standard thermal cycler and a vacuum accessory to accommodate IFCs. As such, its use will be familiar to anyone running PCR assays.



The Stand-Alone Thermal Cycler is specially designed for PCR on Fluidigm integrated fluidic circuits.

Stand-Alone Thermal Cycler

Specifications

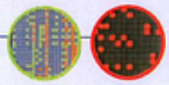
IFC COMPATIBILITY	
SNP Genotyping	48.48 and 96.96 Dynamic Arrays
Digital PCR	12.765 Digital Arrays
COMPONENTS	
PARAMETER	
Dimensions (approx.)	10 x 14.5 x 14 in. 25.4 x 37 x 35.5 cm
Software	Built-in control software
Interface	Electronic Display and Touchpad
Vacuum Accessory	Included with the system
Electrical	Region-specific power settings requirements

Fluidigm System for Genetic Analysis

- **Dynamic Arrays**
  Consumable IFCs for high-throughput gene expression analysis and SNP genotyping.
- **Digital Arrays**
  Consumable IFCs for digital PCR.
- **IFC Controller**
  Integrated hardware/software for loading IFCs.
- **Stand-Alone Thermal Cycler**
  Integrated hardware/software for thermal cycling of IFCs.
- **EP1 Reader | Real-Time PCR System**
  Integrated hardware/software for detection of fluorescent signal within IFCs.
- **Software Suite**
  Analysis software for gene expression analysis, SNP genotyping, and digital PCR.
- **Service Plans**
  Hardware service and software maintenance plans.

Fast and Easy Work Flow

1. **Prime** — Prime the IFC to prepare for samples and assays.
2. **Transfer** — Transfer samples and assays into separate inlets on the chip.
3. **Load** — Place the IFC on the IFC controller to automatically setup reaction chambers.
4. **Thermal Cycle** — Place the IFC onto the Stand-Alone Thermal Cycler and start the PCR protocol.
5. **Read** — Place the IFC on the EP1 Reader for fluorescence detection.
6. **Analyze** — Use analysis software to view and interact with results for the run or for multiple runs.



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HRKT00124

Exhibit E

<u>Fluidigm Patents</u>

Client	Case No. Client Case #	Title	Country	Application Number	Filing Date	Status
[***]	[***]	[***]	[***]		[***]	[***]
[***]	[***]	[***]	[***]		[***]	[***]
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* No foreign filing planned.

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* No foreign filing planned.
** To be filed in EPO only.
*** To be filed in EPO and SG only.
**** Undetermined but foreign filing in EPO likely.

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***** Fluidigm’s rights (including prosecution rights) have been sublicensed to Artemis Health with respect to sequencing.

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Exhibit F

License Agreement

Incorporated by reference to Exhibit 10.22 to the registrant's Registration Statement on Form S-1 filed with the Securities and Exchange Commission on January 18, 2011.

Confidential

Exhibit G

Key Supply Terms in Supply Agreement

Parties	Supplier – Fluidigm Corporation Purchaser – Novartis Vaccines and Diagnostics, Inc. or its applicable Affiliate
Products	Commercial Chips (or such other chips for conducting digital PCR as may be mutually agreed by the parties). Fluidigm Instruments.
Use of Products	Use of Products by Purchaser shall be limited to the Primary Field and Secondary Field.
Exclusivity	In the Primary Field and the Secondary Field in the Territory during the term of the Supply Agreement, Supplier shall exclusively supply Purchaser with its requirements of Products, and Purchaser shall exclusively purchase Products from Supplier (except as otherwise provided in the Supply Agreement with respect to a Failure to Supply). Such exclusivity shall not affect Supplier's right to supply academic institutions with Product under a restricted research only license, and Supplier's research only rights in the Secondary Field, as permitted in the Collaboration Agreement. Purchaser shall have the right for audit of Supplier's manufacturing facilities and Quality Systems, including third-party facilities, with prior approval before the purchase of Fluidigm Chips and Fluidigm Instruments for clinical development and Commercial Chips and associated Fluidigm Instruments.
Alternate supplier	Purchaser may engage a Third Party to supply Products, only to Purchaser, in (and only for use in) the Primary Field and the Secondary Field in the Territory only in the case of a Failure to Supply that Product (as defined below). [***]
Failure to Supply	"Failure to Supply" a Product shall mean (a) failure of Supplier to deliver [***] of the quantity of conforming Product ordered, to the extent Supplier was obligated to, or did, accept the order, within a reasonable time after the due date therefor in [***] calendar months, or (b) the occurrence of any event that (i) for so long as Novartis or a Novartis Affiliate is Purchaser, Purchaser reasonably determines in good faith will render Supplier persistently and materially unable to fulfill its supply obligations under the Supply Agreement for that Product for a period of time in excess of the inventories then held by Purchaser and Supplier of such Product, or (ii) in all other cases, will render Supplier persistently and materially unable to fulfill its supply obligations under the Supply Agreement for that Product for a period of time in excess of the inventories then held by Purchaser and Supplier of such Product. To reduce the likelihood of a Failure to Supply, Supplier shall qualify (from a capability of supply and quality standpoint (including quality approval by Novartis)) an alternative manufacturing location, which can but need not be owned or controlled by Fluidigm, such location to be in a distinct geographic location from its primary manufacturing location.
Shortage Allocation	Novartis open orders are filled on a priority basis, i.e. right of first refusal in the event of product shortages, up to the quantity for which Supplier is obligated to accept orders under the order procedure.
Quality/Documentation	Product shall be manufactured in accordance with the specifications for the Products and applicable law and Purchaser's Quality System standards. All

Product (and critical components) must be manufactured at a cGMP approved facility, which facility shall have been pre-approved by Novartis in accordance with its then current quality standards. At the time of delivery, Product shall conform to the specifications therefor. Supplier shall provide appropriate certificates and import documentation to Purchaser for each unit supplied. Purchaser shall have the right to reject any lot that does not meet agreed criteria within an agreed timeframe and request release test data at any time.

Purchaser's Manufacturing Quality Agreement must be signed by the Supplier's Quality function Representative in conjunction with the Supply Agreement. Quality requirements including but not limited to:

1. Product shall be manufactured in accordance with the specifications for the Products and applicable law and Purchaser's Quality System standards.
2. Manufacturing Facility, equipment and manufacturing processes and test methods used in the manufacturing and product release must be validated for the intended purposes.
3. All Product (and critical components) must be manufactured at a cGMP approved facility, which facility shall have been pre-approved by Novartis in accordance with its then current quality standards. Where manufacturer outsources the manufacturing or warehousing to external 3rd party subcontractor(s), the same quality standards must be applied and quality agreements must be established between the manufacturer and the 3rd party subcontractor. Purchaser shall have the rights to inspect manufacturer's subcontractors to assure compliance to Purchaser's quality system requirements.
4. All changes including raw materials, manufacturing processes, test methods must be communicated to Purchaser prior to implementation of the change.
5. Purchaser shall have the rights to inspect Supplier's manufacturing facility on an annual basis. Any nonconformity must be investigated, corrected and documented promptly.
6. Key performance indicators shall be established between Supplier and Purchaser.
7. Supplier must notify Purchaser on any identified deviation and potential failure that will affect the quality, safety and efficacy of the products in order for Purchaser to determine course of actions including potential recall and field corrections.
8. At the time of delivery, Product shall conform to the specifications therefor. Supplier shall provide appropriate certificate of conformance and import documentation to Purchaser for each unit supplied. Purchaser shall have the right to reject any lot based on agreed criteria and within an agreed timeframe and request release test data at any time.

Safety Stock	Purchaser and Supplier will agree upon a reasonable quantity of safety stock of Products to be held by each of the parties. Increased safety stock levels may be

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	agreed above [***] requirements made for new product launches or product improvements where actual demand data is modeled and not based on historic consumption. Purchaser bears the ultimate responsibility for eventual purchase of all safety stock (*provided* that such safety stock satisfies the applicable product warranties) that Purchaser does not purchase and cannot be readily sold to third parties following a termination of the Supply Agreement by Supplier for cause or by Purchaser without cause.
Forecasting	Commencing [***] prior to launch, Purchaser shall provide Supplier with a [***] rolling, non-binding forecast. The Supply Agreement shall include, for months [***] of such forecast, restrictions upon the upward and downward deviations from the quantities forecast for such months in the prior forecast.
Binding Orders	The [***] of each forecast shall be firm orders, on a rolling basis. Supplier will accept orders for volumes within [***] of the amount last forecasted for the applicable month (*provided* that such forecasted amount does not vary more than an agreed percentage from certain prior forecasts, as described above), and will in any event use reasonable efforts to accept all orders.
Delivery	All Product shall be supplied in finished, final form per Novartis' specifications, Ex Works, ready for commercial sale.
Term	Unless terminated, for so long as Purchaser is commercializing Products under the License Agreement or the surviving provisions thereof.
Termination	At all times during the Term (a) for breach and insolvency; (b) by Purchaser for a Failure to Supply; or (c) automatically upon termination of the License Agreement.
Price	For Commercial Chips used in an IVD [***] in the Primary Field, Purchaser shall pay to Supplier a fixed fee plus a variable percentage based on the Net Sales (to be defined in a manner analogous to the definition of Net Sales in the Collaboration Agreement, but with application of IFRS rules rather than GAAP) of the IVD [***], each as set forth in the table below.

Number of samples per chip	1	2	3	4	5	6
Fixed fee per sample (US$)	[***]	[***]	[***]	[***]	[***]	[***]
Variable percentage	[***]	[***]	[***]	[***]	[***]	[***]

For Commercial Chips in the Primary Field that are not used in an IVD [***], the price for such chips shall include a fixed fee equal to [***] per Commercial Chip plus an [***] non-refundable royalty on Commercial Chip Net Sales and an [***] non-refundable royalty on Liquid ASR Net Sales (to be defined in a manner analogous to the definition of Net Sales in the Collaboration Agreement, but with application of IFRS rules rather than GAAP).

If a lab that is a Novartis Affiliate is generating Results using Fluidigm Products, then solely for purposes of determining Net Sales under this Exhibit

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F and the Supply Agreement, Net Sales will be calculated based on sales of IVD [***], as applicable, by Novartis (or its Affiliate) to such lab (on an arm's length basis). The financial compensation to Fluidigm for the supply of Commercial Chips set forth herein is premised on the assumption that neither Novartis, nor any Novartis Affiliate to which Novartis assigns the Supply Agreement (nor any other successor to Novartis), will itself generate Results using Fluidigm Products, and therefore no provision is required or made for compensating Fluidigm based on such activities. If Novartis (or such Affiliate or successor) desires to generate Results using Fluidigm Products, the Parties shall negotiate and agree upon financial compensation to Fluidigm for such supply comparable to the financial compensation provided to Fluidigm for supply, as described herein.

Payment, recordkeeping, audit and related rights of Supplier and obligations of Purchaser will mirror the Collaboration Agreement provisions.

The prices for chips used in Tests in the Secondary Field shall be negotiated between Supplier and Purchaser at an appropriate time.

Supplier shall supply Fluidigm Instruments (including instrument software) to Purchaser at [***] below the previous [***].

Price Adjustments

If, after a successful proof of concept, Purchaser is unable to show commercial feasibility in models prior to commercial launch, then the parties shall enter into good faith negotiations to renegotiate the chip supply pricing.

The fixed fee for chips in the Primary Field shall be discounted based on sales of Commercial Chips by Supplier to Purchaser on the following schedule:

Yearly volume of chip sales	[***]	[***]	[***]	[***]	[***]	[***]	[***]
Volume discount off base fixed fee above	[***]	[***]	[***]	[***]	[***]	[***]	[***]

If there is no applicable Valid Claim within the Fluidigm Patents (other than the Collaboration Patents) covering the sale of the applicable product (IVD [***] as applicable) in the country of sale, then Purchaser and Supplier shall negotiate the fixed and variable (or non-refundable royalty) payments to Supplier (which rates shall be below the fixed and variable (royalty) rate that otherwise apply). Such principle shall also apply prior to expiration of the last to expire of any such Valid Claim and such reduced rates shall take effect immediately after such expiration.

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	If Purchaser needs to obtain, after the Effective Date of the Collaboration Agreement, an arms' length license from a Third Party to Exploit Fluidigm Technology in general regardless of specific assay (including the performance of digital PCR using the Fluidigm Products), *provided* that such Fluidigm Technology is incorporated or used in Licensed Products sold by Purchaser or by a Third Party, Purchaser shall be able to deduct [***] of Third Party royalties paid by Purchaser for a Licensed Product unit from the variable percentage (or non-refundable royalty) amount due to Supplier for the corresponding Product unit, *provided* that no variable percentage amount or non-refundable royalty payment by Purchaser for any Product unit shall be reduced by more than [***]. Any credits not exhausted with respect to any Product unit may not be used against any other payment payable to Supplier.
Payment terms	[***] days after the later of the delivery of the applicable order of conforming Product and the receipt of invoice for such Product.
Technology Transfer	In the case of a Failure to Supply a Product that establishes a right to use a Third Party supplier, Supplier shall provide technology transfer applicable to that Product to the agreed alternate supplier and shall cooperate and assist fully to effect such transfer.
Sale of Chips by Purchaser (other than as part of IVD [***])	Purchaser shall not Exploit, alone or with any third party, any Products outside the Primary Field or Secondary Field. If Purchaser sells Fluidigm Chips or Fluidigm Instruments to a Third Party, other than as part of an IVD [***], such Third Party shall not be licensed for use outside the Primary Field or Secondary Field, and the sale shall include a covenant of the buyer not to use the Product outside the Primary Field or Secondary Field.
Audit Right	Purchaser shall have the right to visit Supplier's sites (including sites of contract manufacturers, second source facilities and sites used to manufacture key components of the Products) to audit the manufacturing of Product, manufacturing and quality records, and Quality Systems of Supplier upon reasonable advance notice, during regular business hours. Without limitation of the foregoing, Purchaser shall have the right to audit any new manufacturing site (including sites at which critical components are manufactured) in connection with its qualification. Supplier shall ensure that its agreements with third party suppliers of Product and such components permit Purchaser to exercise the foregoing rights. Details to be set forth in the Supply and Quality Agreements. Supplier shall have audit rights equivalent to those of Purchaser in Section 6.4 of this Agreement.
Representations and Warranties	In addition to other customary representations and warranties to be agreed, the Supply Agreement shall include (a) warranties that as of the date on which the Fluidigm Products are delivered (i) they conform to specifications, (ii) their manufacture was conducted in accordance with Applicable Law and the terms of the Supply Agreement and related quality agreement, and (iii) they are not adulterated or misbranded (as defined by applicable law) and (b) only with respect to the first sale of such Fluidigm Product to Novartis, except as otherwise disclosed, a Knowledge representation as of the date on which the Fluidigm Products are delivered that the manufacture and sale of the Fluidigm

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	Products do not infringe any intellectual property rights of Third Parties.
Indemnification	Indemnification of Fluidigm parallel to Section 10.1 of the Collaboration Agreement. Indemnification of Novartis parallel to Section 10.2(a)(i) and (c) of the Collaboration Agreement, including for breach of the warranties described above. The Supply Agreement will address the allocation of responsibility for expenses associated with recalls caused by the failure of Fluidigm products to conform to the product warranties therefor. Indemnification obligations under the Supply Agreement would be capped (aggregated with License Agreement) based on amounts paid by Purchaser to Supplier during the preceding 12 months, except for (i) infringement, which would be allocated on a [***] basis, as described more fully in the License Agreement, subject to the limitations/exceptions set forth therein and (ii) (A) recklessness or intentional misconduct and (B) product liability (i.e., personal injury, death, or physical damage to tangible property), which liability is caused by non-conforming Fluidigm Products, which in each case ((A) and (B)) would not be capped.
Limitation of Liability	No lost profits or similar, except in the case of recklessness or intentional misconduct or pursuant to the indemnification provisions.
Governing Law	California
Other Terms	This list of key terms does not contain all of the terms that will be contained in the Supply Agreement.
Assignment	Supplier and Purchaser may each assign the Supply Agreement to an Affiliate without prior written consent of the other party or in connection with a permitted assignment of the License Agreement.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Schedule 11.2(d)

Owned Core Fluidigm Patents

Party Name	Reference No.	Title	Country	Filing Date	Application No.	Status
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Party Name	Reference No.	Title	Country	Filing Date	Application No.	Status
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]

*   No foreign filing planned
***   To be filed in EPO & SG only.

[***]   Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Party Name	Reference No.	Title	Country	Filing Date	Application No.	Status
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]	[***]	[***]
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]		
Fluidigm Corporation (FLUIDIGM)	[***]	[***]	[***]	[***]		

* No foreign filing planned
** To be filed in EPO only.
**** Undetermined but foreign filing in EPO likely.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Schedule 11.2(d)

In-Licensed Core Fluidigm Patents

Party Name	Reference No.	Title	Country	Filing Date	Application No.	Status
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]	[***]	[***]

***** Fluidigm’s rights (including prosecution rights) have been sublicensed to Artemis Health with respect to sequencing.
† Field co-exclusive.
†† Field exclusive.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

Schedule 11.2(d)

Core Fluidigm In-License Agreements

	Agreement	Date	Grant
[***]	[***]	[***]	[***]
	[***]		
	[***]	[***]	
[***]	[***]	[***]	[***]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

EXHIBIT 10.22

CONFIDENTIAL TREATMENT REQUESTED BY FLUIDIGM CORPORATION

LICENSE AGREEMENT

by and between

NOVARTIS VACCINES & DIAGNOSTICS, INC.

and

FLUIDIGM CORPORATION

DATE: [_____]

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

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LICENSE AGREEMENT

THIS LICENSE AGREEMENT (this "**Agreement**") is made and entered into effective as of _____, (the "**Effective Date**"), by and between NOVARTIS VACCINES AND DIAGNOSTICS, INC., a Delaware corporation, with offices at 4560 Horton Street, Emeryville, CA 94608 ("**Novartis**"), and FLUIDIGM CORPORATION, a Delaware corporation with offices at 7000 Shoreline Court, Suite 100, South San Francisco, CA 94080 ("**Fluidigm**").

RECITALS

WHEREAS, Novartis and Fluidigm entered into the Collaboration Agreement (as defined below), under which Fluidigm granted Novartis an exclusive option to enter into this Agreement to exclusively license Novartis the Fluidigm Patents and Fluidigm Know-How (each as defined below), including any Collaboration Know-How and Collaboration Patents solely or jointly owned by Fluidigm (each as defined below), to exploit the Novartis Licensed Products in the Primary Field and Secondary Field (each as defined below) on the terms and conditions set forth herein and in the Ancillary Agreements (as defined below); and

WHEREAS, Novartis has exercised such exclusive option to obtain such exclusive license;

NOW, THEREFORE, in consideration of the foregoing premises, the mutual promises and covenants of the parties contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, do hereby agree as follows:

ARTICLE I
Definitions

Unless otherwise specifically provided herein, the following terms shall have the following meanings:

"Affiliate" shall mean, with respect to a party, any Person that, directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with such party. For purposes of this definition, "control" and, with correlative meanings, the terms "controlled by" and "under common control with" shall mean (a) the possession, directly or indirectly, of the power to direct the management or policies of such a Person, whether through the ownership of voting securities, by contract relating to voting rights or corporate governance, or otherwise, or (b) the ownership, directly or indirectly, of more than fifty percent (50%) of the voting securities or other ownership interest of such Person.

"Ancillary Agreement" shall mean the Collaboration Agreement, the Supply Agreement, and any other agreement (including any development quality agreement or supply quality

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agreement) entered into pursuant to this Agreement, the Supply Agreement or the Collaboration Agreement.

"Applicable Law" shall mean the applicable laws, rules, regulations, including any rules, regulations, guidelines, or other requirements of any applicable regulatory authorities, that may be in effect from time to time in the Territory.

"ASR" shall mean an analyte specific reagent, including nucleic acid sequences, or similar reagent which, through specific binding or chemical reaction with substances in a specimen, is intended for use in a Test.

"Change of Control" shall mean the occurrence of any of the following events: (a) any Person acquires, either directly or indirectly, (i) at least fifty percent (50%) of the then-outstanding shares of common stock of Fluidigm or any direct or indirect parent of Fluidigm or (ii) securities of Fluidigm or any direct or indirect parent of Fluidigm entitled to cast at least fifty percent (50%) of the votes that may be cast in an election of directors of Fluidigm or such parent; (b) a reorganization, merger or consolidation with a Person to which Fluidigm or any direct or indirect parent of Fluidigm is a party, unless, after the occurrence of such reorganization, merger or consolidation, Fluidigm's or such direct or indirect parent of Fluidigm's outstanding common stock immediately prior to the effectiveness of such transaction constitutes or is converted into securities of the surviving company entitled to cast a majority of the votes that may be cast in an election of directors of the surviving company; (c) a sale or transfer of all or substantially all of Fluidigm's or any direct or indirect parent of Fluidigm's assets to a Person; or (d) a liquidation or dissolution of Fluidigm or any direct or indirect parent of Fluidigm.

"Collaboration Activities" shall mean those tests, studies and other activities set forth in, or performed in order to obtain the information set forth in the Collaboration Plan and such other tests, studies and other activities as may be agreed upon from time to time by the JSC (as defined in the Collaboration Agreement).

"Collaboration Information and Inventions" shall mean any and all Information and Inventions that are (a) in the case of inventions, conceived or (b) in all other cases, developed or made, in each case ((a) and (b)) by or on behalf of either party (or its Affiliates or subcontractors) or jointly by or on behalf of one party (or its Affiliates or subcontractors) and the other party (or its Affiliates or subcontractors) in the performance of or pursuant to the Collaboration Plan or otherwise in the performance of any Collaboration Activities. "Collaboration Information and Inventions" shall not, however, include any Information and Inventions that are (i) in the case of inventions, conceived, or (ii) in all other cases, developed or made, in each case ((i) and (ii)) by or for a party (or its Affiliates or subcontractors) prior to the effective date of the Collaboration Agreement or after such date and solely outside the performance of the Collaboration Activities ("Excluded Information and Inventions"). (For example, Excluded Information and Inventions developed prior to the effective date of the Collaboration Agreement and incorporated into Collaboration Information and Inventions shall not thereby become Collaboration Information and Inventions, and, similarly, Collaboration

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Information and Inventions incorporated into Information and Inventions developed after termination of the Collaboration Agreement shall not cause such later-developed Information and Inventions to be Collaboration Information and Inventions).

"Collaboration Know-How" shall mean all Collaboration Information and Inventions that are not generally known, but excluding any Collaboration Information and Inventions to the extent claimed by a Collaboration Patent.

"Collaboration Patents" shall mean any Patents to the extent that they claim any Collaboration Information and Inventions. For the avoidance of doubt, "Collaboration Patents" shall not include any Patents existing prior to the effective date of the Collaboration Agreement (or any resulting Patent rights), nor any Patents to the extent claiming inventions within the Excluded Information and Inventions.

"Collaboration Plan" shall mean that certain project plan established under the Collaboration Agreement, as such plan is amended from time to time in accordance with such agreement.

"Confidential Information" of a party shall mean all Information and Inventions and other confidential information and data of a financial, commercial or technical nature which the disclosing party or any of its Affiliates has supplied or otherwise made available to the other party or its Affiliates, whether made available orally, visually (e.g., by access to facilities or property), in writing or in electronic form, and whether before, on or after the Effective Date, including information comprising or relating to concepts, discoveries, inventions, data, designs or formulae in relation to this Agreement.

"Control" shall mean, with respect to any item of Information and Inventions, Patent, or other intellectual property right, possession of the right, whether directly or indirectly, and whether by ownership, license or otherwise, to assign, or grant a license, sublicense or other right to or under, such Information and Inventions, Patent, or right without violating the terms of any agreement or other arrangement with any Third Party.

"Core Fluidigm Know-How" shall mean Fluidigm Know-How required to practice the inventions as claimed in the Core Fluidigm Patents.

"Core Fluidigm Patents" shall mean, for Patents set forth on Schedule 9.2(c), those certain claims covering Core Fluidigm Technology and, after the Effective Date, any additional Fluidigm Patents covering the Core Fluidigm Technology that the parties agree in writing shall constitute Core Fluidigm Patents, such agreement by Fluidigm not to be unreasonably withheld.

"Core Fluidigm Technology" shall mean the Fluidigm Technology (a) constituting Fluidigm Chips and other chips manufactured by Fluidigm specifically for conducting digital PCR, (b) directed to the use of the chips specified in clause (a) hereinabove for conducting digital PCR in the Primary Field or Secondary Field, (c) constituting the Fluidigm Instrument(s)

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for conducting digital PCR using the chips specified in section (a) herein, (d) directed to the use of such Fluidigm Instrument(s) for conducting digital PCR, or (e) for conducting digital PCR specifically in the Primary Field or Secondary Field. ***[Note: If needed, definition to be updated prior to execution of the License Agreement to reflect then-current anticipated product design.]***

"Exploit" or "Exploitation" shall mean to make, have made, import, export, use, sell, offer for sale, or otherwise dispose of, including all discovery, research, development, registration, modification, enhancement, improvement, manufacture, storage, formulation, exportation, transportation, distribution, promotion and marketing activities related thereto.

"Fluidigm Chip" shall mean [***] and any Improvements thereto developed by or on behalf of Fluidigm or any of its Affiliates during the term of this Agreement or the Collaboration Agreement. "Fluidigm Chip" includes any additional buffers and reagents (excluding assay reagents) and other consumables (e.g., oils) required for operation of the applicable chip and that are customarily provided by Fluidigm with the sale of its chips.

"Fluidigm Instrument" shall mean that certain Fluidigm digital PCR/digital array chip reader instrument system (including software required to run the instrument and to conduct the applicable analysis) currently sold by Fluidigm, as further described in the Collaboration Agreement, including any Improvements to such instrument (including such software) developed by or on behalf of Fluidigm or any of its Affiliates during the term of this Agreement or the Collaboration Agreement.

"Fluidigm Know-How" shall mean all Information and Inventions Controlled by Fluidigm or an Affiliate of Fluidigm at any time during the term of the Collaboration Agreement (or during the term of this Agreement) including the Fluidigm Method, Fluidigm Technology, and Collaboration Information and Inventions solely owned by Fluidigm, that are not generally known and are reasonably necessary or useful for, or otherwise related to, the Exploitation of any Novartis Licensed Products (including generating results from Tests, but excluding the manufacture of Fluidigm Technology except in the case of the exercise by Novartis of its rights under the Supply Agreement in the case of a Failure to Supply (as defined in the Supply Agreement)) in the Primary Field and the Secondary Field, but excluding any Information and Inventions to the extent claimed by one or more of the Fluidigm Patents.

"Fluidigm Method" shall mean the Fluidigm Know-How and the inventions claimed in the Fluidigm Patents, in each case, that relate to non-invasive prenatal and pregnancy related diagnostics using digital PCR and cell-free DNA in maternal blood, urine, saliva, bloodspot or stool in the Primary Field or Secondary Field.

"Fluidigm Patents" shall mean all Patents Controlled by Fluidigm or an Affiliate of Fluidigm at any time during the term of the Collaboration Agreement or this Agreement, including any Patents claiming (a) the Fluidigm Method or the Fluidigm Technology, or (b) any Collaboration Information and Inventions that are solely owned by Fluidigm, in each case that

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are reasonably necessary or useful for, or otherwise related to, the Exploitation (but excluding the manufacture of Fluidigm Technology except in the case of the exercise by Novartis of its rights under the Supply Agreement in the case of a Failure to Supply (as defined in the Supply Agreement)) of any Novartis Licensed Products, including the generation of results from Tests, in the Primary Field and the Secondary Field. The "Fluidigm Patents" shall include (i) all Patents listed in Exhibit A, (ii) all patents issuing on such patent applications, and any divisionals, continuations, continuations-in-part, reissues, reexaminations, extensions, substitutions, registrations, additions, confirmations and renewals of such patents and patent applications, including any patents and patent applications that claim priority to a common priority document in the priority chain of any of the foregoing, (iii) supplemental protection certificates and the like relating to any of the foregoing, and (iv) counterparts or substantial equivalents of any of the foregoing in any country.

"Fluidigm Products" shall mean the Fluidigm Chips and the Fluidigm Instruments, collectively.

"Fluidigm Technology" shall mean Fluidigm's current digital PCR and associated chips, including the Fluidigm Chips, and digital array chip reader instrument system, including the Fluidigm Instruments, including Improvements to any of the foregoing and any other technology that Fluidigm Controls at any time during the term of the Collaboration Agreement relating to or applicable in the Primary Field or Secondary Field.

"Improvement" shall mean (a) any modification, variation or revision to Fluidigm Technology, including Fluidigm Instruments and Fluidigm Chips, as they existed on the effective date of the Collaboration Agreement, or (b) inventions for which patent applications are or may be filed that incorporate or expand on the Fluidigm Patents claiming Fluidigm Technology, including Fluidigm Instruments and Fluidigm Chips, as they existed on the effective date of the Collaboration Agreement.

"Indemnified Party" shall mean a party, its Affiliates or its or their respective directors, officers, employees, agents, partners and shareholders seeking to recover a Loss under ARTICLE VIII.

"Indemnifying Party" shall mean a party from whom recovery of a Loss is sought under ARTICLE VIII.

"Information and Inventions" shall mean all technical information, know-how and data (including clinical, analytical, and quality control data), inventions (whether patentable or not), discoveries, trade secrets, specifications, instructions, processes, formulae, materials, expertise and other technology applicable to diagnostics, formulations, compositions, products or to their manufacture, research, development, registration, use or commercialization or methods of assaying or testing them or processes for their manufacture, formulations containing them, compositions incorporating or comprising them, kits incorporating or comprising them, and including all biological, chemical, pharmacological, biochemical, toxicological, pharmaceutical,

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physical and analytical, safety, quality control, manufacturing, preclinical and clinical data, instructions, processes, formulae, expertise and information relevant to the research, development, manufacture, use or commercialization of or which may be useful in studying, testing, development, production or formulation of products, but excluding the Regulatory Documentation.

"IVD[***]" shall mean an in vitro diagnostic product [***].

"Knowledge" of a party shall mean such party's and its Affiliates' best knowledge of the facts and information after due inquiry and performing a diligent investigation with respect to such facts and information. "Known" to a party shall have a corresponding meaning.

"Novartis Licensed Products" shall mean [***].

"Patents" shall mean (a) patents and patent applications, (b) all patents issuing on such patent applications, and any divisionals, continuations, continuations-in-part, reissues, reexaminations, extensions, substitutions, registrations, additions, confirmations and renewals of such patents and patent applications, including any patents and patent applications that claim priority to a common priority document in the priority chain of any of the foregoing, (c) supplemental protection certificates and the like relating to any of the foregoing, and (d) counterparts or substantial equivalents of any of the foregoing in any country.

"Person" shall mean an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, unincorporated association, joint venture or other similar entity or organization, including a government or political subdivision, department or agency of a government.

"Primary Field" shall mean the Testing of fetal aneuploidies of a fetus in a pregnant woman.

"Primary Field Competitor" shall mean a Person that is commercializing (including promoting, selling, offering for sale or otherwise commercially distributing) (a) the reporting of a result of any test for a fee or (b) an IVD [***], in each case in the Primary Field.

"Regulatory Documentation" shall mean all applications, registrations, licenses, authorizations and approvals (including all regulatory approvals), all correspondence submitted to or received from regulatory authorities (including minutes and official contact reports relating to any communications with any regulatory authority) and all supporting documents and all clinical studies and tests, relating to any Novartis Licensed Product, and all data contained in any of the foregoing, including any and all investigational new device exemptions, 510K notifications (if required) or premarket approvals (if required) within the meaning of the United States Federal Food, Drug, and Cosmetic Act, as amended from time to time, and the regulations promulgated thereunder, and any corresponding foreign application, registration or certification,

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to market a Novartis Licensed Product in the Territory, and manufacturing records maintained pursuant to the Supply Agreement.

"Secondary Field" shall mean the Testing of (a) a genetic abnormality, disease or condition in a fetus or in a pregnant woman as associated with her pregnancy (other than that Tested in the Primary Field), (b) the RhD genotyping or carrier status in a pregnant woman, or (c) the genetic carrier status of a prospective mother-to-be and her male partner or donor, as the case may be.

"Side Letter" shall mean that certain disclosure letter provided by Fluidigm's designated counsel to Novartis' designated counsel on or before the Effective Date.

"Supply Agreement" shall mean that certain supply agreement entered into pursuant to the Collaboration Agreement.

"Territory" shall mean the entire world.

"Test" shall mean any non-invasive (including human blood, urine, saliva, bloodspot or stool) screening, diagnostic, prognostic, predictive or other clinical test. "Testing" shall have a corresponding meaning.

"Third Party" shall mean any Person other than Novartis, Fluidigm and their respective Affiliates.

"Trademark" shall include any word, name, symbol, color, designation or device or any combination thereof, including any trademark, trade dress, brand mark, trade name, brand name, logo or business symbol.

"Valid Claim" shall mean, with respect to any country, a claim of an issued and unexpired patent in such country which patent has not been held unenforceable, unpatentable or invalid by a decision of a court or other governmental agency of a competent jurisdiction, unappealable or unappealed within the time allowed for appeal, and which patent has not been admitted to be invalid or unenforceable through reissue, disclaimer or otherwise.

ARTICLE II
Exploitation of Novartis Licensed Products

2.1 Development and Commercialization. Subject to the terms of this Agreement and the Ancillary Agreements (including Fluidigm's rights and obligations under the Collaboration Agreement with respect to the Collaboration Activities), Novartis shall have the sole right to conduct and decide all matters with respect to the development (except as otherwise provided in the Collaboration Agreement) and commercialization of the Novartis Licensed Products (including conduct of clinical trials, distribution, pricing and selection and use of trademarks) in the Primary Field and Secondary Field in the Territory. Notwithstanding the foregoing, Novartis shall use at least commercially reasonable efforts to develop and

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commercialize Novartis Licensed Products in the Primary Field consistent with Novartis' typical development and commercialization of similar products with similar market potential and at similar stages in development and commercialization. If Novartis does not use commercially reasonable efforts to launch a Novartis Licensed Product in any of China, India, Hong Kong, Korea, Singapore or Taiwan, then all rights granted to Novartis by Fluidigm, to the extent reasonably required to effect commercialization of such Novartis Licensed Product in such country, shall revert back to Fluidigm (i.e., the licenses granted hereunder to Novartis and Novartis' rights under the Supply Agreement shall become co-exclusive with Fluidigm with respect to commercialization of such Novartis Licensed Product in such country, and for clarity Novartis shall retain the right to otherwise Exploit (in the case of manufacturing, only to the extent that Novartis is permitted to manufacture under this Agreement and the Supply Agreement) such Novartis Licensed Product in such country in order to develop and commercialize such Novartis Licensed Product in the countries retained by Novartis). Such reversion shall not be effected unless and until Fluidigm provides written notice to Novartis of its intent to effect such reversion of such rights and provides Novartis a period of one year, from the time of such notice, to cure such deficiency and Novartis does not do so within such period. In the case of such a reversion, for clarity, (i) royalties may be due to Novartis, as set forth in the Collaboration Agreement; and (ii) notwithstanding this co-exclusivity, Fluidigm (and its Affiliates) shall be entitled to Exploit all products and services subject to such co-exclusivity, itself or with or through (sub)licensees, commercialization partners, distributors, or other Third Parties.

2.2 Regulatory Matters. Subject to the terms of this Agreement and the Ancillary Agreements, Novartis shall have the sole right to develop and implement the appropriate strategy for obtaining and maintaining regulatory approval for all Novartis Licensed Products in the Primary Field and the Secondary Field in the Territory. All marketing authorizations (if any) and other filings, applications or requests pursuant to or in connection with such regulatory approval for such Novartis Licensed Products in the Primary Field and the Secondary Field in the Territory shall be made in the name of Novartis or its designee, unless Applicable Law requires that a regulatory approval be solely or jointly in the name of Fluidigm (or its Affiliates), in which case such filing, application or request shall be made in the name of Fluidigm (or its Affiliates) solely or jointly with Novartis, as permitted by Applicable Law and as Novartis elects. With respect to any such filing, application or request made in the name of Fluidigm, and any such regulatory approval resulting therefrom, upon written request by Novartis, Fluidigm shall, or shall cause its Affiliates to, as applicable, assign such regulatory approval to Novartis and take such further actions to effect such assignment to the extent permitted by Applicable Law. Novartis shall have the sole right to conduct all communications with applicable regulatory authorities with regard to regulatory approvals relating to the Novartis Licensed Products in the Primary Field and the Secondary Field.

2.3 Adverse Events and Recalls.

(a) Each party shall maintain a record of any and all complaints it receives with respect to the Novartis Licensed Products. Each party shall notify the other party

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in reasonable detail of any complaint received by it within twenty-four (24) hours after the event, and in any event in sufficient time to allow the applicable party to comply with all Applicable Laws in any country in the Territory. Fluidigm shall provide Novartis with all information necessary or desirable for Novartis to comply with Novartis' and its Affiliates' safety-related responsibilities under Applicable Law in the Territory with respect to any unanticipated adverse device events relating to the Novartis Licensed Products, in each case in the form reasonably requested by Novartis in writing.

(b) If any regulatory authority issues or requests a recall or takes similar action in connection with the Novartis Licensed Product(s) in the Primary Field or the Secondary Field in the Territory, or if Novartis determines that an event, incident or circumstance has occurred that may result in the need for a recall or market withdrawal, Novartis shall promptly advise Fluidigm thereof by telephone or facsimile.

2.4 Cooperation and Assistance. Fluidigm shall, and shall cause its Affiliates to, without additional compensation, disclose and make available to Novartis, as reasonably requested by Novartis and required for Novartis to exercise its rights or perform its obligations under this Agreement using the Core Fluidigm Technology, in whatever form Novartis may reasonably request, the Fluidigm Know-How and Collaboration Information and Inventions and any Regulatory Documentation relating to the Fluidigm Technology or the Primary Field or Secondary Field as Novartis may specifically request. Fluidigm shall cooperate reasonably with requests for assistance from Novartis specifically pertaining to the Exploitation of any Novartis Licensed Product, and regulatory processes with respect thereto, including by making Fluidigm's and its Affiliates' employees, consultants and other scientific staff reasonably available upon reasonable notice during normal business hours at their respective places of employment to consult with Novartis on issues arising with respect to such Exploitation, provided that any such cooperation or assistance that is provided pursuant to this Section 2.4 when there is no collaboration or development agreement in effect between the parties, shall be charged by Fluidigm at its then current standard FTE rates (but for clarity, Fluidigm may not charge pursuant to this Section 2.4 for any cooperation or assistance that it is required to provide under the Supply Agreement).

2.5 Escrow. Promptly upon execution of this Agreement and then upon product design lock down for the Fluidigm Chip and Fluidigm Instrument and software that will be used for each of the Novartis Licensed Products anticipated to be commercialized and from time to time thereafter as needed to ensure that the information escrowed pursuant to this Section 2.5 accurately reflects the then-current manufacturing process for such products, Fluidigm shall deposit into an escrow account, under an escrow agreement, with a Third Party mutually agreed upon by the parties Fluidigm Know-How, including documentation of the manufacturing processes, procedures and methods and related Fluidigm Know-How, that is reasonably necessary or useful for Novartis (or its designee) to manufacture the foregoing products using the then-current manufacturing process therefor. Novartis or its Third Party designee shall have the right to access such documents with respect to any such product solely in the event of a Failure to Supply (as defined in the Supply Agreement) with respect to such product to assist Novartis in

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establishing a Third Party supplier for such product as permitted under the Supply Agreement. Novartis shall be solely responsible for any amounts due to such Third Party escrow agent pursuant to or in connection with such escrow agreement for so long as Novartis, in its sole discretion during the term of this Agreement, elects to have such escrow account remain in place.

ARTICLE III
License Grants and Related Matters

3.1 Grants to Novartis.

(a) IP License Grants and Right of Reference. Subject to Section 3.2 and the other terms and conditions of this Agreement, Fluidigm hereby grants to Novartis:

(i) an exclusive (including with regard to Fluidigm and its Affiliates, but subject to clause (iii) of this Section 3.1(a)) perpetual (except as set forth in ARTICLE VII), royalty-free (except as set forth in Section 7.5), irrevocable (except as set forth in ARTICLE VII) right and license, with the right to grant sublicenses pursuant to Section 3.1(b), under Fluidigm's and its Affiliates' rights, titles, and interests in and to the Fluidigm Patents and Fluidigm Know-How, including its and its Affiliates' rights, titles, and interests to the Collaboration Patents and Collaboration Know-How, to Exploit the Novartis Licensed Products in the Primary Field and Secondary Field in the Territory.

(ii) an exclusive (including with regard to Fluidigm and its Affiliates, but subject to clause (iii) of this Section 3.1(a)), perpetual (except as set forth in ARTICLE VII), royalty-free, irrevocable (except as set forth in ARTICLE VII) right and license and right of reference, with the right to grant sublicenses pursuant to Section 3.1(b), under Fluidigm's and its Affiliates' rights, titles and interests in and to any regulatory approval Controlled by Fluidigm or its Affiliates, to Exploit the Novartis Licensed Products in the Primary Field and Secondary Field in the Territory.

(iii) Notwithstanding anything in clauses (i) and (ii) of this Section 3.1(a), (A) notwithstanding the exclusivity of the licenses to Novartis in such clauses (i) and (ii), with respect to the Secondary Field Fluidigm shall be entitled to engage in the activities permitted under Section 3.2; and (B) Novartis shall not manufacture (or have manufactured) any Fluidigm Products, and the licenses granted to Novartis shall not include any such right to manufacture (or have manufactured) any Fluidigm Products, nor any claims of Fluidigm Patents or Collaboration Patents solely owned by Fluidigm solely directed to such manufacturing, except if, as and when specifically permitted by this Agreement or the Supply Agreement, and in each case ((i) and (ii)), Fluidigm shall in any event retain the non-exclusive right to perform its responsibilities and exercise its rights under this Agreement and the Ancillary Agreements.

(b) Sublicenses. Novartis shall have the right to grant sublicenses (or further rights of reference), through multiple tiers of sublicensees, under the licenses and rights of reference granted in clause (a) of this Section 3.1, to its Affiliates and to any other Persons.

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Novartis shall ensure that all Persons to which it grants any such sublicenses comply with all applicable confidentiality obligations, as well as the same restrictions on field of use, manufacturing and resale, as are applicable to Novartis as set forth herein or in the Supply Agreement. (Novartis may also engage distributors, which, for clarity, shall not constitute sublicensees unless such distributor is granted such a sublicense by Novartis.)

(c) Additional Fluidigm Technology. If Novartis desires to use any Fluidigm Technology other than the Fluidigm Products to develop and commercialize a Test in the Primary Field or the Secondary Field, Novartis shall have the right to automatically include such Fluidigm Technology (including any chips and instruments constituting the Fluidigm Technology) in the licenses granted in this Section 3.1 upon written notice to Fluidigm, subject to the terms of this Agreement and any collaboration or development agreement that may be entered into by the parties in connection therewith. In such event, the parties shall amend the Supply Agreement so that such Fluidigm Technology may be supplied to Novartis, which amendment shall include reasonable compensation to Fluidigm for such supply.

(d) No Other Rights. Novartis shall have no rights, express or implied, under the Fluidigm Patents or Fluidigm Know-How, other than those granted in this Section 3.1 or any Ancillary Agreement.

3.2 Non-Compete and Related Matters. During the term of and subject to the terms and conditions of this Agreement (including Section 2.1), Fluidigm covenants that, except for the performance of Fluidigm's Collaboration Activities and the performance of Fluidigm's obligations under this Agreement or any Ancillary Agreement, it and its Affiliates shall not (a) Exploit any product or service in the Primary Field or Secondary Field (other than the conduct of research, and the sale and other disposal (including manufacture, storage, exportation, transportation, distribution, promotion and marketing activities related thereto) of products for conducting research, in the Secondary Field, which research shall not include providing clinical results for a fee or for use in the medical management of a patient (such permitted activities in the Secondary Field, "**Secondary Field Research Activities**"), which Secondary Field Research Activities may be conducted by Fluidigm notwithstanding the exclusivity of the licenses granted to Novartis pursuant to Section 3.1), (b) conduct any activity with, for the benefit of, or sponsored by, any Person, that has as its goal or intent Exploiting any product or service in the Primary Field or Secondary Field, or (c) grant any license or other rights to any Person to utilize any intellectual property Controlled by Fluidigm or its Affiliates (including any Fluidigm Patents, Fluidigm Know-How, Collaboration Patents or Collaboration Know-How) to Exploit any product or service in the Primary Field or Secondary Field (other than licenses to Third Parties to conduct Secondary Field Research Activities, which licenses Fluidigm shall be entitled to grant (and authorize Third Parties to grant) notwithstanding the exclusivity of the licenses granted to Novartis pursuant to Section 3.1). Fluidigm acknowledges that the restrictions contained in this Section 3.2 are reasonable, valid and necessary for the adequate protection of the Novartis Licensed Products business in the Primary Field and Secondary Field and that Novartis would not have entered into this Agreement without the protection afforded to it by this Section 3.2. Notwithstanding the foregoing, Fluidigm may grant,

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in connection with the sale of the Fluidigm Technology, a restricted research only license to use Fluidigm Technology and Fluidigm Know-How and Fluidigm Patents (including the Fluidigm Method), and all Collaboration Information and Inventions owned solely or jointly by Fluidigm and Collaboration Patents owned solely or jointly by Fluidigm, in the Primary Field to academic institutions for research purposes only, including in connection with the commencement of new research studies or maintenance of existing research studies (which existing research studies Fluidigm has disclosed to Novartis prior to the effective date of the Collaboration Agreement), *provided* that Fluidigm obtains Novartis' prior written consent to the terms of the new agreements with such academic institutions, which consent shall not be unreasonably withheld. In no event shall Fluidigm grant to any academic collaborator access to or rights to use Fluidigm Technology or the Fluidigm Method in the Primary Field or Secondary Field to provide a result that will be used in the medical management of a patient or to report the result of any Test for a fee. It is understood and agreed that, prior to the effective date of the Collaboration Agreement, Fluidigm has granted, in connection with and solely for the use of Fluidigm products shipped prior to the effective date of the Collaboration Agreement for research use only, licenses for research purposes only that do not prohibit use of such products for such research purposes in the Primary Field or Secondary Field, which licenses are ongoing, and that this does not and shall not constitute a breach of this section. For the avoidance of doubt, Fluidigm may grant, in connection with the sale or other transfer of the Fluidigm Technology, licenses to use Fluidigm Technology and Fluidigm Know-How and Fluidigm Patents (including the Fluidigm Method), and all Collaboration Information and Inventions owned solely or jointly by Fluidigm and Collaboration Patents owned solely or jointly by Fluidigm, outside the Primary Field and Secondary Field without restriction (but without limitation of the right of first negotiation set forth in Section 5.3 of the Collaboration Agreement or any royalties due under Section 6.2 or 9.5 of the Collaboration Agreement).

3.3 No Encumbrance. Fluidigm shall not (a) except as set forth in Section 10.2, assign, transfer, convey or otherwise encumber any of its rights to the Fluidigm Patents or Fluidigm Know-How, any regulatory approval relating to the Primary Field or Secondary Field, or any Regulatory Documentation relating to the Primary Field or Secondary Field, or (b) use any of the foregoing or grant any right, title or interest in or to any of the foregoing in each case ((a) and (b)) to any Person in a manner that is inconsistent with the exclusive licenses or other rights granted to Novartis under this Agreement or any Ancillary Agreement.

ARTICLE IV
Payments

4.1 License Fee. On or after the Effective Date, Fluidigm shall invoice Novartis for [***]. Novartis shall pay such amount to Fluidigm no later than thirty (30) days after the date on which Novartis receives such invoice.

4.2 Milestone Payment. Novartis shall pay Fluidigm [***] within sixty (60) days after (a) the combined Fluidigm Chip and Fluidigm Instrument has passed the Novartis manufacturing quality systems standard consistent with FDA QSR (21 CFR 820) and ISO 13485,

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and (b) Fluidigm has achieved quality milestones 1 through 5 as set forth in the Collaboration Plan; *provided, however,* that Novartis shall not be obligated to pay such amount if Fluidigm has breached, and does not cure, either that certain Development Quality Agreement entered into pursuant to the Collaboration Agreement or that certain Supply Quality Agreement entered into pursuant to the Supply Agreement. If there is a dispute concerning whether such standard or quality milestones have been met, the dispute shall be escalated to the Executives pursuant to Section 10.6. The responsibility for achieving this milestone is Fluidigm's, but Novartis shall use at least the same level of effort and diligence to determine if such Fluidigm Chip and Fluidigm Instrument passes such standards as Novartis uses for its own products. For clarity, such milestone payment shall be payable only once. Upon payment of such milestone, the licenses granted to Novartis under this Agreement shall be fully paid-up, but shall not affect any payment obligations of Novartis under any Ancillary Agreement.

4.3 Mode of Payment. All payments to Fluidigm under this Agreement shall be made by deposit of United States Dollars in the requisite amount to such bank account as Fluidigm may from time to time designate by notice to Novartis. Such bank account of Fluidigm as of the Effective Date is [***].

4.4 Taxes. The milestones and other amounts payable by Novartis to Fluidigm pursuant to this Agreement ("**Payments**") shall not be reduced on account of any taxes except as set forth herein. The party on whom any such tax is assessed alone shall be responsible for paying any and all such taxes (other than withholding taxes required by Applicable Law to be withheld and paid by Novartis) levied on account of, or measured in whole or in part by reference to, any Payments it receives. Novartis shall deduct or withhold from the Payments any such withholding taxes that it is required by Applicable Law to deduct or withhold. Notwithstanding the foregoing, if Fluidigm is entitled under any applicable tax treaty to a reduction of rate of, or the elimination of, applicable withholding tax, it may deliver to Novartis or the appropriate governmental authority (with the assistance of Novartis to the extent that this is reasonably required and is expressly requested in writing) the prescribed forms necessary to reduce the applicable rate of withholding or to relieve Novartis of its obligation to withhold tax, and Novartis shall apply the reduced rate of withholding, or dispense with withholding, as the case may be, *provided* that Novartis has received evidence, in a form satisfactory to Novartis, of Fluidigm's delivery of all applicable forms (and, if necessary, its receipt of appropriate governmental authorization) at least fifteen (15) days prior to the time that the Payments are due. If, in accordance with the foregoing, Novartis withholds any amount, it shall pay to Fluidigm the balance when due, make timely payment to the proper taxing authority of the withheld amount, and send to Fluidigm proof of such payment within sixty (60) days following that payment. For purposes of this Agreement, the stated amount of the Payments payable by Novartis shall not include any sales or similar tax that Fluidigm may be required to collect. For the avoidance of doubt, the parties acknowledge and agree that none of the payments payable under this Agreement are related to the license (or right) to import or any import of any Novartis Licensed Product.

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ARTICLE V
Intellectual Property Rights

5.1 Intellectual Property Ownership.

(a) Ownership of Fluidigm Intellectual Property. Subject to the license grants to Novartis herein and under the Ancillary Agreements, as between the parties, Fluidigm shall own and retain all right, title and interest in and to all Fluidigm Patents and Fluidigm Know-How, including any Collaboration Information and Inventions solely owned by Fluidigm (as set forth in the Collaboration Agreement).

(b) Ownership of Regulatory Documentation. Novartis shall own and retain all right, title and interest in and to all Regulatory Documentation (including regulatory approvals) with respect to Novartis Licensed Products in the Primary Field and Secondary Field in the Territory. Fluidigm shall promptly disclose to Novartis in writing, and shall cause its Affiliates to so disclose, any such Regulatory Documentation and the development of any such Regulatory Documentation, and shall, and does hereby, assign, and shall cause its Affiliates to so assign, to Novartis, without additional compensation, such right, title and interest in and to any such Regulatory Documentation as of the Effective Date and from time to time during the term of this Agreement, as is necessary to fully vest sole ownership in Novartis as provided for in the foregoing sentence.

5.2 Prosecution of Patents. Fluidigm, through patent attorneys or agents of its choice reasonably acceptable to Novartis, shall have the sole right, but not obligation, to prepare, file and maintain the Core Fluidigm Patents throughout the Territory. Schedule 9.2(c) specifies the countries in which Fluidigm has filed or intends to prepare and file applications for each Core Fluidigm Patent. Novartis shall have the right, on timely written notice to Fluidigm, to require Fluidigm to prepare and file an applications for Core Fluidigm Patents in any other particular country(ies), unless Fluidigm objects that such action would be unreasonable, including where taking such action could affect the scope, validity or enforceability of any Core Fluidigm Patent. Fluidigm shall prosecute and maintain the Core Fluidigm Patents, and applications therefor, in accordance with its customary, reasonable procedures therefor. Novartis shall have the right, on timely written notice to Fluidigm, to require Fluidigm to take additional reasonable actions with respect to such prosecution and maintenance, unless Fluidigm objects that such action would be unreasonable, including where taking such action could affect the scope, validity or enforceability of any Core Fluidigm Patent. All costs and expenses of all such additional Core Fluidigm Patent preparation, filing, prosecution and maintenance shall be reimbursed and borne solely by Novartis. Novartis shall, and shall cause its respective Affiliates to, as applicable, assist and cooperate with Fluidigm in filing, prosecuting and maintaining any Core Fluidigm Patent under this Section 5.2. Each party shall bear its own expenses under this Section 5.2. Fluidigm shall consult with Novartis as to the strategy and prosecution and maintenance of Core Fluidigm Patents and applications under this Section 5.2. Fluidigm shall cause its patent attorneys or agents to consult with Novartis (so far as practicable) on all issues relating to the filing, prosecution (including any interferences, reissue proceedings and re-

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examinations) and maintenance of the Core Fluidigm Patents. Fluidigm shall provide Novartis with sufficient opportunity to review and comment on the nature and text of new or pending applications, amendments, registrations, filing, submissions, pleadings, responses or correspondence with any patent authorities with respect to the Core Fluidigm Patents, and Fluidigm shall accede to reasonable requests of Novartis regarding the filing, registration and prosecution of the Core Fluidigm Patents. Fluidigm shall (A) notify Novartis as early as reasonably practicable in advance of all meetings and significant communications with any patent authorities concerning the Core Fluidigm Patents and shall permit Novartis to participate in such meetings, (B) promptly prepare and deliver to Novartis complete and accurate minutes of any such meeting or communications, and (C) promptly forward to Novartis copies of all office actions and written communications received from any patent authorities with respect to the Core Fluidigm Patents and upon receipt therefrom. Novartis shall have the right, at its sole expense, to make decisions regarding patent term extensions, including supplementary protection certificates and any other extensions that are available now or become available in the future on Novartis Licensed Products, wherever applicable, for the Core Fluidigm Patents, in any country. For any Core Fluidigm Patent owned by a Third Party, in whole or in part, (e.g., it is licensed to Fluidigm by a Third Party), Fluidigm shall use its reasonable best efforts to allow Novartis to exercise its rights under this Section 5.2, including (i) exercising its rights under any agreement with such Third Party, and (ii) obtaining any consents required by Third Parties owning Core Fluidigm Patents licensed to Fluidigm in order for Novartis to exercise its rights under this Section 5.2. If Fluidigm does not have or is unable to secure such rights from such Third Party despite such efforts, Novartis' rights under this Section 5.2 shall be limited to the extent of the rights of Fluidigm and its Affiliates with respect to such Core Fluidigm Patent.

5.3 Enforcement of Patents. If either party reasonably believes that a Third Party may be infringing any of the Core Fluidigm Patents or Collaboration Patents and such infringement relates to the Primary Field or Secondary Field in the Territory ("**Related Infringement**"), such party shall promptly notify the other party in writing, identifying the alleged infringer and the alleged infringement complained of and furnishing the information upon which such determination is based.

(a) Fluidigm shall have the first right, but not the obligation, through counsel of its choosing (reasonably acceptable to Novartis), to take any measures it deems appropriate to stop any Related Infringement of any Core Fluidigm Patent. If Fluidigm fails within ninety (90) days following notice of such infringement to take, or thereafter discontinues, or earlier notifies Novartis in writing of its intent not to take, commercially appropriate steps to remove any such Related Infringement that Novartis reasonably determines is likely to have a material adverse effect on the sale of the Novartis Licensed Products in the Primary Field or Secondary Field in the Territory, then, subject to the last sentence of this Section 5.3(a), Novartis shall have the right, but not the obligation, to do so through counsel of its choosing, but only with respect to Core Fluidigm Patent claims then licensed to Novartis; *provided*, *however*, that if Fluidigm has commenced negotiations with an alleged infringer for discontinuance of such infringement within such ninety (90) day period, Fluidigm shall have an additional ninety (90) days to conclude its negotiations before Novartis may bring suit for such infringement. For any

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Core Fluidigm Patent owned by a Third Party, in whole or in part, (e.g., it is licensed to Fluidigm by a Third Party), Fluidigm shall use its reasonable best efforts to allow Novartis to exercise its rights under this Section 5.3(a), including (i) exercising its rights under any agreement with such Third Party, (ii) taking action at the direction of Novartis in accordance with this Section 5.3(a) if Novartis itself is not permitted by such agreement to take such action directly, and (iii) obtaining any consents required by Third Parties owning Core Fluidigm Patents licensed to Fluidigm in order for Novartis to exercise its rights under this Section 5.3. If Fluidigm does not have or is unable to secure such rights from such Third Party despite such efforts, Novartis' rights under this Section 5.3(a) shall be limited to the extent of the rights of Fluidigm and its Affiliates with respect to such Core Fluidigm Patent.

(b) Novartis shall have the first right, but not the obligation, through counsel of its choosing (reasonably acceptable to Fluidigm), to take any measures it deems appropriate to stop any Related Infringement of any Collaboration Patent solely owned by Fluidigm or Collaboration Patents owned jointly by Fluidigm and Novartis. If Novartis fails within ninety (90) days following notice of such infringement to take, or thereafter discontinues, or earlier notifies Fluidigm in writing of its intent not to take, commercially appropriate steps to remove any such Related Infringement then, if Fluidigm reasonably determines that such Related Infringement is likely to have a material adverse effect on the sale of the Novartis Licensed Products, or on Fluidigm sales for research purposes that are not prohibited by this Agreement or any Ancillary Agreement, in the Primary Field or Secondary Field in the Territory, Fluidigm shall have the right, but not the obligation, to do so through counsel of its choosing; *provided, however*, that if Novartis has commenced negotiations with an alleged infringer for discontinuance of such infringement within such ninety (90) day period, Novartis shall have an additional ninety (90) days to conclude its negotiations before Fluidigm may bring suit for such infringement. If Fluidigm exercises such right, Fluidigm shall obtain the written consent of Novartis prior to settling or otherwise compromising such action, consent not to be unreasonably withheld.

On an ongoing basis, the party prosecuting an action with respect to a Related Infringement under this Section 5.3 (for purposes of this Section 5.3, the "**Prosecuting Party**") shall bear [***] of the costs and expenses of prosecuting the Related Infringement (including the costs and expenses of the other party in cooperating or participating in such prosecution), and the other party shall bear [***] of such costs and expenses, provided that the non-prosecuting party may elect at any time, on written notice to the Prosecuting Party, not to so share such costs and expenses, in which case the prosecuting Party shall thereafter bear all such costs and expenses. Upon reasonable request by the Prosecuting Party, the other party shall give the Prosecuting Party all reasonable information and assistance with respect to any action prosecuted by the Prosecuting Party under this Section 5.3 or any analogous action with respect to the Collaboration Patents solely owned by Novartis, including allowing the Prosecuting Party access to the other party's files and documents and to the other party's personnel who may have possession of relevant information and, if necessary for the Prosecuting Party to prosecute any legal action under this Section 5.3(b), and joining in the legal action as a party. Any recoveries obtained by the Prosecuting Party pursuant to this Section 5.3 shall be first used to reimburse

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each of Novartis and Fluidigm for its costs and expenses incurred by such party in securing such recoveries. Any remaining recoveries, after deducting such costs and expenses, shall be retained or paid, as applicable, as follows: the parties shall apportion such remaining recoveries in the same proportion as the parties were responsible for paying cost and expenses for that action.

5.4 Invalidity or Unenforceability Defenses or Actions. If a Third Party asserts, as a defense or as a counterclaim in any infringement action under Section 5.3, that any Core Fluidigm Patent, Collaboration Patent solely owned by Fluidigm or Collaboration Patent owned jointly by Fluidigm and Novartis is invalid or unenforceable, then the party pursuing such infringement action shall promptly give written notice to the other party. The party pursuing such infringement action shall have the first right, but not the obligation, through counsel of its choosing (reasonably acceptable to the other party), to respond to such defense or defend against such counterclaim (as applicable); *provided*, *however*, that such defending party shall obtain the written consent of the other party prior to settling or otherwise compromising such defense or counterclaim. If the party pursuing such infringement action determines not to respond to such defense or defend against such counterclaim (as applicable), the other party shall, at its sole cost and expense, respond to such defense or defend against such counterclaim (as applicable); *provided*, *however*, that such defending party shall obtain the written consent of the other party prior to settling or otherwise compromising such defense or counterclaim. If a Third Party asserts, in a declaratory judgment action or similar action or claim filed by such Third Party, that any Core Fluidigm Patent, Collaboration Patent solely owned by Fluidigm or Collaboration Patent owned jointly by Fluidigm and Novartis is invalid or unenforceable (and such action relates to the Primary Field or the Secondary Field), then the party first becoming aware of such action or claim shall promptly give written notice to the other party. Fluidigm shall have the first right, but not the obligation, through counsel of its choosing, to defend against such action or claim with respect to any Core Fluidigm Patent, and Novartis shall have the first right, but not the obligation, through counsel of its choosing, to defend against such action or claim with respect to any Collaboration Patent solely owned by Fluidigm or Collaboration Patent owned jointly by Fluidigm and Novartis (such party, as applicable, the "**Defending Party**"); *provided*, *however*, that the Defending Party shall obtain the written consent of the other party prior to settling or otherwise compromising such defense or counterclaim. If the Defending Party determines not to assume such defense, the other party shall, at its sole cost and expense, defend against such claim, suit or action (and shall thereupon become the "Defending Party," and the prior Defending Party shall become the "other party," with respect thereto); *provided*, *however*, that the Defending Party shall obtain the written consent of the other party prior to ceasing to defend, settling or otherwise disposing of any such claim, suit or action. Upon reasonable request by the Defending Party, the other party shall give the Defending Party all reasonable information and assistance with respect to any action defended by the Defending Party under this Section 5.4 or any analogous action with respect to the Collaboration Patents solely owned by the Defending Party, including allowing the Defending Party access to the other party's files and documents and to the other party's personnel who may have possession of relevant information and, if necessary for the Defending Party to defend any legal action under this Section 5.4, joining in the legal action as a party. Fluidigm shall use its reasonable best efforts to obtain any

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consents required by Third Parties owning Fluidigm Patents licensed to Fluidigm in order for Novartis, when acting as the Defending Party (or as the defending arty in a counterclaim or defense in any infringement action under Section 5.3, as described hereinabove), to defend against such claim, suit or action, but if Fluidigm is unable to obtain such consents, Novartis may not act as the Defending Party with respect to such Fluidigm Patents.

5.5 Infringement of Third Party Rights.

(a) Third Party Infringement. If, in the opinion of Novartis, the Exploitation of the Novartis Licensed Products in the Primary Field or Secondary Field infringes or misappropriates (or would infringe or misappropriate) any Patent or any other intellectual property right of a Third Party in any country, then Novartis shall have the first right, but not the obligation, through counsel of its choosing, to negotiate and obtain a license from such Third Party to Exploit the Novartis Licensed Products in the Primary Field or Secondary Field. If Novartis notifies Fluidigm that it declines to do so, or if Novartis fails to do so within a reasonable time following a request from Fluidigm, Fluidigm shall have the right to obtain such a license at its own expense.

(b) Third Party Litigation. If a Third Party institutes a Patent, or other intellectual property suit against either party or its Affiliates or sublicensees during the term of this Agreement, alleging that either party's Exploitation of the Novartis Licensed Products in the Primary Field or the Secondary Field infringes one or more Patent, Trademark, trade secret or other intellectual property rights held by such Third Party (an "**Infringement Suit**") then notwithstanding any control provisions set forth in ARTICLE VIII to the contrary, Novartis shall have the first right, but not the obligation, to assume direction and control of the defense of claims arising therefrom (including the right to settle such claims, subject to the prior written approval of Fluidigm, which shall not be unreasonably withheld), except in the case in which (i) the suit is against Fluidigm or its Affiliates or sublicensees and relates to a Novartis Licensed Product that none of Novartis, its Affiliates or sublicensees is then commercializing and (ii) Novartis does not have any obligation to indemnify any Fluidigm Party, in which case Fluidigm shall have the first such right (including the right to settle such claims, subject to the approval of Novartis, which shall not be unreasonably withheld). If the party with the first right under this clause (b) determines not to assume such direction and control, the other party may defend against such claims; *provided*, *however*, that such other party shall obtain the written consent of the first party prior to ceasing to defend, settling or otherwise disposing of such claims. Losses associated with such Infringement Suit shall be allocated in accordance with ARTICLE VIII or the indemnities set forth in the Collaboration Agreement or the Supply Agreement, in each case if applicable.

(c) Cooperation. If a Third Party institutes a Patent, or other intellectual property suit against either party or its Affiliates during the term of this Agreement, Fluidigm will promptly make available to Novartis, free of charge, all information in its possession or control that it is aware will assist Novartis in responding to any such action, claim or suit under this Section 5.5.

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(d) Retained Rights. Nothing in this Section 5.5 shall prevent either party, at its own expense, from obtaining any license or other rights from Third Parties it deems appropriate in order to permit the full and unhindered exercise of its rights under this Agreement.

ARTICLE VI
Confidentiality and Nondisclosure

6.1 Restricted Fluidigm Information. Fluidigm recognizes that Novartis has an interest in Fluidigm's retention in confidence of the Fluidigm Know-How and the Collaboration Know-How. Accordingly, until the expiration or termination of this Agreement, Fluidigm shall, and shall cause its Affiliates and their respective officers, directors, employees and agents to, keep completely confidential, and not publish or otherwise disclose (except as set forth below in this section), and not use for any purpose in the Primary Field or Secondary Field (except for uses expressly permitted under this Agreement or any Ancillary Agreement, which uses for clarity shall be subject to the restrictions on use set forth in this Agreement or any Ancillary Agreement) any Fluidigm Know-How relating to the Primary Field or Secondary Field or Collaboration Know-How (the "**Restricted Information**"); *provided* that the "**Restricted Information**" shall not include any Fluidigm Know-How or Collaboration Know-How to the extent (a) it is in the public domain through no fault of Fluidigm, its Affiliates or any of their respective officers, directors, employees or agents, (b) its disclosure or use by Fluidigm would be expressly permitted under Section 6.3 if it were Confidential Information of Novartis, or (c) its disclosure or use by Fluidigm is otherwise expressly permitted by the terms of this Agreement or any Ancillary Agreement. Fluidigm shall ensure that each of its and its Affiliates' employees is bound by a written confidentiality agreement that is comparable to the protection of the Restricted Information in the provisions set forth in this ARTICLE VI. Novartis shall ensure that each of its and its Affiliates' employees who is involved in the performance of Novartis' obligations or exercise of Novartis' rights under this Agreement or any Ancillary Agreement is bound by a written confidentiality agreement that is comparable to the protection of the Restricted Information in the provisions set forth in this ARTICLE VI. If Fluidigm becomes aware of any disclosure of any Restricted Information or Novartis Confidential Information in violation of this Agreement, Fluidigm shall promptly notify Novartis. If Novartis becomes aware of any disclosure of any Restricted Information or other Fluidigm Confidential Information in violation of this Agreement, Novartis shall promptly notify Fluidigm. For the avoidance of doubt, the treatment of Confidential Information that is also Restricted Information is governed by the terms of this Section 6.1 while the treatment of Confidential Information that is not also Restricted Information is governed by Section 6.2. Notwithstanding the above restriction on Fluidigm's disclosure of Restricted Information, to the extent any Restricted Information also applies to Fluidigm's business outside of the Primary Field or Secondary Field, Fluidigm shall be entitled to disclose Restricted Information in the normal course of, and under such terms as Fluidigm customarily requires in, such other Fluidigm business, including obligations of confidentiality comparable to the provisions set forth in this ARTICLE VI. For clarity, except (i) as set forth in this Agreement or any Ancillary Agreement with respect to Collaboration Know-How and Collaboration Patents, and (ii) as otherwise expressly set forth in this Agreement or any Ancillary Agreement, there are no restrictions on Fluidigm in this

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Agreement with respect to its Exploitation, outside of the Primary Field and the Secondary Field, of Fluidigm Methods, Fluidigm Patents, or any other Information and Inventions and intellectual property rights Controlled by Fluidigm.

6.2 Confidentiality Generally. At all times during the term of this Agreement and for the applicable confidentiality period specified herein below, each party (the "**Receiving Party**") shall, and shall cause its officers, directors, employees, agents, Affiliates and (sub)licensees to, keep confidential and not publish or otherwise disclose and not use, directly or indirectly, for any purpose, any Confidential Information provided to it by or on behalf of the other party (the "**Disclosing Party**"), except to the extent such disclosure or use is otherwise expressly permitted by the terms of this Agreement or is reasonably necessary for the performance of such party's obligations under this Agreement, or any Ancillary Agreement. Fluidigm shall ensure that each of its and its Affiliates' employees is bound by a written confidentiality agreement that is comparable to the protection of the Confidential Information of Novartis in the provisions set forth in this ARTICLE VI. Novartis shall ensure that each of its and its Affiliates' employees who is involved in the performance of Novartis' obligations or exercise of Novartis' rights under this Agreement or any Ancillary Agreement is bound by a written confidentiality agreement that is comparable to the protection of the Confidential Information of Fluidigm in the provisions set forth in this ARTICLE VI. The confidentiality period for regulatory information (e.g., clinical trial data) shall be seven (7) years following termination or expiration of this Agreement, and the confidentiality period for all other information shall be five (5) years following disclosure.

6.3 Permitted Disclosures. Each party may disclose Confidential Information of the other party to the extent that such disclosure is:

(a) made in response to a valid order of a court of competent jurisdiction or other competent authority; *provided*, *however*, that the Receiving Party shall first have given notice to the Disclosing Party and given the Disclosing Party a reasonable opportunity to quash any such order or obtain a protective order requiring that the Confidential Information and documents that are the subject of such order be held in confidence by such court or authority or, if disclosed, be used only for the purpose for which the order was issued; and *provided further* that if such order is not quashed or a protective order is not obtained, the Confidential Information disclosed in response to such court or governmental order shall be limited to that information that is legally required to be disclosed in response to such court or governmental order;

(b) made by Novartis or any of its Affiliates or sublicensees to a regulatory authority as may be necessary or useful in connection with any filing, application or request for regulatory approval; *provided*, *however*, that reasonable measures shall be taken to assure confidential treatment of such information, to the extent such protection is available;

(c) made by a party to a patent authority as may be reasonably necessary or useful for purposes of obtaining or enforcing a Patent (consistent with the terms and

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conditions of ARTICLE V); *provided*, *however*, that reasonable measures shall be taken to assure confidential treatment of such information, to the extent such protection is available;

(d) otherwise required by law; *provided*, *however*, that if either party is required to disclose Confidential Information of the other party, the party required to make the disclosure shall (i) provide to the other party reasonable advance notice of and an opportunity to comment on any such required disclosure, (ii) if requested by the other party, seek confidential treatment with respect to any such disclosure to the extent available, and (iii) use good faith efforts to incorporate the comments of the other party in any such disclosure or request for confidential treatment; or

(e) made by a party or its Affiliates or (sub)licensees to Third Parties as may be reasonably necessary in connection with its performance of its obligations or the exercise of its rights herein, including subcontracting or sublicensing transactions in connection therewith.

6.4 Exclusions. Notwithstanding the foregoing, Confidential Information shall not include any information that: (a) is or hereafter becomes part of the public domain by public use, publication, general knowledge or the like through no wrongful act, fault or negligence on the part of the Receiving Party; (b) can be demonstrated by documentation or other competent proof to have been in the Receiving Party's or its Affiliates' possession, without confidentiality restriction, prior to disclosure by the Disclosing Party; (c) is subsequently received by the Receiving Party or its Affiliates, without confidentiality restriction, from a Third Party or a (sub)licensee who is not bound by any obligation of confidentiality with respect to said information; (d) is generally made available to Third Parties by the Disclosing Party without restriction on disclosure; or (e) is independently developed by or for the Receiving Party or its Affiliates without reference to the Disclosing Party's Confidential Information or, as to Novartis as the Receiving Party, the Restricted Information.

6.5 Confidentiality of Terms of Agreement. The parties both agree that the terms of this Agreement are the Confidential Information of each party, and they each shall keep such terms confidential and not disclose this Agreement, except as otherwise provided herein. Notwithstanding the foregoing, the parties acknowledge and agree that either party may be required by Applicable Law (including by any court or other governmental body) to disclose this Agreement, or the terms hereof, in whole or in part, and in such case, such party shall notify the other party in writing and shall provide the other party with at least seven (7) business days to request redactions thereof prior to making such filing or disclosure. The Disclosing Party shall seek confidential treatment of any such proposed redactions timely made and use reasonable efforts to procure confidential treatment of such proposed redactions pursuant to the Securities Act of 1933 or the Securities Exchange Act of 1934, in each case as amended, and the rules, regulations and guidelines promulgated thereunder, or any other Applicable Law or the rules, regulations or guidelines promulgated thereunder, *but provided* that neither party shall unreasonably withhold its consent in a manner that would prevent the other party from making such public disclosures as it, on advice of counsel, must make to comply with Applicable Law.

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In addition, each party shall be entitled to disclose the terms of this Agreement under obligations of confidentiality comparable to those set forth in this Agreement (a) to legal counsel of the parties, accountants, and other professional advisors; (b) banks, investors and other financing sources; or (c) to Third Parties with whom a party is engaged in an actual or prospective merger or acquisition or similar transaction. Each party shall also be entitled to disclose such portions of this agreements as are necessary (i) to enforce this Agreement or its rights under this Agreement; or (ii) during the course of litigation so long as the disclosure of such terms and conditions are restricted in the same manner as is the confidential information of other litigating parties and so long as (1) the restrictions are embodied in a court-entered protective order limiting disclosure to outside counsel and (2) the disclosing party informs the other party in writing at least ten (10) business days in advance of the disclosure and discusses the nature and contents of the disclosure, in good faith, with the other party.

6.6 Use of Name. Neither party shall disclose or otherwise use the name, insignia, symbol, trademark, trade name or logotype of the other party or its Affiliates in any publication, press release, promotional material or other form of publicity without the prior written consent of the other party (which shall not be unreasonably withheld or delayed). Notwithstanding the foregoing, Novartis and its Affiliates and (sub)licensees shall have the right to use in a reasonable manner the name of Fluidigm and its Affiliates to the extent (a) that Novartis is required by Applicable Law to identify Fluidigm or its applicable Affiliate as having developed or manufactured Novartis Licensed Products sold in the Primary Field or Secondary Field, in the Territory or (b) subject to the consent of Fluidigm, not to be unreasonably withheld, as requested by Novartis in connection with its Exploitation of the Novartis Licensed Products.

6.7 Press Releases. If either party desires to issue a press release announcing the parties' execution of this Agreement, the parties shall negotiate in good faith a mutually acceptable press release that may be issued by such party, consent not to be unreasonably withheld. Except pursuant to the immediately preceding sentence or Section 6.5, no public announcement or press release concerning this Agreement, its subject matter or the transactions described herein, negotiations and discussions thereof, or any other agreement between the parties, whether contemplated, negotiated or executed, shall be made, either directly or indirectly, by either party or their respective Affiliates. Notwithstanding the foregoing, Fluidigm shall be entitled to disclose to Third Parties, in confidence, that "Fluidigm has entered into an exclusive relationship with a multinational diagnostic company for development of certain tests in prenatal and women's health". In addition, Fluidigm shall be entitled to disclose the definitions of the Primary Field and Secondary Field to the extent necessary to fulfill its obligations under this Agreement (e.g., in restrictive portions of its sales or license agreements with Third Parties).

6.8 Publications and Presentations. Fluidigm shall not make or otherwise disclose any Publication (as defined below) without Novartis' prior written approval, other than Publications that have been submitted for publication prior to the effective date of the Collaboration Agreement and disclosed to Novartis prior to the effective date of the Collaboration Agreement. **"Publication"** shall mean any publication, presentation or disclosure

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to a Third Party that contains material (including abstracts, scientific posters and presentations) related to any Collaboration Activity or any research and development related to the Primary Field or Secondary Field conducted by Fluidigm prior to the effective date of the Collaboration Agreement.

ARTICLE VII
Term and Termination

7.1 Term. This Agreement shall commence upon the Effective Date and shall continue until the earlier of (a) termination in accordance with this ARTICLE VII or (b) on a country-by-country basis, the expiration of the last to expire Fluidigm Patent covering the sale of the applicable Novartis Licensed Product in such country (the "**Term**").

7.2 Termination of this Agreement for Material Breach. Any material breach by a party of any of its material obligations contained in this Agreement, shall entitle the party not in breach to give to the party in breach notice specifying the nature of the breach, requiring the breaching party to cure such breach, and stating its intention to terminate if such breach is not cured. If such breach is not cured within thirty (30) days (the "**Cure Period**") after the receipt of such notice (or, if such breach cannot be cured within such thirty (30) day period, if the party in breach does not commence actions to cure such breach within the Cure Period and thereafter diligently continue such actions until the breach is fully cured), the party not in breach shall be entitled, without prejudice to any of its other rights conferred on it by this Agreement, and in addition to any other remedies available to it by law or in equity, to terminate this Agreement.

7.3 Termination Upon Insolvency. Either party may terminate this Agreement if, at any time, the other party shall file in any court or agency pursuant to any statute or regulation of any state, country or jurisdiction, a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of that party or of its assets, or if the other party proposes a written agreement of composition or extension of its debts, or if the other party shall be served with an involuntary petition against it, filed in any insolvency proceeding, and such petition shall not be dismissed within sixty (60) days after the filing thereof, or if the other party shall propose or be a party to any dissolution or liquidation, or if the other party shall make an assignment for the benefit of its creditors.

7.4 Additional Termination Rights. Novartis shall have the following additional termination rights: (a) Novartis may, in its sole discretion, terminate this Agreement upon thirty (30) days' prior written notice to Fluidigm, and (b) if a Third Party institutes an Infringement Suit, Novartis may, upon written notice to Fluidigm, terminate this Agreement immediately.

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7.5 Consequences of Expiration or Termination.

(a) If this Agreement terminates for any reason, the Ancillary Agreements shall terminate automatically as of the same date except as otherwise expressly provided in this Section 7.5.

(b) If this Agreement expires with respect to a given country, the licenses granted to Novartis under this Agreement shall remain in effect and such licenses with respect to such country shall be fully paid-up (except as otherwise provided in the last sentence of this clause (b)) and shall extend to the Exploitation of all products in the Primary Field and the Secondary Field, whether or not they use the Fluidigm Chips and Fluidigm Instruments, *provided, however*, that Novartis shall have no right to manufacture or have manufactured any Fluidigm Chips and Fluidigm Instruments, or any other Fluidigm products, under this Agreement and any supply of any Fluidigm Chips and Fluidigm Instruments to Novartis shall be subject to a supply agreement with Fluidigm. If Novartis elects to exercise such license with respect to such country using chips or instruments other than Fluidigm Chips or Fluidigm Instruments, Novartis and Fluidigm shall negotiate a reasonable royalty rate that would apply to such exercise.

(c) If Novartis terminates this Agreement pursuant to Section 7.2 or Section 7.3, the licenses granted to Novartis under this Agreement shall remain in effect and such licenses shall be fully paid-up (except as otherwise provided in the last sentence of this clause (c)) and shall extend to the Exploitation of all products in the Primary Field and the Secondary Field, whether or not they use the Fluidigm Chips and Fluidigm Instruments, *provided, however*, that Novartis shall have no right to manufacture or have manufactured any Fluidigm Chips and Fluidigm Instruments, or any other Fluidigm products, under this Agreement and any supply of any Fluidigm Chips and Fluidigm Instruments to Novartis shall be subject to a supply agreement with Fluidigm. If Novartis elects to exercise such license using chips or instruments other than Fluidigm Chips or Fluidigm Instruments, Novartis and Fluidigm shall negotiate a reasonable royalty rate that would apply to such exercise.

(d) (i) If Novartis terminates this Agreement pursuant to Section 7.4(a), then, subject to the buy-back mechanism described in Section 7.5(e) below, Novartis shall retain its licenses under this Agreement in the Secondary Field (which shall be fully paid-up) but its licenses under this Agreement in the Primary Field shall be limited to research purposes (i.e., no clinical applications).

(ii) If Novartis terminates this Agreement pursuant to Section 7.4(b) then, subject to the buy-back mechanism described in Section 7.5(e) below, Novartis shall retain its licenses under this Agreement and such licenses shall be fully paid-up (except as provided in the last sentence of this clause (ii)) and shall extend to all products, whether or not they use the Fluidigm Chips and Fluidigm Instruments; *provided, however,* that Novartis shall have no right to manufacture or have manufactured made Fluidigm Chips and Fluidigm Instruments, or any other Fluidigm products, and any supply of Fluidigm Chips and Fluidigm Instruments shall be subject to a supply agreement with Fluidigm. If Novartis elects to exercise such license using chips or instruments other than Fluidigm Chips or

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Fluidigm Instruments, Novartis and Fluidigm shall negotiate a reasonable royalty rate that would apply to such exercise.

(e) If Fluidigm has complied with its diligence obligations under the Collaboration Agreement during Phase 2 and Phase 3 and Novartis terminates this Agreement pursuant to Section 7.4, Fluidigm may terminate the licenses granted by Fluidigm to Novartis under this Agreement with respect to the Primary Field (and if agreed by the parties, the Secondary Field) and, subject to any purchase under Section 7.5(f), purchase from Novartis the additional rights and licenses with respect to the Novartis Licensed Products as described below, collectively, upon payment of the Repurchase Price (as defined below). If Fluidigm desires to do so, then within six (6) months following the termination of this Agreement, Fluidigm may notify Novartis in writing and the parties shall negotiate in good faith to determine the Repurchase Price. The "**Repurchase Price**" shall not be less than the aggregate amount paid by Novartis to Fluidigm hereunder and under the Collaboration Agreement (including milestones and the licensee fee paid by Novartis and costs incurred by Novartis that are related to the Collaboration Activities or its activities under this Agreement, including any patent maintenance and enforcement costs for the Collaboration Patents or the Licensed Patents). Upon payment of the Repurchase Price, Novartis shall grant to Fluidigm a worldwide, royalty-bearing exclusive license, with the right to sublicense, under any Patents solely owned by Novartis that claim the Collaboration Information and Inventions to Exploit the Novartis Licensed Products in the Primary Field (and if agreed by the parties, the Secondary Field) that as are then being marketed or developed by Novartis on commercially reasonable terms to be negotiated in good faith by the Parties upon any such termination. Such license to Fluidigm shall also include the right to use clinical and regulatory data and information generated by Novartis for regulatory purposes relating to the applicable Novartis Licensed Products in the Primary Field (and, if applicable, in the Secondary Field). Novartis shall promptly transfer and assign to Fluidigm all of its right, title and interest in and to all US and foreign regulatory submissions and regulatory approvals with respect to such Novartis Licensed Products and all device master files and device dossiers with respect to the Novartis Licensed Products (other than those related to manufacturing facilities), to the extent relating solely to the Primary Field (and if applicable, the Secondary Field).

(f) If Novartis terminates the Collaboration Agreement for any reason (other than for Fluidigm's material breach of the Collaboration Agreement or a Change of Control of Fluidigm in which at least one Acquiring Entity is a Primary Field Competitor) during Phase 2 or Phase 3 of the Collaboration Activities, then, subject to the buy-back mechanism described below, Novartis shall retain its licenses under this Agreement in the Secondary Field but its licenses under this Agreement in the Primary Field shall be limited to research purposes (i.e., no clinical applications). In addition, subject to any purchase under Section 7.5(e), if Fluidigm has complied with its diligence obligations under the Collaboration Agreement during Phase 2 and Phase 3, Fluidigm may terminate the licenses granted by Fluidigm to Novartis under this Agreement with respect to the Primary Field (and if agreed by the parties, the Secondary Field) and purchase from Novartis the additional rights and licenses with respect to the Novartis Licensed Products as described below, collectively, upon payment of the Repurchase Price (as defined below). If Fluidigm desires to do so, then within six (6) months following the termination of the Collaboration Agreement, Fluidigm may notify Novartis in writing and the parties shall negotiate in good faith to determine the Repurchase Price. The "**Repurchase Price**" shall not be less than the aggregate amount paid by Novartis to Fluidigm hereunder and under the Collaboration Agreement (including milestones and the licensee fee paid by Novartis and costs incurred by Novartis that are related to the Collaboration Activities or its activities under this Agreement, including any patent maintenance and enforcement costs for the Collaboration Patents or the Licensed Patents). Upon payment of the Repurchase Price, Novartis shall grant to Fluidigm a worldwide, royalty-bearing exclusive license, with the right to sublicense, under any Patents solely owned by Novartis that claim the Collaboration Information and Inventions to Exploit the Novartis Licensed Products in the Primary Field (and if agreed by the parties, the Secondary Field) that are then being marketed or developed by Novartis on commercially reasonable terms to be negotiated in good faith by the Parties upon any such termination. Such license to Fluidigm shall also include the right to use clinical and regulatory data and information generated by Novartis for regulatory purposes relating to the applicable Novartis Licensed Products in the Primary Field (and, if applicable, in the Secondary Field). Novartis shall promptly transfer and assign to Fluidigm all of its right, title and interest in and to all US and foreign regulatory submissions and regulatory approvals with respect to such Novartis Licensed Products and all device master files and device dossiers with respect to the Novartis Licensed Products (other than those related to manufacturing facilities), to the extent relating to the Primary Field (and if applicable, the Secondary Field).

(g) If Fluidigm terminates this Agreement pursuant to Section 7.2 or Section 7.3, all licenses granted to Novartis hereunder shall automatically terminate.

(h) In the case of termination of the licenses granted to Novartis under this Agreement, Novartis (and its Affiliates and sublicensees) shall have the right for six (6) months after the effective date of such termination to dispose of all Novartis Licensed Products then in its inventory, as though this Agreement had not terminated. For the avoidance of doubt, Novartis shall continue to make any payments to Fluidigm with respect to such inventory to the extent required under the Supply Agreement.

(i) Each party shall, and shall cause its Affiliates to, cooperate with the other party in transferring to the other party, within sixty (60) days of the expiration or termination date of this Agreement, all Confidential Information of the other party in the Territory, except that (i) each party may retain one (1) copy of such data, files or materials for its records and for the purpose of performing any obligations under this Agreement that may survive such termination or expiration and (ii) Novartis may retain the Confidential Information of Fluidigm as reasonably necessary to exercise its retained rights pursuant to this Section 7.5.

7.6 Remedies. Except as otherwise expressly provided herein, termination of this Agreement in accordance with the provisions hereof shall not limit remedies that may otherwise be available in law or equity.

7.7 Accrued Rights; Surviving Obligations.

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

(a) Accrued Rights. Termination or expiration of this Agreement for any reason shall be without prejudice to any rights that shall have accrued to the benefit of a party prior to such termination or expiration. Such termination or expiration shall not relieve a party from obligations that are expressly indicated to survive the termination or expiration of this Agreement pursuant to this Section 7.7.

(b) Survival. Without limiting the foregoing, Sections 2.3 (solely for so long as Novartis continues to develop or commercialize Novartis Licensed Products under any license surviving the expiration or termination of this Agreement as set forth in Section 7.5), 2.5 (solely for so long as the Supply Agreement remains in effect or Novartis has the right to enter into the Supply Agreement), 3.1(a) and (b) (solely with respect to any license that survives expiration or termination of this Agreement as set forth in Section 7.5), 5.1, 5.3 through 5.5 (solely to the extent Novartis retains an exclusive license after the expiration or termination of this Agreement), 6.2 to 6.7, 6.8 (solely to the extent Novartis retains an exclusive license after the expiration or termination of this Agreement), 7.5, 7.6, 7.8, and this Section 7.7, and ARTICLES VIII and X shall survive the expiration or termination of this Agreement for any reason.

7.8 Rights in Bankruptcy. All rights and licenses granted under or pursuant to this Agreement by Novartis or Fluidigm are, and shall otherwise be deemed to be, for purposes of Section 365(n) of the United States Bankruptcy Code, licenses of right to "intellectual property" as defined under Section 101 of the United States Bankruptcy Code. The parties agree that the parties, as licensees of such rights under this Agreement, shall retain and may fully exercise all of their rights and elections under the United States Bankruptcy Code. The parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against either party under the United States Bankruptcy Code, the party hereto that is not a party to such proceeding shall be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, which, if not already in the non-subject party's possession, shall be promptly delivered to it (a) upon any such commencement of a bankruptcy proceeding upon the non-subject party's written request therefor, unless the party subject to such proceeding elects to continue to perform all of its obligations under this Agreement or (b) if not delivered under clause (a) above, following the rejection of this Agreement by or on behalf of the party subject to such proceeding upon written request therefor by the non-subject party.

ARTICLE VIII
Indemnity; Limitation of Liability

8.1 Indemnification of Fluidigm. In addition to any other remedy available to Fluidigm, Novartis shall indemnify, defend and hold harmless Fluidigm, its Affiliates and its and their respective directors, officers and employees (each a "**Fluidigm Party**") in full and on demand, from and against any and all direct or indirect liabilities or expenses, including interest, penalties, and reasonable lawyers' fees (as set forth in Section 8.5(b)) and disbursements (collectively, "**Losses**") incurred by them to the extent resulting from or arising out of or in

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connection with any claims or allegations made or suits, actions or proceedings brought by a Third Party (collectively, "**Third Party Claims**", other than Third Party Infringement Claims (which are the subject of Section 8.3), against any Fluidigm Party that arise out of or result from: (a) any intentional misconduct or negligence on the part of Novartis or any of its Affiliates or sublicensees in performing any activity contemplated by this Agreement, or the breach of any provision of this Agreement by Novartis; or (b) the Exploitation of an Novartis Licensed Product by or on behalf of Novartis or any of its Affiliates or sublicensees, except, in each case ((a), or (b)), (i) for any Losses for which Fluidigm has an obligation to indemnify any Novartis Party pursuant to Section 8.2, as to which Loss each party shall indemnify the other to the extent of their respective liability for such Loss, (ii) to the extent such Losses arise out of or result from the intentional misconduct or negligence of a Fluidigm Party, or the breach of any provision of this Agreement by Fluidigm, and (iii) to the extent Fluidigm has an obligation to indemnify a Novartis Party for any such Losses pursuant to an Ancillary Agreement.

8.2 Indemnification of Novartis. In addition to any other remedy available to Novartis, Fluidigm shall indemnify, defend and hold harmless Novartis, its Affiliates and its sublicensees and its and their respective directors, officers and employees (each a "**Novartis Party**") in full and on demand, from and against any and all Losses incurred by them to the extent resulting from or arising out of or in connection with any Third Party Claims, other than Third Party Infringement Claims (which are the subject of Section 8.3), against any Novartis Party that arise out of or result from:

(a) (i) any intentional misconduct or negligence on the part of Fluidigm or its Affiliates in performing any activity contemplated by this Agreement, or the breach of any provision of this Agreement by Fluidigm; or (ii) the Exploitation of any Fluidigm Instrument, Fluidigm Chip, or the Fluidigm System by or on behalf of Fluidigm or any of its Affiliates, which claim(s) is based on acts or omissions occurring or failing to occur, in whole or in part, prior to the Effective Date, including any violation of Applicable Law in connection with such Exploitation and any Third Party Claims that allege that the claimant has suffered personal injury or death as a result of the use of any of the foregoing sold or distributed by or on behalf of Fluidigm or any of its Affiliates prior to the Effective Date; except, in each case ((i)) and (ii)), (A) for any Losses for which Novartis has an obligation to indemnify any Fluidigm Party pursuant to Section 8.1, as to which Loss each party shall indemnify the other to the extent of their respective liability for such Loss, (B) to the extent such Losses arise out of or result from the intentional misconduct or negligence of a Novartis Party, or the breach of any provision of this Agreement or any Ancillary Agreement by Novartis, and (C) to the extent Novartis has an obligation to indemnify a Fluidigm Party for any such Losses pursuant to an Ancillary Agreement, or

(b) (i) the Exploitation of any Fluidigm Instrument, Fluidigm Chip, or Fluidigm Licensed Product by or on behalf of Fluidigm or its Affiliates or (sub)licensees (excluding such Exploitation by Novartis, its Affiliates, and its (sub)licensees) (A) anywhere in the world following termination of this Agreement in its entirety or (B) in one or more countries following termination of this Agreement with respect to such country(ies), in each case ((A) and

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(B)) including claims that result from any violation of Applicable Law in connection with such Exploitation or allege that the claimant has suffered personal injury or death as a result of the use of any of the foregoing sold or distributed by or on behalf of Fluidigm or its Affiliates or sublicensees (excluding such sale, distribution or other Exploitation by Novartis, its Affiliates or its sublicensees) as contemplated in (A) or (B) above; (ii) the exercise by Fluidigm, its Affiliates or (sub)licensees (excluding such exercise by Novartis, its Affiliates, and sublicensees) of rights under any license or right of reference granted by Novartis to Fluidigm under this Agreement or following or in connection with termination of this Agreement in its entirety or with respect to one or more country(ies); or (iii) the use by or on behalf of Fluidigm, its Affiliates, or (sub)licensees (excluding such use by Novartis, its Affiliates, and (sub)licensees) of the Regulatory Documentation, regulatory approvals, or other information transferred or made available, if any, by or on behalf of Novartis or any of its Affiliates to Fluidigm following or in connection with termination of this Agreement in its entirety or with respect to one or more country(ies).

8.3 Third Party Infringement Claims. Any Third Party Claims, to the extent arising out of or resulting from infringement of any Third Party intellectual property rights, including Patents, by the Exploitation of the Novartis Licensed Products (x) by or on behalf of Novartis (or its Affiliates or (sub)licensees) pursuant to this Agreement or the Supply Agreement, or (y) by or on behalf of Fluidigm (or its Affiliates or (sub)licensees) in performing its obligations under this Agreement or the Supply Agreement ("**Third Party Infringement Claims**"), and any Losses resulting from or arising out of or in connection with any such Third Party Claim (such Losses, collectively, "**Third Party Infringement Losses**") shall be treated as follows:

(a) Novartis shall indemnify, defend and hold harmless each Fluidigm Party on demand, from and against any and all Third Party Infringement Losses arising out of or in connection with or resulting from any Third Party Infringement Claims, to the extent arising or resulting from (i) any Excluded Cause, any Additional Excluded Item, any Novartis Licensed Product that does not include Fluidigm Core Technology or a breach by Novartis of this Agreement or a breach by Novartis of the Supply Agreement, in each case in full or (ii) any other cause, excluding a breach by Fluidigm of this Agreement or a breach by Fluidigm of any Knowledge representation in the Supply Agreement that the sale to Novartis of any Fluidigm Products does not infringe any intellectual property rights of Third Parties; *provided, however,* that in the case of clause (ii), such obligation shall be limited so that Novartis bears only [***] of such Losses and Fluidigm bears [***] of such Losses.

(b) Fluidigm shall indemnify, defend and hold harmless each Novartis Party on demand, from and against any and all Third Party Infringement Losses arising out of or in connection with or resulting from any Third Party Infringement Claims, to the extent arising or resulting from (i) a breach by Fluidigm of this Agreement or a breach by Fluidigm of any Knowledge representation in the Supply Agreement that the sale to Novartis of any Fluidigm Products does not infringe any intellectual property rights of Third Parties, in each case in full or (ii) any other cause, excluding any Excluded Cause, any Additional Excluded Item or any Novartis Licensed Product that does not include Fluidigm Core Technology, or a breach by

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Novartis of this Agreement or a breach by Novartis of the Supply Agreement; *provided*, *however*, that in the case of clause (ii), such obligation shall be limited so that Fluidigm bears only [***] of such Losses and Novartis bears [***] of such Losses.

"**Excluded Causes**" shall mean (i) modification of the Fluidigm Technology by Novartis, its Affiliates or sublicensees unless Fluidigm has been notified of such modification in writing and fails to reasonably object to such modification by written notice to Novartis within sixty (60) days following such notification; (ii) the combination by Novartis, its Affiliates, its sublicensees and their respective customers of Fluidigm Technology with any product or item not provided by or on behalf of Fluidigm or any of its Affiliates unless Fluidigm has been notified of such combination in writing and fails to reasonably object to such combination by written notice to Novartis within sixty (60) days following such notification; (iii) Fluidigm's compliance with Novartis' specifications or designs if, prior to such compliance, Fluidigm reasonably objects to such compliance by written notice to Novartis; or (iv) any name or mark included on a Novartis Licensed Product not applied by Fluidigm (or applied at Novartis' request).

In addition, Fluidigm shall have no liability or obligation under Section 8.2 or this Section 8.3 with respect to items incorporated into Fluidigm Products at Novartis' request (and in the manner specified by Novartis, if Novartis has specified a manner in writing), including reagents and mastermixes if, prior to such incorporation, Fluidigm reasonably objects to such incorporation by written notice to Novartis within thirty (30) days of such request ("**Additional Excluded Items**").

8.4 Notice of Claim. An Indemnified Party shall give the Indemnifying Party prompt written notice of any Loss or discovery of fact upon which such Indemnified Party intends to base a request for indemnification under Section 8.1, 8.2 or 8.3. The Indemnifying Party shall not be liable for any Loss that results from any delay in providing such notice. Such notice shall contain a description of the claim and the nature and amount of the Loss claimed (to the extent that the nature and amount of such Loss is known at such time). The Indemnified Party shall furnish promptly to the Indemnifying Party copies of all papers and official documents received in respect of any such Loss.

8.5 Indemnification Procedures. The obligations of an Indemnifying Party under this ARTICLE VIII shall be governed by and contingent upon the following:

(a) Assumption of Defense. At its option, the Indemnifying Party may assume the defense of any Third Party Claim by giving written notice to the Indemnified Party within fourteen (14) days after receipt of notice pursuant to Section 8.4. Such assumption shall not be construed as an acknowledgement of liability or a waiver of any defenses (and the Indemnifying Party shall be reimbursed by the Indemnified Party in the case in which the Indemnifying Party is not liable under this ARTICLE VIII).

(b) Control of Defense. Upon the assumption of the defense of a Third Party Claim by the Indemnifying Party, such party may appoint lead counsel in the defense of

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the Third Party Claim, which shall be reasonably acceptable to the Indemnified Party, and except as expressly provided in this Section 8.5(b), the Indemnifying Party shall not be liable to the Indemnified Party for any legal expenses subsequently incurred by such Indemnified Party in connection with the analysis, defense or settlement of the Third Party Claim. The Indemnified Party shall be entitled to participate in, but not control, the defense of a Third Party Claim and to retain counsel of its choice for such purpose at its expense unless the interests of the Indemnified Party and the Indemnifying Party with respect to such Third Party Claim are sufficiently adverse to prohibit the representation by the same counsel of both parties under Applicable Law, ethical rules or equitable principles, in which latter case such retention shall be at the expense of the Indemnifying Party.

(c) Settlement. With respect to all Losses resulting from or arising out of or in connection with Third Party Claims, where the Indemnifying Party has assumed the defense of a Third Party Claim in accordance with Section 8.5(a), (i) the Indemnifying Party shall have authority to consent to the entry of any judgment, enter into any settlement or otherwise dispose of such Losses, provided that it obtains the prior written consent of the Indemnified Party, which consent shall not be unreasonably withheld or delayed and (ii) no Indemnified Party shall admit any liability with respect to, or settle, compromise or discharge, any such Third Party Claim without the prior written consent of the Indemnifying Party, which consent shall not be unreasonably withheld or delayed.

(d) Cooperation. If the Indemnifying Party chooses to defend or prosecute any Third Party Claim, the Indemnified Party that is a party to this Agreement shall, and shall cause each of its Affiliates and each of their respective directors, officers, employees and agents to reasonably cooperate in the defense or prosecution thereof and shall furnish such records, information and testimony, provide such witnesses and attend such conferences, discovery proceedings, hearings, trials and appeals as may be reasonably requested in connection therewith. Such cooperation shall include access during normal business hours by the Indemnifying Party to, and reasonable retention by the Indemnified Party of, records and information that are reasonably relevant to such Third Party Claim, and making the Indemnified Party, its Affiliates and its and their respective directors, officers, employees and agents available on a mutually convenient basis to provide additional information and explanation of any records or information provided, and the Indemnifying Party shall reimburse the Indemnified Party for all of its related reasonable out-of-pocket expenses.

(e) Expenses. Except as expressly provided above, the reasonable and verifiable costs and expenses, including fees and disbursements of counsel, incurred by the Indemnified Party in connection with any claim and reimbursable as set forth in this ARTICLE VIII shall be reimbursed on a calendar quarter basis by the Indemnifying Party (subject to Section 8.3), without prejudice to the Indemnifying Party's right to contest the Indemnified Party's right to indemnification and subject to refund in the event the Indemnifying Party is ultimately held not to be obligated to indemnify the Indemnified Party.

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(f) Collaboration Agreement. Notwithstanding any provision of this Agreement, to the extent that any Losses or Third Party Claim is subject to a party's indemnity obligation in Section 10 of the Collaboration Agreement, such Losses or Third Party Claim shall not be subject to such party's indemnity obligation in this Section 8 of this Agreement.

8.6 Limitation on Damages; Caps.

(a) General Limitations. EXCEPT IN CIRCUMSTANCES OF RECKLESSNESS OR INTENTIONAL MISCONDUCT BY A PARTY OR ITS AFFILIATES, OR WITH RESPECT TO A PARTY'S INDEMNIFICATION OBLIGATIONS WITH RESPECT TO THIRD PARTY CLAIMS UNDER SECTION 8.1, 8.2 OR 8.3, NEITHER PARTY OR ANY OF ITS AFFILIATES SHALL BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR LOST PROFITS, MILESTONES OR ROYALTIES, WHETHER IN CONTRACT, WARRANTY, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE, ARISING OUT OF RESULTING FROM (i) THE EXPLOITATION OF THE NOVARTIS LICENSED PRODUCT, OR (ii) ANY BREACH OF OR FAILURE TO PERFORM ANY OF THE PROVISIONS OF THIS AGREEMENT. IN NO EVENT SHALL FLUIDIGM OR ANY OF ITS AFFILIATES BE LIABLE FOR COSTS OF SUBSTITUTE PRODUCTS, SERVICES, OR TECHNOLOGY.

(b) Indemnity Caps. NOVARTIS' MAXIMUM AGGREGATE LIABILITY UNDER SECTION 8.1(a) AND THE PARALLEL INDEMNIFICATION PROVISION TO BE INCLUDED IN THE SUPPLY AGREEMENT AND FLUIDIGM'S MAXIMUM AGGREGATE LIABILITY UNDER SECTION 8.2(a)(i) AND THE PARALLEL INDEMNIFICATION PROVISION TO BE INCLUDED IN THE SUPPLY AGREEMENT, RESPECTIVELY, SHALL EQUAL [***] (THE "**CAP**"); PROVIDED, HOWEVER, THAT NO LOSSES RESULTING FROM SUCH PARTY'S RECKLESSNESS OR INTENTIONAL MISCONDUCT SHALL BE COVERED BY OR COUNTED TOWARDS SUCH PARTY'S CAP. IN THE CASE OF MULTIPLE APPLICABLE THIRD PARTY CLAIMS, THE CAP SHALL BE FIRST SET BASED ON THE FIRST SUCH THIRD PARTY CLAIM FILED ("**TRIGGERING CLAIM**") AND SUCH CAP SHALL COVER, IN THE AGGREGATE, ALL APPLICABLE THIRD PARTY CLAIMS FILED DURING THE [***] PERIOD FOLLOWING THE FILING OF SUCH TRIGGERING CLAIM. IF AFTER THE CONCLUSION OF SUCH [***] PERIOD, A NEW APPLICABLE THIRD PARTY CLAIM IS FILED, THE CAP SHALL RESET PURSUANT TO THE PRECEDING SENTENCE BASED ON SUCH NEW APPLICABLE THIRD PARTY CLAIM, WHICH SHALL BE TREATED AS A TRIGGERING CLAIM AND THE RESET CAP SHALL APPLY TO ANY OTHER APPLICABLE THIRD PARTY CLAIMS FILED DURING THE [***] PERIOD FOLLOWING THE NEW TRIGGERING CLAIM (AND SUCH RESETTING SHALL APPLY AGAIN, IF NEEDED, AT THE CONCLUSION OF ANY SUCH NEW [***] PERIOD). These limitations, however, shall not apply to liability for personal injury, death, or physical damage to tangible property and for clarity do not apply to any Third Party Infringement Losses.

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ARTICLE IX
Representations, Warranties and Covenants

9.1 Representations, Warranties and Covenants. Each party hereby represents, warrants and covenants to the other party as of the Effective Date as follows:

(a) Such party (i) has the power and authority and the legal right to enter into this Agreement and perform its obligations hereunder, and (ii) has taken all necessary action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder. This Agreement has been duly executed and delivered on behalf of such party and constitutes a legal, valid and binding obligation of such party and is enforceable against it in accordance with its terms subject to the effects of bankruptcy, insolvency or other laws of general application affecting the enforcement of creditor rights and judicial principles affecting the availability of specific performance and general principles of equity, whether enforceability is considered a proceeding at law or equity.

(b) Except as otherwise disclosed to the other party in the Side Letter, to such party's Knowledge, there is no pending or threatened litigation (and it has not received any communication) that alleges that such party's activities related to this Agreement have violated, or that by conducting the activities as contemplated herein such party would violate, any of the intellectual property rights of any Third Party.

(c) All necessary consents, approvals and authorizations of all regulatory and governmental authorities and other Persons required to be obtained by such party in connection with the execution and delivery of this Agreement and the performance of its obligations hereunder have been obtained.

(d) The execution and delivery of this Agreement and the performance of such party's obligations hereunder (i) do not conflict with or violate any requirement of applicable law or regulation or any provision of the articles of incorporation, bylaws, limited partnership agreement or any similar instrument of such party, as applicable, in any material way, and (ii) do not conflict with, violate, or breach or constitute a breach or require any consent under, any contractual obligation or court or administrative order by which such party is bound.

9.2 Additional Representations, Warranties and Covenants of Fluidigm. Fluidigm represents, warrants and covenants to Novartis that:

(a) (i) To Fluidigm's Knowledge as of the Effective Date, except as disclosed in the Side Letter, the Core Fluidigm Know-How, Regulatory Documentation and any other data, clinical studies and other Information and Inventions in its or its Affiliates' possession or Control in each case relating to the Core Fluidigm Technology that Fluidigm has made available to Novartis is not materially incomplete or inaccurate, and (ii) Fluidigm will make available to Novartis the Core Fluidigm Know-How, Regulatory Documentation and any other data, clinical studies and other Information and Inventions in its or its Affiliates'

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possession or Control relating to the Core Fluidigm Technology as set forth in Section 2.4, and, to Fluidigm's Knowledge, as of the time of delivery, all such Core Fluidigm Know-How and other Information and Inventions that Fluidigm delivers pursuant to Section 2.4 will not be materially incomplete or inaccurate.

(b) To Fluidigm's Knowledge as of the Effective Date, Fluidigm has disclosed all material adverse information with respect to the Core Fluidigm Technology, which information is Known to Fluidigm as of the Effective Date. For the purpose of this Section 9.2(b), "material adverse information" [***].

(c) Fluidigm is the sole and exclusive owner of all right, title and interest in and to the Patents listed as "Owned" on Schedule 9.2(c) (the "**Owned Core Fluidigm Patents**"), and except as provided in Schedule 9.2(c), as of the Effective Date such rights are not subject to any encumbrance, lien or claim of ownership by any Third Party. Fluidigm is the licensee of and Controls rights, title and interest in and to the Patents listed on Schedule 9.2(c) as "Licensed" (the "**In-Licensed Core Fluidigm Patents**"), in each case on either an exclusive or non-exclusive basis, as indicated in such schedule, and, except as provided in Schedule 9.2(c), as of the Effective Date such rights are not subject to any encumbrance, lien or claim of ownership by any Third Party. True, complete and correct copies of all license agreements in which Fluidigm receives any right or license to any In-Licensed Core Fluidigm Patents (the "**Core Fluidigm In-License Agreements**"), as amended to the date hereof, have been provided to Novartis, and a list of such agreements is set forth in Schedule 9.2(c). During the term of this Agreement, Fluidigm shall not encumber or diminish the rights granted to Novartis hereunder with respect to the Fluidigm Patents, including by not (i) committing any acts or permitting the occurrence of any omissions that would cause the material breach or termination of any Core Fluidigm In-License Agreement, or (ii) amending or otherwise modifying, or permitting to be amended or modified, any Core Fluidigm In-License Agreement, in the case of clause (ii) in a manner that is inconsistent with the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement (including its option rights set forth in this Agreement). Fluidigm shall promptly provide Novartis with notice of any alleged, threatened, or actual breach of any Core Fluidigm In-License Agreement of which Fluidigm is aware and that is likely to have a material adverse effect on the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement. As of the Effective Date, none of Fluidigm, its Affiliates and, to Fluidigm's Knowledge, any Third Party is in breach of any Core Fluidigm In-License Agreement of which Fluidigm is aware and that is likely to have a material adverse effect on the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement (including its option rights set forth in this Agreement). Upon request of Novartis, Fluidigm shall use its commercially reasonable efforts (i) to obtain from its Third Party licensors the right for Novartis (if it were to enter into the License Agreement) to further sublicense any rights that are sublicensed to Novartis under by Fluidigm under the License Agreement and (ii) to modify the diligence requirements under the Core Fluidigm In-License Agreements so that they are consistent with the terms of the License Agreement.

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(d) To Fluidigm's Knowledge as of the Effective Date, except as disclosed in the Side Letter, (i) the Core Fluidigm Patents are subsisting and are not invalid or unenforceable, in whole or in part, (ii) the conception, development and reduction to practice of the Regulatory Documentation relating to the Fluidigm Technology, the Core Fluidigm Patents and Core Fluidigm Know-How existing as of the Effective Date have not constituted or involved the misappropriation of trade secrets or other rights or property of any Third Party, (iii) there are no claims, judgments or settlements against or amounts with respect thereto owed by Fluidigm or any of its Affiliates relating to such Regulatory Documentation, Core Fluidigm Patents, or Core Fluidigm Know-How, (iv) no claim or litigation has been brought or threatened against Fluidigm or any of its Affiliates (or to Fluidigm's Knowledge) by any Person alleging that any Core Fluidigm Patents or Core Fluidigm Know-How or the disclosing, copying, making, assigning, licensing or Exploiting of any Core Fluidigm Patents, Core Fluidigm Know-How, or products and services embodying the Core Fluidigm Patents or Core Fluidigm Know-How, including the Exploitation of the Novartis Licensed Products using the Core Fluidigm Technology, violates, infringes or otherwise conflicts or interferes with any intellectual property or proprietary right of any Third Party, and (v) Fluidigm has not received any written notice alleging that any Third Party rights would be infringed or misappropriated by Exploiting the Core Fluidigm Technology or otherwise suggesting that Fluidigm obtain a license in order to Exploit the Core Fluidigm Technology, Core Fluidigm Patents or Core Fluidigm Know-How.

(e) Except for products shipped by or on behalf of Fluidigm or its Affiliates to Third Parties prior to the effective date of the Collaboration Agreement for research use only (and not clinical use) that are not subject to restrictions with respect to the Primary Field or Secondary Field, Fluidigm and its Affiliates have not and shall not, directly or indirectly, expressly or by implication, by action or omission or otherwise (i) assigned, transferred, conveyed or otherwise encumbered any right, title or interest in or to any Regulatory Documentation, Core Fluidigm Patents, or Core Fluidigm Know-How, (ii) granted any license or other right, title or interest in or to any Regulatory Documentation, Core Fluidigm Patents, or Core Fluidigm Know-How in any manner, or (iii) agreed to or is otherwise bound by any covenant not to sue for any infringement, misuse or otherwise with respect to any Core Fluidigm Patents, or Core Fluidigm Know-How, in each case ((i), (ii), and (iii)) that is inconsistent with the grants, assignments and other rights reserved to Novartis and its Affiliates in this Agreement or any Ancillary Agreement. Novartis acknowledges that Fluidigm shall be entitled, from time-to-time, to make intercompany transfers of intellectual property rights between Fluidigm and its Affiliates.

(f) Prior to the Effective Date, Fluidigm has not granted to any Third Party a license to use any Fluidigm chips or instruments for diagnostic or other clinical use in the Primary Field or the Secondary Field. Fluidigm has disclosed to Novartis prior to the Effective Date the current (as of the Effective Date) version of those certain standard terms and conditions that Fluidigm uses to govern the sale of its chips and instruments. Such terms and conditions shall prohibit any Exploitation of such chips and instruments in the Primary Field and the Secondary Field but may permit research only use (but not use to generate clinical results for a fee or results for use in the medical management of a patient) in the Secondary Field. Upon

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request of Novartis from time to time, for the purpose of determining whether Fluidigm is complying with restrictions set forth in this Agreement, Fluidigm shall promptly provide to Novartis, for Novartis review, that portion of Fluidigm's then-current standard terms and conditions for the sale of Fluidigm's chips and instruments that govern the licenses granted by Fluidigm.

(g) Except as disclosed in the Side Letter, to Fluidigm's Knowledge as of the Effective Date, there is no actual or threatened infringement or misappropriation by a Third Party of the Core Fluidigm Patents or the Core Fluidigm Know-How that is likely to have a material adverse effect on Novartis' Exploitation of the Core Fluidigm Patents and the Core Fluidigm Know-How contemplated by this Agreement.

ARTICLE X
Miscellaneous

10.1 Force Majeure. Neither party shall be held liable or responsible to the other party or be deemed to have breached under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the non-performing party, including fires, floods, embargoes, shortages, epidemics, quarantines, war, acts of war (whether war be declared or not), insurrections, riots, civil commotion, strikes, lockouts or other labor disturbances, acts of God or acts, omissions or delays in acting by any governmental authority. The non-performing party shall notify the other party of such force majeure within ten (10) days after such occurrence by giving written notice to the other party stating the nature of the event, its anticipated duration, and any action being taken to avoid or minimize its effect. The suspension of performance shall be of no greater scope and no longer duration than is necessary and the non-performing party shall use commercially reasonable efforts to remedy its inability to perform.

10.2 Assignment; Change of Control.

(a) Neither party may assign its rights or delegate its obligations under this Agreement, in whole or in part, without the prior written consent of the other party, except that (i) Novartis shall have the right, without such consent, to assign any or all of its rights and delegate any or all of its obligations hereunder to any of its Affiliates or to any successor in interest (whether by merger, acquisition, asset purchase, or otherwise) to all or substantially all of the assets to which this Agreement relates and (ii) Fluidigm shall have the right, without such consent, to assign any or all of its rights and delegate any or all of its obligations hereunder to any company that acquires all or substantially all of Fluidigm's assets (whether by merger, acquisition, asset purchase, or otherwise). Any permitted successor of a party or any permitted assignee of all of a party's rights under this Agreement that has also assumed all of such party's obligations hereunder in writing shall, upon any such succession or assignment and assumption, be deemed to be a party to this Agreement as though named herein in substitution for the assigning party, whereupon the assigning party shall cease to be a party to this Agreement and shall cease to have any rights or obligations under this Agreement. All validly assigned rights of

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a party shall inure to the benefit of and be enforceable by, and all validly delegated obligations of such party shall be binding on and be enforceable against, the permitted successors and assigns of such party. Any attempted assignment or delegation in violation of this Section 10.2 shall be void and without effect.

(b) Notwithstanding Section 10.2(a), Novartis shall have the right (i) to perform any or all of its obligations and exercise any or all of its rights hereunder; (ii) to perform any or all of its obligations and exercise any or all of its rights under this Agreement through any of its Affiliates; and (iii) to subcontract its obligations hereunder to a Third Party, *provided* that Novartis remains liable for such Third Party's performance of such obligations.

(c) Fluidigm shall provide Novartis with fifteen (15) days' prior written notice of any Change of Control. Following the Change of Control, the following shall apply:

(i) If Fluidigm or any of its Affiliates engages in development or commercialization of products in the Primary Field or Secondary Field other than the performance of its obligations under this Agreement or any Ancillary Agreement, Fluidigm and its Affiliates shall establish and enforce appropriate firewall procedures between such activities and the activities performed by or on behalf of Fluidigm or Affiliates pursuant to its other programs to ensure that no Collaboration Information and Inventions or Confidential Information of Novartis is used in connection with such other programs (such programs conducted in compliance with this Agreement, including the exclusivity afforded to Novartis with respect to the Fluidigm Patents, the Fluidigm Know-How and the Fluidigm Technology under this Agreement and the Ancillary Agreements, "**Independent Programs**").

(ii) The Fluidigm Know-How, Fluidigm Patents and Fluidigm Technology shall exclude (A) any technology or intellectual property rights, [***] (collectively, "**Acquiring Entities**") and (B) any technology or intellectual property [***] in accordance with this Agreement ("**Acquisition IP**"); *provided*, *however*, that such exclusions (in clauses (A) and (B)) shall not apply to any Acquisition IP that is either (1) [***] under this Agreement or any Ancillary Agreement, or (2) [***].

(iii) [***]

(iv) If Novartis terminates the Collaboration Agreement pursuant to Section 9.4(c) of the Collaboration Agreement due to a Change of Control in which no Acquiring Entity is a Primary Field Competitor, in addition to clauses (i) through (iii), the following shall also apply:

(A) If Novartis (or its Affiliates or (sub)licensees) are commercializing one or more Novartis Licensed Products as of the Change of Control, then this Agreement and the Supply Agreement shall remain in effect and, if the Supply Agreement is not in effect at the time of such Change of Control, Novartis shall have the right, on written notice to

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Fluidigm, to have the parties enter into such agreement as described in Section 4.3 of the Collaboration Agreement.

(B) If clause (A) immediately above does not apply and Novartis (or its Affiliates or (sub)licensees) desires to continue the development of one or more Novartis Licensed Products, then:

(x) this Agreement shall remain in effect and the licenses granted herein shall be extended to the Exploitation of all products in the Primary Field and the Secondary Field, whether or not they use the Fluidigm Chips or Fluidigm Instruments; *provided*, *however*, that Novartis shall have no right to manufacture or have manufactured any Fluidigm Chips or Fluidigm Instruments under this Agreement other than pursuant to clause (y) immediately below, and if Novartis elects to exercise such license using chips or instruments other than Fluidigm Chips or Fluidigm Instruments, then Novartis and Fluidigm shall negotiate a reasonable royalty rate that would apply to such exercise,

(y) at the election of Novartis, on written notice to Fluidigm together with Novartis' notice of such termination of the Collaboration Agreement, either (1) the Supply Agreement shall remain in effect or, if not executed, Novartis shall have the right to have the parties enter into the Supply Agreement as described Section 4.3, or (2) Novartis may obtain from Fluidigm a license under any intellectual property rights Controlled by Fluidigm or any of its Affiliates, which rights are necessary or reasonably useful to manufacture the Novartis Licensed Products (provided that such intellectual property rights that are Acquisition IP shall be limited to Acquisition IP that is necessary to so use such intellectual property rights Controlled by Fluidigm (or any of its then Affiliates) immediately preceding the Change of Control) ("**Manufacturing License**"), in which case the parties shall negotiate reasonable compensation to Fluidigm for such license ("**Manufacturing Fee**"), it being understood and agreed that no license is granted to manufacture any Fluidigm chip other than the Fluidigm Chips or to manufacture any Fluidigm instrument other than the Fluidigm Instruments, and

(z) at the election of Novartis, on written notice to Fluidigm together with Novartis' notice of such termination of the Collaboration Agreement, Fluidigm shall provide technology transfer to Novartis or its designee to enable Novartis to continue development and, if Novartis has exercised its option for a manufacturing option under clause (y)(2) of this Section 10.2(c)(iv)(B), the manufacture of the Novartis Licensed Products then in development, in which case Fluidigm shall be compensated by Novartis for such technology transfer at cost. If Fluidigm fails to do so within a reasonable time, Novartis may exercise its escrow rights under the License Agreement as if it were a Failure to Supply as defined in Exhibit G of the Collaboration Agreement or the Supply Agreement, if executed).

If the parties cannot agree on a reasonably royalty or compensation for a Manufacturing License pursuant to this Section 10.2(c) within ninety (90) days after such termination of the Collaboration Agreement, the dispute resolution provisions in Section 10.6 shall apply and the

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arbitrator shall make its determination after affording each party an opportunity to submit a proposal and thereafter selecting one of the proposals of the parties or a royalty rate or compensation, as applicable, that falls within the range established by the parties' proposals. During the pendency of any negotiation or arbitration of such terms, Novartis shall be deemed licensed to perform the applicable activities and following resolution thereof shall pay any compensation due to Fluidigm based on the established royalty or other compensation, as applicable.

(v) If Novartis terminates the Collaboration Agreement pursuant to Section 9.4(c) of the Collaboration Agreement due to a Change of Control in which any Acquiring Entity is a Primary Field Competitor, in addition to clauses (i) through (iii), clause (iv) shall also apply, but with the following modifications: (A) no additional amounts shall be due to Fluidigm under Section 4.1 or Section 4.2 of this Agreement, (B) any technology transfer described in clause (z) shall be at the sole expense of Fluidigm, (C) Novartis may elect to secure a Manufacturing License whether or not any Novartis Licensed Product is then being commercialized, and (D) if Novartis elects to secure a Manufacturing License, Novartis may deduct from the Manufacturing Fee that would apply as described in Section 10.2(c) the amounts paid by Novartis under Section 6.1 of the Collaboration Agreement.

10.3 Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable under any present or future law, and if the rights or obligations of any party under this Agreement will not be materially and adversely affected thereby, (a) such provision shall be fully severable, (b) this Agreement shall be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof, (c) the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid or unenforceable provision or by its severance herefrom, and (d) in lieu of such illegal, invalid or unenforceable provision, there shall be added automatically as a part of this Agreement a legal, valid and enforceable provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and reasonably acceptable to the parties herein. To the fullest extent permitted by applicable law, each party hereby waives any provision of law that would render any provision hereof prohibited or unenforceable in any respect.

10.4 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California without reference to the rules of conflict of laws thereof that would require the application of the laws of another jurisdiction.

10.5 Notices. All notices or other communications that are required or permitted hereunder shall be in writing and delivered personally, sent by facsimile (and promptly confirmed by personal delivery, registered or certified mail or overnight courier as provided herein), sent by nationally-recognized overnight courier or sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

If to Fluidigm, to:

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
Attention: [***]
Facsimile: (650) 871-7195

with a copy to:

7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
Attention: General Counsel
Facsimile: (650) 871-7195

If to Novartis, to:

Novartis Vaccines and Diagnostics, Inc.
4560 Horton Street, Emeryville, CA 94608
Attention: President, Diagnostics
Facsimile: (510) 655-9910

with copies to:

Novartis Vaccines and Diagnostics, Inc.
350 Massachusetts Avenue
Cambridge, MA 02139
Attention: General Counsel
Facsimile: (617) 871-8911

Covington & Burling
One Front Street
San Francisco, CA 94111
Attention: Amy L. Toro
Facsimile: (415) 955-6586

or to such other address as the party to whom notice is to be given may have furnished to the other party in writing in accordance herewith. Any such communication shall be deemed to have been given (i) when delivered, if personally delivered or sent by facsimile on a business day, (ii) on the business day after dispatch, if sent by nationally-recognized overnight courier, and (iii) on the fifth business day following the date of mailing, if sent by mail. It is understood and agreed that this Section 10.5 is not intended to govern the day-to-day business communications necessary between the parties in performing their duties, in due course, under the terms of this Agreement.

10.6 Dispute Resolution. Any matter that is unable to be resolved by the JSC

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shall be referred to Fluidigm's Chief Executive Officer and Novartis' President of Diagnostics for resolution (collectively, the "**Executives**"). The Executives shall negotiate in good faith to resolve any such dispute for up to forty-five (45) days of such dispute being referred to them. Any dispute regarding the validity, interpretation or construction of, or the compliance with or breach of this Agreement or any Ancillary Agreement, and is not resolved by the Executives shall be solely and exclusively settled by final and binding arbitration in accordance with the commercial arbitration rules of the American Arbitration Association ("**AAA**"), subject to the terms and conditions of this Section 10.6. Either party may initiate the arbitration of a dispute by sending written notice of such election to the other party clearly marked "Arbitration Demand". The arbitration shall be adjudicated by one arbitrator appointed in accordance with the commercial rules of the AAA. The decision of the arbitrator shall be final and binding upon the parties hereto, and may be entered in any competent court for judicial acceptance of such an award and order of enforcement. The place of arbitration shall be San Francisco, California. Notwithstanding anything to the contrary in this Section 10.6, each party may, and expressly reserves the right to, seek judicial relief from any court of competent jurisdiction in order to obtain an injunction or other equitable relief pending the outcome of an arbitration hereunder or to enforce a breach of the confidentiality provisions in ARTICLE VI. Subject to the foregoing, the state and federal courts situated in the city of San Francisco, California, shall have sole jurisdiction and venue to enforce any arbitration award and over proceeding for such injunctive or equitable relief brought pursuant to this Section 10.6. The parties irrevocably submit to such jurisdiction and venue, waive any claim to an inconvenient forum posed by such venue, and agree that process may be served in any manner permitted by such court before which a dispute is pending.

10.7 Entire Agreement; Modifications. This Agreement sets forth and constitutes the entire agreement and understanding between the parties with respect to the subject matter hereof and all prior agreements, understanding, promises and representations, whether written or oral, with respect thereto, including that certain Letter Of Intent dated December 23, 2009 and that certain Mutual Confidential Disclosure Agreement dated September 15, 2009, are superseded hereby; provided, however, that the parties acknowledge and agree that no Ancillary Agreement is intended to be terminated or superseded as a result of the execution of this Agreement. In the event of a conflict between this Agreement and any Ancillary Agreement, this Agreement shall control. Each party confirms that it is not relying on any representations or warranties of the other party except as specifically set forth herein. No amendment, modification, release or discharge hereof shall be binding upon the parties unless in writing and duly executed by authorized representatives of both parties.

10.8 Relationship of the Parties. It is expressly agreed that Fluidigm, on the one hand, and Novartis, on the other hand, shall be independent contractors and that the relationship between the two parties shall not constitute a partnership, joint venture or agency. Neither Fluidigm, on the one hand, nor Novartis, on the other hand, shall have the authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the other, without the prior written consent of the other party to do so. All persons employed by a party shall be employees of such party and not of the other party and all

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costs and obligations incurred by reason of any such employment shall be for the account and expense of such party.

10.9 Equitable Relief. Each party acknowledges and agrees that the restrictions set forth in ARTICLE VI of this Agreement are reasonable and necessary to protect the legitimate interests of the other party and that the other party would not have entered into this Agreement in the absence of such restrictions, and that any violation or threatened violation of any provision of ARTICLE VI will result in irreparable injury to the other party. Each party also acknowledges and agrees that in the event of a violation or threatened violation of any provision of ARTICLE VI, the other party shall be entitled to preliminary and permanent injunctive relief, without the necessity of proving irreparable injury or actual damages and without the necessity of having to post a bond, as well as to an equitable accounting of all earnings, profits and other benefits arising from any such violation. The rights provided in the immediately preceding sentence shall be cumulative and in addition to any other rights or remedies that may be available to either party.

10.10 Waiver. Any term or condition of this Agreement may be waived at any time by the party that is entitled to the benefit thereof, but no such waiver shall be effective unless set forth in a written instrument duly executed by or on behalf of the party waiving such term or condition. The waiver by either party hereto of any right hereunder or of the failure to perform or of a breach by the other party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by said other party whether of a similar nature or otherwise.

10.11 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

10.12 No Benefit to Third Parties. The representations, warranties, covenants and agreements set forth in this Agreement are for the sole benefit of the parties hereto and their successors and permitted assigns, and they shall not be construed as conferring any rights on any other Persons.

10.13 Further Assurance. Each party shall duly execute and deliver, or cause to be duly executed and delivered, such further instruments and do and cause to be done such further acts and things, including the filing of such assignments, agreements, documents and instruments, as may be necessary or as the other party may reasonably request in connection with this Agreement or to carry out more effectively the provisions and purposes hereof, or to better assure and confirm unto such other party its rights and remedies under this Agreement.

10.14 References; Construction. Unless otherwise specified, (a) references in this Agreement to any Article, Section, Schedule or Exhibit shall mean references to such Article, Section, Schedule or Exhibit of this Agreement, (b) references in any section to any clause are references to such clause of such section, and (c) references to any agreement,

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instrument or other document in this Agreement refer to such agreement, instrument or other document as originally executed or, if subsequently varied, replaced or supplemented from time to time, as so varied, replaced or supplemented and in effect at the relevant time of reference thereto. Except where the context otherwise requires, wherever used, the singular shall include the plural, the plural the singular, the use of any gender shall be applicable to all genders and the word "or" is used in the inclusive sense (i.e., meaning "and/or"). The captions of this Agreement are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Agreement or the intent of any provision contained in this Agreement. The term "including" as used herein shall mean including, without limiting the generality of any description preceding such term. The language of this Agreement shall be deemed to be the language mutually chosen by the parties and no rule of strict construction shall be applied against either party hereto.

[*Remainder of page left blank intentionally.*]

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date first above written.

NOVARTIS VACCINES & DIAGNOSTICS, INC.	FLUIDIGM CORPORATION
By: _____	By: _____
Name: _____	Name: _____
Title: _____	Title: _____

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Confidential

Exhibit A

Fluidigm Patents

Incorporated by reference to Exhibit E contained in Exhibit 10.21 to the registrant's Registration Statement on Form S-1 filed with the Securities and Exchange Commission on January 18, 2011.

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Confidential

Schedule 9.2(c)

Owned Core Fluidigm Patents, In-Licensed Core Fluidigm Patents and Core In-License Agreements

Incorporated by reference to Schedule 11.2(d) contained in Exhibit 10.21 to the registrant's Registration Statement on Form S-1 filed with the Securities and Exchange Commission on January 18, 2011.

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EXHIBIT 10.23

CONFIDENTIAL TREATMENT REQUESTED BY FLUIDIGM CORPORATION

QUALITY AGREEMENT FOR DEVELOPMENT OF IN-VITRO DIAGNOSTICS DEVICES

Between

Novartis Vaccines and Diagnostics, Inc.

4560 Horton Street, Emeryville, CA 94608

subsequently referred to as **NOVARTIS**

and

Fluidigm Corporation

7000 Shoreline Court, Suite 100, South San Francisco, CA 94080

subsequently referred to as **FLUIDIGM**

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TABLE OF ENCLOSURES

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PREAMBLE

NOVARTIS and its Affiliates are leading international companies engaged in the marketing and sales of in-vitro diagnostics (IVD) products to support non-invasive prenatal screening. They operate under one common Quality Management System incorporating GMP guidelines and regulations and subject to all applicable laws.

NOVARTIS desires to collaborate with FLUIDIGM to design and develop certain in-vitro diagnostics devices as further described in a Collaboration and Option Agreement between FLUIDIGM and Novartis Vaccines and Diagnostics, Inc dated as of May __, 2010 (**"COA")**. All capitalized terms used but not defined in this Development QAG (including in Section 8 of this Development QAG) will have the meanings set forth in the COA.

The COA contemplates a Collaboration Plan for the Parties' Collaboration Activities. FLUIDIGM and NOVARTIS wish to further define their roles and responsibilities according to such Collaboration Plan as set forth in this quality agreement (**"Development QAG"**). In addition to the requirements below the parties shall follow the corresponding international guidelines prevailing at the time of the development activities.

NOVARTIS and its Affiliates will be the legal manufacturer of the Novartis Licensed Products and will be responsible for the Design History File (**"DHF"**) for each of the Novartis Licensed Products.

1. PURPOSE AND SCOPE OF THIS DEVELOPMENT QUALITY AGREEMENT

The purpose of this Development QAG is to ensure a mutual understanding of the roles and responsibilities of FLUIDIGM and NOVARTIS as they relate to the development of Novartis Licensed Products in the Primary Field and Secondary Field per COA. Changes beyond the scope outlined herein for the development of such Novartis Licensed Product (or activities related thereto) are not permitted without Novartis' prior approval with amendment to this Development QAG or the establishment of a separate quality agreement covering said products or activities. For clarity, the manufacture by FLUIDIGM of Novartis Licensed Products in the Primary Field and Secondary Field shall be subject to a separate manufacturing quality agreement. This Development QAG is also intended to assure that the Novartis Licensed Products are in

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compliance with the relevant regulatory requirements, and ISO standards as applicable for the defined intended use of the Novartis Licensed Products. This Development QAG forms an integrated part of the COA. It defines the Parties' respective contacts for all technical and quality matters (see Enclosure A). The roles and responsibilities of both Parties are assigned in Enclosure B. Since NOVARTIS will rely on decisions made by FLUIDIGM and its critical Subcontractors as defined in FLUIDIGM's quality system (the list of such critical Subcontractors as set forth in Enclosure C) pertaining to the design, development and/or manufacture of Novartis Licensed Products, this Development QAG also includes a process for the auditing and approval of such FLUIDIGM critical Subcontractors as listed in Enclosure C. Changes to this Development QAG will be listed in Enclosure D. The enclosures must be signed by the quality responsible persons of the respective Parties.

2. GENERAL PROVISIONS (QUALITY ASSURANCE)

Standards

The following documents represent the key standards under which this Development QAG was based:

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Organization	Guideline
FDA	21 CFR Part 808 (Exemptions from Federal Preemption of State and Local Medical Device Requirements) 21 CFR Part 820 (Quality System Regulation) 21 CFR Part 809 (In Vitro Diagnostic Products for Human Use) 21 CFR Part 11 Electronic Records; Electronic Signatures FDA recognized consensus standards mutually agreed as appropriate for the development of the products
EU/EEC	98/79/EC In Vitro Diagnostics Medical Device Directive (IVDD)
ISO	ISO 13485:2003, Medical devices. Quality management systems - Requirements for regulatory purposes ISO 14971, Risk Management for Medical Devices CMDCAS – Canadian Medical Devices Conformity Assessment System Harmonized standards as applicable mutually agreed as appropriate for the development of the products
Novartis Diagnostics	Third Party Warehouse, Distribution and Services Quality Requirements Manual (Doc# 255957)

Table 1: Guidelines to Quality Assurance of In-Vitro Diagnostics devices

Quality Assurance System

FLUIDIGM covenants that it maintains or will maintain an ISO 13485/FDA Quality System Regulations (QSR) compliant quality management system with respect to the Novartis Licensed Products. Unless otherwise required by this Development QAG, the provisions of FLUIDIGM's quality management system and standard operating procedures shall be applied to FLUIDIGM's development of the Novartis Licensed Products. FLUIDIGM shall ensure that, with respect to the development activities it is to perform under the COA, the design and development processes for the Novartis Licensed Products meet NOVARTIS requirements and comply with all applicable laws.

FLUIDIGM shall ensure that, with respect to the development activities it is to perform under the COA, the development of test methods, specifications and manufacturing processes for the Novartis Licensed Products comply to NOVARTIS requirements in all respects with the Collaboration Plan (and all mutually agreed upon written amendments) and that each Novartis Licensed Product as developed will comply in all material respects with the general guidelines

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(see table 1), each of which is considered a requirement for quality assurance.

Inspections and Audits

FLUIDIGM agrees that its facilities, operations and quality systems which are used by FLUIDIGM in performing its development activities under the COA will be audited by NOVARTIS (during reasonable business hours) to ensure compliance with development requirements of the QSR/ISO 13485:2003 Standard and applicable NOVARTIS requirements set forth herein. QSR requirements and applicable NOVARTIS requirements set forth herein shall be implemented, and subsequently followed, by FLUIDIGM as required in an audit report/action plan that will be agreed to between the Parties. During the development and design transfer phase of the design process, NOVARTIS shall be entitled to perform audits for cause (e.g. undesirable events or data audit of design history documentation) and at reasonable intervals (during reasonable business hours) to ensure the quality and data integrity of each Novartis Licensed Product under development. Each party will bear their own expense for such audits. Any significant audit findings of which NOVARTIS notifies FLUIDIGM in writing shall be resolved to Novartis' reasonable satisfaction prior to delivery of any Novartis Licensed Product to Novartis.

FLUIDIGM will correct any observations arising from any such audit in a timely manner in accordance with the audit report/action plan agreed to between the parties. NOVARTIS shall have the right to reject any development related activities if activities are observed that violate agreed upon standards and regulations. In such case, FLUIDIGM shall implement all such agreed upon applicable corrective actions before continuation of the development activities.

FLUIDIGM shall promptly notify NOVARTIS about any issues encountered during inspection by a Regulatory Authority or other governmental authority or agency that is reasonably likely to adversely affect the quality of any Novartis Licensed Products being developed under the COA and must provide a redacted copy of the inspection report and the corrective actions to NOVARTIS within fifteen (15) business days after notice of such reports.

Subcontracting

FLUIDIGM shall have the rights to outsource any specific tasks related to the development of Novartis Licensed Products to one or more third parties on its behalf. A list of critical Subcontractors (as defined in Section 8) agreed upon by Quality from both parties are listed in Enclosure C. To the extent pertaining to the Novartis Licensed Products being developed under

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the COA, all additions of critical Subcontractors or changes to the services provided by the Subcontractors in Enclosure C require written approval by FLUIDIGM and NOVARTIS, such approval not to be unreasonably withheld. FLUIDIGM shall ensure that each such Subcontractor has an appropriate quality system which ensures adequate quality of materials and services are provided, and without limiting the foregoing, FLUIDIGM agrees to establish quality agreements with each of its critical Subcontractors (or otherwise establish quality metrics that will govern the development work conducted by the applicable critical Subcontractor) before commencing development activities.

FLUIDIGM shall remain solely and fully responsible to NOVARTIS for the performance of the work by Subcontractors in accordance with the requirements set forth in this Development QAG. FLUIDIGM shall provide copies of audit reports of these Subcontractors for Novartis Licensed Products if NOVARTIS requests the copies for the purpose of reviewing for audit completeness and assessment of qualification. In addition, NOVARTIS may request, based on the assessment of critical Subcontractors' audit reports, or for cause (e.g. undesirable events or data audit of design history documentation) the right to accompany FLUIDIGM personnel during audits of the critical FLUIDIGM Subcontractors to ensure the quality and data integrity of each Novartis Licensed Product under development. Each party will bear its own expense for such audits.

Change Management and Approval

Changes to this Development QAG and its relevant enclosures shall only be made by mutual agreement between the Parties and must be in writing.

FLUIDIGM and NOVARTIS will document design changes, according to the Development Plan, relevant to the development of Novartis Licensed Products, such as to the product requirements and verification testing procedures or such as to changes that could interfere with the quality and safety of the final products.

3. DESIGN AND DEVELOPMENT

Each Development Plan shall incorporate COA Collaboration Plan activities and Quality Assurance requirements with respect to design control, validation and product registration requirements. Deliverables for each Novartis Licensed Product shall be as set forth in the Collaboration Plan and the applicable Development Plan.

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Qualification and Validation (incl. Computer Systems)

Quality Processes: FLUIDIGM shall ensure that appropriate processes for document control, design and development (including design change control), risk management, supplier management, equipment calibration/maintenance and environmental control (appropriate laboratory facilities including security, cleanliness and environment controls) which comply with this Development QAG are fully implemented, and subsequently maintained, before starting any activity related to the Collaboration Plan of the development of any Novartis Licensed Products. All such processes must pass NOVARTIS divisional quality audits against the relevant development sections of ISO 13485:2003 and FDA QSR requirements before any such development work can be accepted. Development work pertaining to the Collaboration Plan performed before the establishment of appropriate ISO and FDA Quality System controls as they relate to said development will not be accepted by NOVARTIS as evidentiary work for including in the product Design History File.

Equipment: The development activities of FLUIDIGM under the Collaboration Plan shall be conducted using calibrated and qualified equipment. Qualification reports shall be approved by FLUIDIGM. FLUIDIGM shall make all approved validation protocols, reports, testing protocols and/or certifications available to NOVARTIS on request.

Computer Systems: FLUIDIGM shall ensure that computer systems and software used directly for operations in verification or validation testing of Novartis Licensed Products are validated. FLUIDIGM shall make all approved validation protocols, reports, testing protocols, raw data and system operation procedures pertaining to the development of Novartis Licensed Products under the COA available for inspection by NOVARTIS on request.

Design History File (DHF)

Until the agreed phase of transfer to NOVARTIS, FLUIDIGM shall hold and maintain the assigned elements of the design history file (DHF) containing the development and all changes to the device in accordance with FDA 21 CFR 820.30 and ISO 13485:2003 requirements. Design documents intended for DHF or regulatory submission as determined by Quality Assurance from both parties must include NOVARTIS quality approval signatures. FLUIDIGM shall make all elements of the DHF held by FLUIDIGM available to NOVARTIS for inspection upon request. Any observed deviation shall be reviewed and corrected as required to the extent agreed by both parties before transfer of the DHF materials to NOVARTIS. Upon completion of FLUIDIGM's

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design and development activities with respect to any Novartis Licensed Product under the COA, the design documents for such Novartis Licensed Product shall be transferred to NOVARTIS for retention; provided that, FLUIDIGM shall be entitled to retain and use copies of all such design documents as and to the extent permitted under the COA.

4. MANUFACTURING MATERIALS FOR VALIDATION AND CLINICAL TRIAL PURPOSES

Starting (RAW) Material

4.1.1 Testing and Release

Each batch/lot or serialized part, first article or part of all starting and auxiliary materials procured by FLUIDIGM must meet the approved specifications for that part or material, the evidence of that compliance must be documented and released for production of Novartis Licensed Products used for validation activities and clinical trial purposes; provided, however, that FLUIDIGM may rely on its suppliers to meet specifications where such suppliers provide evidence of conformity.

Unless otherwise agreed in writing, FLUIDIGM shall perform all quality control testing according to test methods and acceptance criteria agreed with NOVARTIS; provided, however, that FLUIDIGM may rely on its suppliers to perform such testing where such suppliers provide evidence of such test methods and acceptance criteria.

4.1.2 Storage

FLUIDIGM shall use adequate storage containers and storage/transport conditions to ensure that the specified quality of Starting (Raw) Materials is not impaired. FLUIDIGM will only store Starting (Raw) Materials under FLUIDIGM’s standard storage conditions which have been agreed upon by NOVARTIS to be suitable and appropriate for the above purpose.

Manufacturing Lines, Locations

All Novartis Licensed Products shall be assembled using location, line and production units which comply with the then-current version of the master manufacturing and packaging procedures described in the Device Master Record (DMR), approved development procedures or the respective/corresponding regulatory dossier.

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Manufacturing and Packaging Records

FLUIDIGM shall carry out all manufacture and packaging of the Novartis Licensed Products according to agreed manufacturing procedures and packaging instructions from NOVARTIS. FLUIDIGM shall submit the device master record for each Novartis Licensed Product to NOVARTIS before the first start of product manufacture and before any approved change is implemented.

FLUIDIGM shall compile and archive clear structured device history record documentation for each of the Novartis Licensed Product. All manufacturing records and testing documentation kept by FLUIDIGM will comply with the applicable GMP guidelines.

Upon request by NOVARTIS or any Regulatory Authority, FLUIDIGM shall provide NOVARTIS with copies of the following documents within an agreed upon period (or as required by any such Regulatory Authority):

- Complete device history record of Novartis Licensed Products,
- Certificate(s) of analysis of Starting (Raw) Materials,
- Certificate(s) of inspection of components used to assemble the device,
- Certificate(s) of analysis of primary Packaging Materials and
- Test methods used.

Review of Manufacturing Documentation

After detailed review of the appropriate manufacturing documentation for each Novartis Licensed Product by FLUIDIGM, FLUIDIGM shall include or attach a statement of compliance with the applicable sections of the GMP requirements, signed by a qualified FLUIDIGM quality assurance representative, to the certificate of analysis (CoA) for each Novartis Licensed Product. A suitable format of this statement or document will be mutually agreed upon between the Parties after FLUIDIGM has provided NOVARTIS with the required batch documentation as defined in the device master record.

Warehousing

FLUIDIGM will maintain adequate controls in accordance with the NOVARTIS Third Party Warehouse, Distribution and Services Quality Requirements Manual (Doc# 255957), sections 1, 2, 4, 6, for any Novartis Licensed Products produced for validation and clinical trials in its

warehousing facilities to assure that these products are not damaged during storage. The Novartis Licensed Products produced by FLUIDIGM for use in NORVATIS' validation and clinical trials will be stored in an appropriate location and environment to reasonably ensure that no damage occurs during storage to such products due to temperature, humidity, dirt, or other harmful agents potentially materially impacting the performance of these products prior to shipment to NOVARTIS or the trial sites. FLUIDIGM shall ensure or require that all Novartis Licensed Products are stored according to specifications established by the parties during the development of such Novartis Licensed Product. In the event that, to FLUIDIGM's knowledge, the quality of any Novartis Licensed Products in any warehouse of FLUIDIGM or a critical Subcontractor could be adversely affected for any reason, FLUIDIGM shall take prompt action to prevent further damage. In such case FLUIDIGM shall inform NOVARTIS in writing within a reasonable time frame but no longer than five (5) Business Days.

Packaging for Dispatch and Transport

FLUIDIGM shall ensure that all applicable quality and regulatory requirements regarding the packaging for dispatch and transport to the agreed hand-over point are met with respect to each Novartis Licensed Product.

5. TESTING OF IN-VITRO DIAGNOSTIC DEVICES

Samples of In-vitro Diagnostics Devices

FLUIDIGM, when requested, will provide NOVARTIS with samples of pilot Novartis Licensed Products for testing by NOVARTIS during development stage according to the applicable Collaboration Plan and Development Plan. Samples must be representative of the method or prototype being developed.

Technology Transfer (Hardware and Software)

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Wherever the applicable Development Plan or COA requires that test methods be transferred, FLUIDIGM will conduct a formal method transfer to NOVARTIS according to the Collaboration Plan and the applicable Development Plan. All data supporting the transfer must be reviewed by NOVARTIS Quality prior to final approval of the technology transfer.

Reference Standards

The reference standards for testing of Novartis Licensed Products, by-products or degradation products will be established by FLUIDIGM and will be provided to NOVARTIS on request.

6. ARCHIVING OF SAMPLES AND DOCUMENTATION

FLUIDIGM will ensure or require that (reference) samples and documentation related to the development will be archived under defined conditions as follows:

Item	Period
Starting (raw) material (samples)	N/A
Design History Files	All originals transferred to NOVARTIS, including electronic files and raw data
Design Verification Documentation	All originals transferred to NOVARTIS

Table 2: Storage periods of samples and documentation

Following the end of the applicable archiving period FLUIDIGM shall provide the documentation to NOVARTIS; provided that, FLUIDIGM shall be entitled to retain and use copies of all such documentation as and to the extent permitted under the COA.

7. TERMS AND EXPIRATION

This Development QAG forms an integrated part of the COA and shall come into force together with the COA and sign-off by the Parties hereto; provided that in the event of any conflict or inconsistency between the provisions of the COA and any provision of this Development QAG, the provisions of the COA shall prevail. The Development QAG and its enclosures shall be subject to regular review by the Parties or amended as needed.

This Development QAG shall be terminated upon expiration or termination of the COA.

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Unless otherwise reasonably agreed by both parties, each party represents and warrants that it shall obtain and maintain all necessary permits, registrations and licenses required to design and develop the Novartis Licensed Products and it shall produce the Novartis Licensed Products, and dispose of all waste, in compliance in all material respects, with all applicable environmental laws, regulations, and standards, to the extent any such activities are conducted by such party. In performing activities under this Development QAG, each party agrees to act reasonably, including without limitation, not unreasonably withholding its agreement to any action plan or other matter to be performed by the other party.

Each Party represents and warrants to the other, respectively, that each is fully authorized to execute this Development QAG, and to be bound and perform according to its terms.

The failure by either Party to exercise or enforce any of the terms or conditions of this Development QAG shall not constitute or be deemed a waiver of that Party's right thereafter to enforce each and every term and condition of this Development QAG.

If any one or more of the provisions of this Development QAG shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Development QAG, and this Development QAG shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

The limitation of liability set out in Section 10.5(a) of the COA shall be deemed incorporated into this Agreement by reference, except that, for such purposes, each reference in Section 10.5(a) of the COA to "this Agreement" shall be deemed to be a reference to this Development QAG.

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8. DEFINITIONS

Development Plan	The development plan is written by Novartis with inputs from Fluidigm and approved by both parties. The development plan documents the roles and responsibilities for each party and function, methods for development, strategies for verification and validation, and requirements for commercialization of Novartis Licensed Products.
QSR	Quality system regulations as defined by 21 CFR Part 820
GMP	Good Manufacturing Practices as defined by the FDA QSR
Packaging Material	Any material employed in the packaging of a product, excluding any outer packaging used for transportation or shipment. Primary Packaging Material is in direct contact with the product, secondary packaging refers to all other materials.
Starting (Raw) Material	Any material used in the production of a subcomponent, component of the final developed product.
Subcontractors	A third party supplier utilized by FLUIDIGM to perform any of the following activities: • the design and development of Novartis Licensed Products, • the manufacture of Novartis Licensed Products for validation and clinical trial purposes; • the design and/or manufacture of custom components or materials (including software) for Novartis Licensed Products.
Other definitions	See COA

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9. SIGNATURES

NOVARTIS	**FLUIDIGM**
Matthew Powell Vice President, Quality Operations	Robert C. Jones Executive Vice President, Research and Development

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

ENCLOSURE A: List of Quality Liaisons

NOVARTIS

Name	Function	Address
Matthew Powell	Vice President, Quality Operations	4560 Horton Street M/S Q-400 Emeryville, CA 94608-2916
Telephone	**Fax**	**e-mail**
510-923-4689	510-923-3420	matthew.powell@novartis.com
Name	**Function**	**Address**
Elizabeth Tang	QA Franchise Manager	4560 Horton Street M/S Q-225 Emeryville, CA 94608-2916
Telephone	**Fax**	**e-mail**
510-923-2518	510-923-3420	elizabeth.tang@novartis.com

FLUIDIGM

Name	Function	Address
Robert C. Jones	Executive Vice President, Research and Development	7000 Shoreline Court, Suite 100, South San Francisco, CA 94080
Telephone	**Fax**	**e-mail**
650-266-6000	650-871-7152	bob.jones@fluidigm.com
Name	**Function**	**Address**
Telephone	**Fax**	**e-mail**

CONTRACTOR

Name	Function	Address
Telephone	**Fax**	**e-mail**

NOVARTIS

FLUIDIGM

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Matthew Powell Vice President, Quality Operations	Robert C. Jones Executive Vice President, Research and Development

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ENCLOSURE B: Table of Responsibilities

N = NOVARTIS

F = FLUIDIGM

GENERAL REQUIREMENTS

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**

DESIGN & DEVELOPMENT

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
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DESIGN & DEVELOPMENT

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
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[***]	**[***]**

MANUFACTURE OF IN-VITRO DIAGNOSTICS DEVICE FOR VALIDATION AND CLINICAL TRIALS

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
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MANUFACTURE OF IN-VITRO DIAGNOSTICS DEVICE FOR VALIDATION AND CLINICAL TRIALS

[***]	**[***]**
[***]	**[***]**
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[***]	**[***]**

PRIMARY PACKAGING FOR CLINICAL TRIAL LOTS

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**

SECONDARY PACKAGING FOR CLINICAL TRIAL LOTS

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**

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SECONDARY PACKAGING FOR CLINICAL TRIAL LOTS

[***]	**[***]**
[***]	**[***]**
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[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**

RELEASE FOR SHIPMENT TO NOVARTIS FOR CLINICAL TRIAL LOTS

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**

DUTY OF CARE CHECK (UPON RECEIPT) FOR CLINICAL TRIAL LOTS

[***]	**[***]**
[***]	**[***]**
[***]	**[***]**

NOVARTIS	**FLUIDIGM**
Matthew Powell	Robert C. Jones

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Vice President, Quality Operations	Executive Vice President, Research and Development

[***] Information has been omitted and filed separately with the Securities and Exchange Commission. Confidential treatment has been requested with respect to the omitted portions.

ENCLOSURE C: List of Approved Critical Sub-Contractors

Name	**Service**		**Date**
Name1 Legal Form (City - Country)	*{add letter(s)}*	Last Audit	*{dd.mm.yyyy}*
		Quality agreement	*{dd.mm.yyyy}*
		Part of Authorization	*yes/no*

A = Material supplier *(optional)*
B = Performs verification testing
C = Performs software development
D = Performs hardware development
E = Performs assay development
F = Provides other services

NOVARTIS

Matthew Powell
Vice President, Quality Operations

FLUIDIGM

Robert C. Jones
Executive Vice President,
Research and Development

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ENCLOSURE D: History of Changes

Document Part	Version	Date	Reason for change
Core Part	1.0	*{dd.mm.yyyy}*	Original
Enclosure A	1.0	*{dd.mm.yyyy}*	Original
Enclosure B	1.0	*{dd.mm.yyyy}*	Original
Enclosure C	1.0	*{dd.mm.yyyy}*	Original
Enclosure D	1.0	*{dd.mm.yyyy}*	Original

NOVARTIS

Matthew Powell
Vice President, Quality Operations

FLUIDIGM

Robert C. Jones
Executive Vice President,
Research and Development

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