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LAW GROUP LLP

DOCKET NUMBER
3287
Office of the Secretary
Int'l Trade Commission

January 9, 2018

**VIA FEDEX**

The Honorable Lisa R. Barton
Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

**Re: In the Matter of Certain Microfluidic Systems And Components Thereof And Products Containing Same, Inv. No. 337-TA-___**

Dear Secretary Barton:

Attached for filing on behalf of Complainant 10X Genomics, Inc. are documents in support of Complainant's request that the Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended. Pursuant to the Commission Rules of Practice and Procedure, a request for confidential treatment of Confidential Exhibit Nos. 16, 17, 28, 43-48, 54, 58, 86, 100, 100A, 108, 109, 113, and 121 is also included with this submission. One of the patents asserted in the complaint—United States Patent No. 9,856,530 ("the 530 patent") — issued on January 2, 2018. Consequently, a certified copy of the patent, assignment, and prosecution history has been requested, but has not yet been received. Complainant will provide copies of these materials as soon as they are received.

1. An original and eight (8) copies of the **NON-CONFIDENTIAL** verified Complaint (original and one copy unbound, without tabs (Rules 201.6(c), 210.8(a), and 201.8(d));
2. An original and eight (8) copies of the **CONFIDENTIAL** verified Complaint (original and one copy unbound, without tabs (Rules 201.6(c), 210.8(a), and 201.8(d));
3. An original CD containing the **CONFIDENTIAL EXHIBITS** to the Complaint and a separate original CD containing the **NON-CONFIDENTIAL EXHIBITS** to the Complaint (Rules 201.6(c), 210.8(a), and 201.8(d));
4. An original CD containing the video **CONFIDENTIAL PHYSICAL EXHIBIT** 100 to the Complaint and a separate original CD containing the video **NON-CONFIDENTIAL PHYSICAL EXHIBITS 51, 96, 122** to the Complaint (Rules 201.6(c), 210.8(a), and 201.8(d));
5. An original and eight (8) copies of the **NON-CONFIDENTIAL** Statement Concerning the Public Interest;
6. An original and eight (8) copies of the **CONFIDENTIAL** Statement Concerning the Public Interest;

7. One (1) additional copy of the **NON-CONFIDENTIAL** Complaint, Statement Concerning the Public Interest, and accompanying non-confidential exhibits and non-confidential physical exhibits (on CDs), for service upon the proposed respondent Bio-Rad Laboratories, Inc. ("Proposed Respondent") (Rules 210.8(a) and 210.11(a));

8. One (1) additional copy of the **CONFIDENTIAL** Complaint, Statement Concerning the Public Interest, exhibits and physical exhibit to the Complaint (on CDs) to be held for service upon counsel for Proposed Respondent under a protective order or as otherwise permitted under Rules 201.6 and 210.5 (Rules 201.6, 210.5, 210.8(a), and 210.11(a));

9. One (1) certified copy of United States Patent No. 9,644,204 ("the 204 patent") (Rule 210.12(a)(9)(i)) identified as Exhibit 1 to the Complaint;

10. One (1) certified copy of United States Patent No. 9,689,024 ("the 024 patent") (Rule 210.12(a)(9)(i)) identified as Exhibit 2 to the Complaint;

11. One (1) certified copy of United States Patent No. 9,695,468 ("the 468 patent") (Rule 210.12(a)(9)(i)) identified as Exhibit 3 to the Complaint;

12. A non-certified copy of the 530 patent is included with the Complaint as Exhibit 4;

13. One (1) certified copy of Reel/Frame 034454/0239, identified as Exhibit 5 to the Complaint, corresponds to a portion of the assignment of the 204 patent (Rule 210.12(a)(9)(ii));

14. One (1) certified copy of Reel/Frame 034795/0154, identified as Exhibit 6 to the Complaint, corresponds to a portion of the assignment of the 204 patent (Rule 210.12(a)(9)(ii));

15. One (1) certified copy of Reel/Frame 035519/0247, identified as Exhibit 7 to the Complaint, corresponds to a portion of the assignment of the 024 patent (Rule 210.12(a)(9)(ii));

16. One (1) certified copy of Reel/Frame 035524/0530, identified as Exhibit 8 to the Complaint, corresponds to a portion of the assignment of the 024 patent (Rule 210.12(a)(9)(ii));

17. One (1) certified copy of Reel/Frame 041770/0145, identified as Exhibit 9 to the Complaint, corresponds to a portion of the assignment of the 024 patent (Rule 210.12(a)(9)(ii));

18. One (1) certified copy of Reel/Frame 035519/0252, identified as Exhibit 10 to the Complaint, corresponds to a portion of the assignment of the 468 patent (Rule 210.12(a)(9)(ii));

19. One (1) certified copy of Reel/Frame 035524/0559, identified as Exhibit 11 to the Complaint, corresponds to a portion of the assignment of the 468 patent (Rule 210.12(a)(9)(ii));

20. One (1) certified copy of Reel/Frame 041769/0507, identified as Exhibit 12 to the Complaint, corresponds to a portion of the assignment of the 468 patent (Rule 210.12(a)(9)(ii));

21. A non-certified copy of Reel/Frame Number 43002/0692 corresponding to the assignment of the 530 patent is included with the Complaint as Exhibit 13;

22. One (1) certified and three (3) additional copies (on CDs) containing the U.S. Patent and Trademark Office prosecution history for the 204 patent (Rule 210.12(c)(1)) identified as Appendix A to the Complaint;

23. One (1) certified and three (3) additional copies (on CDs) containing the U.S. Patent and Trademark Office prosecution history for the 024 patent (Rule 210.12(c)(1)) identified as Appendix B to the Complaint;

24. One (1) certified and three (3) additional copies (on CDs) containing the U.S. Patent and Trademark Office prosecution history for the 468 patent (Rule 210.12(c)(1)) identified as Appendix C to the Complaint;

25. Four (4) non-certified copies (on CDs) containing the U.S. Patent and Trademark Office prosecution history for the 530 patent (Rule 210.12(c)(1)) identified as Appendix D to the Complaint;

26. Four (4) copies (on CDs) containing all the technical references mentioned in the prosecution history for the 204 patent (Rule 210.12(c)(2)) identified as Appendix E to the Complaint;

27. Four (4) copies (on CDs) containing all the technical references mentioned in the prosecution history for the 024 patent (Rule 210.12(c)(2)) identified as Appendix F to the Complaint;

28. Four (4) copies (on CDs) containing all the technical references mentioned in the prosecution history for the 468 patent (Rule 210.12(c)(2)) identified as Appendix G to the Complaint;

29. Four (4) copies (on CDs) containing all the technical references mentioned in the prosecution history for the 530 patent (Rule 210.12(c)(2)) identified as Appendix H to the Complaint;

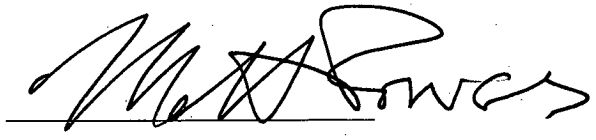
30. An original and nine (9) copies of a letter and certification pursuant to Commission Rules 201.6(b) and 210.5(d) requesting confidential treatment of Confidential Exhibits 16, 17, 28, 43-48, 54, 58, 86, 100, 100A 108, 109, 113, and 121;

31. One FedEx self-addressed envelope containing one (1) "return copy" of the **CONFIDENTIAL** EDIS cover sheet, Complaint with verification, and Public Interest Statement, and one (1) "return copy" of the **NON-CONFIDENTIAL** EDIS cover sheet, Complaint with verification, and Public Interest Statement for Docket Services' receipt stamp and return to Tensegrity Law Group LLP.

Thank you for your attention to this matter. Please contact the undersigned if there are any questions pertaining to this submission.

Respectfully submitted,

TENSEGRITY LAW GROUP



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January 9, 2018 **VIA FEDEX**

The Honorable Lisa R. Barton
Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

**Re: In the Matter of Certain Microfluidic Systems And Components Thereof And Products Containing Same, Inv. No. 337-TA-___**

Dear Secretary Barton:

In accordance with Commission Rules 201.6 and 210.5, Complainant 10X Genomics, Inc. respectfully requests confidential treatment of certain confidential business information contained in confidential exhibits 16, 17, 28, 43-48, 54, 58, 86, 100, 100A, 108, 109, 113, and 121 to the verified Enforcement Complaint.

In accordance with Commission Rules of Practice and Procedure, a request for confidential treatment of Confidential Exhibit Nos. 16, 17, 28, 43-48, 54, 58, 86, 100, 100A, 108, 109, 113, and 121 is also included with this submission.

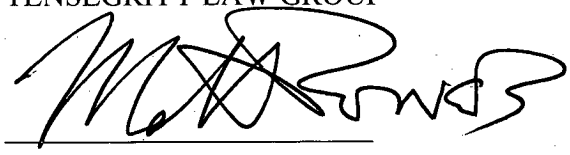
The information in the exhibits for which Complainant seeks confidential treatment consists of includes: 10X Genomics, Inc. confidential technical and business information in support of domestic industry (Exs. 28, 43-48, 54, 86, 100, 100A, 109); articles that are not publicly available without purchase (Exs. 16, 17, 58, 108); the identity of a third party whose relationship to the subject matter of the verified Enforcement Complaint is confidential (Ex. 113); and confidential third-party market information (Ex. 121).

This information qualifies as confidential business information under Commission Rule 201.6 because substantially identical information is not available to the public, because the disclosure of this information would cause substantial competitive harm to Complainant, and because the disclosure of this information would likely impede the Commission's efforts and ability to obtain similar information in the future.

Thank you for your attention to this matter. Please contact me with any questions pertaining to this request.

Sincerely,

TENSEGRITY LAW GROUP



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**UNITED STATES INTERNATIONAL TRADE COMMISSION**
**WASHINGTON, D.C.**

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| **In the Matter of**<br><br>**CERTAIN MICROFLUIDIC SYSTEMS AND COMPONENTS THEREOF AND PRODUCTS CONTAINING SAME** | **Investigation No. 337-TA-_____** |

# COMPLAINANT 10X GENOMICS, INC.'S STATEMENT CONCERNING THE PUBLIC INTEREST

## I. INTRODUCTION

Pursuant to Commission Rule 210.8(b), Complainant 10X Genomics, Inc. ("10X") respectfully submits this Statement Concerning Public Interest regarding the remedial orders 10X seeks against Proposed Respondent Bio-Rad Laboratories, Inc. ("Bio-Rad"). 10X seeks a permanent limited exclusion order barring from entry to the United States certain microfluidic systems or components thereof (the "Accused Products") that are used to infringe one or more claims of U.S. Patent Nos. 9,644,204 ("the 204 Patent"); 9,689,024 ("the 024 Patent"); 9,695,468 ("the 468 Patent"); and 9,856,530 ("the 530 Patent") (collectively, "the Asserted Patents"). Without being limited to the following named products and components, the Accused Products are any and all microfluidic chips or cartridges ("Accused Microfluidic Cartridges") and any other products or components that are imported, made, used, sold, and/or offered for sale by or on behalf of Bio-Rad in connection with and/or as part of Bio-Rad's Single-Cell Sequencing Solution, including without limitation Bio-Rad's ddSEQ™ Cartridges, Bio-Rad's ddSEQ™ Single-Cell Isolator, Bio-Rad's ddSEQ™ Cartridge Holder, and/or consumable or other components used with and/or as part of Bio-Rad's Single-Cell Sequencing Solution, and/or products containing the same, or any other Bio-Rad products that embody like functionality involving partitioning genetic material in droplets with gel beads with attached barcode molecules and forming barcoded polynucleotide molecules.

The Commission has long recognized the strong public interest in enforcing and protecting intellectual property rights. *See, e.g., Certain Baseband Processor Chips and Chipsets et al.*, Inv. No. 337-TA-543, Comm'n Op. at 136-37 (June 19, 2007) ("we must take into account the strong public interest in enforcing intellectual property rights"). 10X's requested remedial orders protect its valid intellectual property rights under rightfully issued U.S. Patents. The requested remedial orders would not adversely affect the public interest by depriving the public

of any essential or needed products at least because: (1) the exclusion of Bio-Rad's Accused Products will not deprive the public of products necessary for important public health or welfare need; (2) 10X's products directly competing with the Accused Products are readily available substitutes; and (3) 10X has the capacity to fill any demand in the market that would otherwise be unmet as a result of the requested remedial orders. Accordingly, the public interest in protecting 10X's intellectual property rights outweighs any potentially adverse impact.

## II. HOW THE ARTICLES POTENTIALLY SUBJECT TO THE REQUESTED REMEDIAL ORDERS ARE USED IN THE UNITED STATES

The Accused Products subject to the requested remedial orders, which, as defined above, include at least Bio-Rad's Single-Cell Sequencing Solution including without limitation Bio-Rad's ddSEQ™ Cartridges, Bio-Rad's ddSEQ™ Single-Cell Isolator, and/or consumable or other components and/or products containing the same, are used to isolate single cells and to barcode transcriptomes of single cells for downstream sequencing. Bio-Rad's Single-Cell Sequencing solution can be used for basic scientific and medical research.

## III. THERE ARE NO KNOWN PUBLIC HEALTH, SAFETY, OR WELFARE CONCERNS RELATING TO THE REQUESTED REMEDIAL ORDERS

To the best of 10X's knowledge, information, and belief, there are no public health, safety, or welfare concerns relating to the requested remedial orders. Bio-Rad's Single-Cell Sequencing Solution, including its ddSEQ™ Single-Cell Isolator and the ddSEQ™ Cartridges, is sold for research purposes. *See e.g.*, **Ex. 35** at i. 10X is aware of no evidence that Bio-Rad's Accused Products have been widely used in published scientific research, and even if they were, 10X's products can readily replace the Accused Products if they are excluded from the United States or otherwise subject to remedial orders, as described below, precluding any potentially adverse impact the remedial orders might have on the public health.

## IV. "LIKE" OR "DIRECTLY COMPETING" ARTICLES THAT 10X SUPPLIES

**CAN REPLACE THE SUBJECT ARTICLES IF THEY ARE EXCLUDED**

10X is a leading innovator of next generation sequencing ("NGS") solutions. 10X's sample partitioning, barcoding, and sequencing solutions for genomic and single cell research have been commercially available in the United States since 2015. 10X launched its GemCode™ products in early 2015 and its Chromium™ products in early 2016.

10X's covered products, and in particular 10X's Single Cell 3' Solution, provide similar functionality provided by the Accused Products for examining the transcriptomes of individual cells. As explained further in the Complaint, 10X's products perform better than the Accused Products according to factors important to the single-cell sequencing applications at issue. For example, 10X's Chromium™ Single Cell 3' product currently achieves above 56% cell recovery rate in a cell sample that can range from 870 cells to 17,400 cells. *See* **Ex. 30** at 6. In comparison, Bio-Rad's product recovers only about 300 cells from the required 11,250 cells per sample, which is a cell recovery rate of 2.7%, at least 20 times lower than the cell recovery rate of 10X's Single Cell 3' product. **Ex. 31** at 1, 8. Given that Bio-Rad's product wastes a majority of cells sampled and only recovers approximately 300 cells per sample, 10X's product is better able to support research with limited or rare cell samples or any research requiring a higher output. In addition, 10X's Chromium™ product-line provides additional functionality (e.g., Genome, Exome, Single Cell V(D)J, and *de novo* assembly) not provided by the Accused Products. 10X's products can meet demand for the Accused Products (but the reverse is not true).

Bio-Rad contends in Investigation No. 337-TA-1068 that several third-party products can replace the 10X accused products, including that products by Wafergen, Fluidigm, Becton Dickenson, 1CELLBIO, and others are "acceptable substitutes" to 10X's products. *See Certain Microfluidic Devices*, Inv. No. 337-TA-1068, Complainant's Reply to Respondent's Comments on Public Interest at 3-4 (Aug. 17, 2017) [hereinafter Bio-Rad 1068 P.I. Reply]. 10X disagrees

that any of these products, including Bio-Rad's products as explained above, can be acceptable substitutes to 10X's products because they do not match the functionality and performance of 10X's products. But given 10X's superior functionality and performance as outlined above, Bio-Rad's position in the above-cited investigation means that Bio-Rad cannot dispute that these third-party products could replace Bio-Rad's Accused Products. *See id.* In any event, as explained above, 10X's products can meet the demand for the Accused Products.

## V. 10X ALONE OR TOGETHER WITH THIRD PARTIES CAN REPLACE THE ARTICLES SUBJECT TO THE REQUESTED REMEDIAL ORDERS

10X has the capacity to replace the Accused Products subject to the remedial orders in a commercially reasonable time and provide sufficient substitutes. [redacted]

[redacted] Therefore, 10X can replace the Accused Products.

10X has made approximately [redacted] of its sales outside of North America (and the percentage outside of the U.S. is higher). *See* **Ex. 48** ¶ 14. Although not necessary, 10X could divert a portion of its supply destined for foreign purchasers to fill any unmet demand in the U.S. resulting from the requested remedial orders. Further, as explained above, Bio-Rad has argued that other third parties can also adequately provide acceptable substitutes to 10X's products. Bio-Rad's position, while wrong given 10X's superior performance and functionality, means that Bio-Rad cannot dispute that those third parties could replace the Bio-Rad products at issue here. *See* Bio-Rad 1068 P.I. Reply at 3-4.

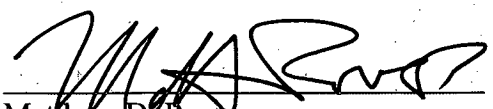
## VI. THE REQUESTED REMEDIAL ORDERS WOULD NOT HAVE SUBSTANTIAL IMPACT ON CONSUMERS

For the reasons above, the requested remedial orders would have no adverse impact on U.S. consumers. Consumers can purchase 10X products that are readily available substitutes for the Accused Products. 10X can adequately supply and meet the demands of the United States market and fill any void left by the exclusion of the Accused Products.

## VII. CONCLUSION

There are no public interest concerns that would preclude the requested remedial orders.

Dated: January 9, 2018 Respectfully submitted,



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**UNITED STATES INTERNATIONAL TRADE COMMISSION**
**WASHINGTON, D.C.**

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| **In the Matter of**<br><br>**CERTAIN MICROFLUIDIC SYSTEMS AND COMPONENTS THEREOF AND PRODUCTS CONTAINING SAME** | **Investigation No. 337-TA-_____** |

# PUBLIC VERIFIED COMPLAINT UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED


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## TABLE OF SUPPORTING MATERIALS

## EXHIBITS

Communications, Vol. 8, Issue 1, Article 1627 (November 20, 2017), available at https://www.nature.com/articles/s41467-017-01560-x.pdf

16. **CONFIDENTIAL** Haber A. et al., "A single-cell survey of the small intestinal epithelium," Nature, Vol 551, pp. 333-360 (November 8, 2017)

17. **CONFIDENTIAL** Stoeckius M. et al., "Simultaneous epitope and transcriptome measurement in single cells," Nature Methods, Vol. 14, No. 9 (Sept. 2017)

18. Yan K. et al., "Intestinal Enteroendocrine Lineage Cells Possess Homeostatic and Injury-Inducible Stem Cell Activity," Cell Stem Cell, Vol. 21, (July 6, 2017), available at https://www.ncbi.nlm.nih.gov/pubmed/28686870

19. Adamson B. et al., "A Multiplexed Single-Cell CRISPR Screening Platform Enables Systematic Dissection of the Unfolded Protein Response," Cell, Vol. 167, Issue 7, pp1867–1882.e21 (December 15, 2016), available at https://www.ncbi.nlm.nih.gov/pubmed/27984733

20. Dixit A. et al., "Perturb-Seq: Dissecting Molecular Circuits with Scalable Single-Cell RNA Profiling of Pooled Genetic Screens," Cell, Vol. 167, pp. 1853-1866 (December 15, 2016), available at https://www.ncbi.nlm.nih.gov/pubmed/27984732

21. "SITC 2017 SCIENTIFIC HIGHLIGHTS - NOV. 11," The Sentinel, available at http://blog.sitcancer.org/2017/11/sitc-2017-scientific-highlights-nov-11.html#more

22. 10x Genomics Technical Note: An Introduction to Linked-Read Technology for a More Comprehensive Genome and Exome Analysis, available at https://assets.contentful.com/an68im79xiti/6ceYcRzVAc6MaSMeyO0akE/4d9f269143be9e1750a415e1d5aa6762/CG00044_10x_Techical_Note_LinkedReads.pdf

23. Greer S. et al., "Linked read sequencing resolves complex genomic rearrangements in gastric cancer metastases," Genome Medicine, 2017, available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5477353/

24. Spies N. et al., "Genome-wide reconstruction of complex structural variants using read clouds," Nature Methods, July 17, 2017, available at https://www.ncbi.nlm.nih.gov/pubmed/28714986

25. Narasimhan V. et al., "Health and population effects of rare gene knockouts in adult humans with related parents," Science, Author manuscript, available at

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4985238/;
http://science.sciencemag.org/content/sci/352/6284/474.full.pdf

26. Zheng G. et al., "Massively parallel digital transcriptional profiling of single cells," Nature Communications, Jan. 16, 2017, available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5241818/

27. Yan K. et al., "Non-equivalence of Wnt and R-spondin ligands during $Lgr5^+$ intestinal stem-cell self-renewal," Nature, Vol. 545, May 11, 2017, available at https://www.ncbi.nlm.nih.gov/pubmed/28467820

28. **CONFIDENTIAL** 10X Technologies, Changing the Definition of Sequencing: Presentation to Venrock, Dec. 1, 2014

29. Farmer D. et al., "Defining epithelial cell dynamics and lineage relationships in the developing lacrimal gland," Development, 2017, available at https://www.ncbi.nlm.nih.gov/pubmed/28576768

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## APPENDICES

| Appendix | ItemDescription |
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| B. | Prosecution History of U.S. Patent No. 9,689,024 |
| C. | Prosecution History of U.S. Patent No. 9,695,468 |
| D. | Pertinent File History of U.S. Patent No. 9,856,530 (Non-Certified Copy, Certified Copy Forthcoming) |
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| F. | Cited References of U.S. Patent No. 9,689,024 |
| G. | Cited References of U.S. Patent No. 9,695,468 |
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## I. INTRODUCTION

1. Complainant 10X Genomics, Inc. ("10X") requests that the United States International Trade Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, based on the unlawful importation into the United States, the sale for importation, or the sale within the United States after importation by or on behalf of proposed respondent Bio-Rad Laboratories, Inc. ("Bio-Rad" or "Proposed Respondent") of certain microfluidic systems, components thereof, or products containing the same (collectively, "the Accused Products"), which infringe one or more of the following claims of U.S. Patent Nos. 9,644,204 ("the 204 Patent"); 9,689,024 ("the 024 Patent"); 9,695,468 ("the 468 Patent"); and 9,856,530 ("the 530 Patent") (collectively, "the Asserted Patents"), either literally or under the Doctrine of Equivalents.

| **Asserted Patent** | **Asserted Claims**[1] |
|---|---|
| U.S. Patent No. 9,644,204 | Claims **1**, 2, 3, 4, 6, 7, 8, 9, 17, 20, 21, **23**, **25**, 27, 29, 31, and 33 |
| U.S. Patent No. 9,689,024 | Claims **1**, 2, 5, 8, 10, 11, 13, 15, 16, 17, 19, 21, and 22 |
| U.S. Patent No. 9,695,468 | Claims **1**, 2, 3, 4, 6, 7, 8, 9, 11, 12, 21, and 22 |
| U.S. Patent No. 9,856,530 | Claims **1**, 2, 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 24, 25, 26, 27, 28, 29, and 30 |

2. Certified copies of each of the Asserted Patents are attached as **Exhibits 1-4**. 10X owns all right, title, and interest in the 204, 024, 468, and 530 Patents. Copies of the recorded assignments for each of the Asserted Patents[2] are attached as **Exhibits 5-13**. Copies of the prosecution histories for each of the Asserted Patents are attached as **Appendices A-D**.

[1] Independent claims are listed with bold text.

[2] The 530 Patent was recently issued on January 2, 2018. 10X has ordered but has not yet received the certified patent, certified file history, and certified recorded assignment. 10X will submit the certified versions of these documents as soon as they are received.

3. The Proposed Respondent is Bio-Rad Laboratories, Inc. Without being limited to the following named products and components, the Accused Products are any and all microfluidic chips or cartridges ("Accused Microfluidic Cartridges") and any other products or components that are imported, made, used, sold, and/or offered for sale by or on behalf of Bio-Rad in connection with and/or as part of Bio-Rad's Single-Cell Sequencing Solution, including without limitation Bio-Rad's ddSEQ™ Cartridges, Bio-Rad's ddSEQ™ Single-Cell Isolator, Bio-Rad's ddSEQ™ Cartridge Holder, consumable or other components used with and/or as part of Bio-Rad's Single-Cell Sequencing Solution, and/or products containing the same, or any other Bio-Rad products that embody like functionality involving partitioning genetic material in droplets with gel beads with attached barcode molecules and forming barcoded polynucleotide molecules. On information and belief, at least the Accused Microfluidic Cartridges, components thereof, or products containing the same are manufactured or assembled outside of the United States and sold for importation into the United States, imported into the United States, and/or sold within the United States after importation—by or on behalf of Proposed Respondent Bio-Rad. The Accused Microfluidic Cartridges in combination with other Accused Products specifically designed for use with the Accused Microfluidic Cartridges, infringe one or more Asserted Claims of the Asserted Patents.

4. As required by 19 U.S.C. § 1337(a)(2) and (3), an industry in the United States relating to articles protected by the Asserted Patents exists based on 10X's products protected by the Asserted Patents.

5. Complainant seeks, as relief, a permanent limited exclusion order barring from entry into the United States all of Proposed Respondent's imported Accused Products that infringe or are used to infringe one or more of the claims of any of the Asserted Patents,

including directly or indirectly and whether literally or under the Doctrine of Equivalents. Complainant also seeks a permanent cease and desist order prohibiting the sale for importation, importation, sale after importation, making, use, offer for sale, sale, distribution, advertising, testing, repair, technical support, or any other commercial activity conducted by or on behalf of Bio-Rad related to Proposed Respondent Bio-Rad's Accused Products that infringe or are used to infringe, directly or indirectly and literally or under the Doctrine of Equivalents, one or more claims of any of the Asserted Patents. Further, Complainant requests that the Commission impose a bond during the Presidential review period pursuant to 19 U.S.C. § 1337(e)(1) and (f)(1) to prevent further injury to the domestic industry of 10X relating to each of the Asserted Patents.

## II. COMPLAINANT

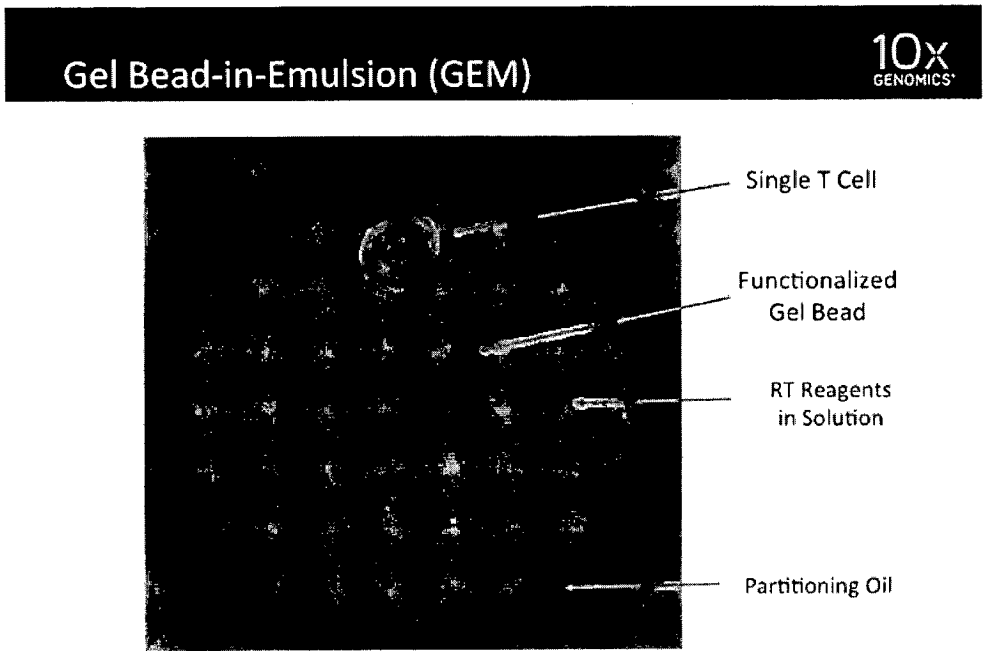
6. 10X Genomics was founded in Pleasanton, California, in 2012, by Dr. Serge Saxonov, Dr. Benjamin Hindson, and Dr. Kevin Ness, who were former employees of QuantaLife and were briefly employed by Bio-Rad after Bio-Rad purchased QuantaLife. After leaving Bio-Rad, the 10X founders pursued innovative approaches for Next Generation Sequencing ("NGS") technology. NGS relates to advanced methods to determine the precise order of nucleotides ("A," "T," "C," "G") in nucleic acids such as, for example, DNA. NGS promises to advance and in many cases has already advanced the state of the art in life sciences and medicine. [redacted]

7. 10X launched its GemCode™ product in February 2015 and its Chromium™ product line in early 2016. The current Chromium™ product line includes the Chromium™ Genome/Exome Solutions, the Chromium™ Single Cell 3' Solution, the Chromium™ Single Cell V(D)J Solution, and the Chromium™ Solution *de novo* Assembly Solution. 10X's products

include 10X-designed microfluidic chips, 10X instruments, gel beads with large numbers (e.g. millions) of oligonucleotide barcode molecules attached to the gel beads, and various other reagents. 10X's products provide innovative sample partitioning, barcoding, and sequencing preparation solutions, which work in coordination with existing sequencers to allow users to access a wealth of new and different types of genomic information.

8. 10X's products are built upon its GemCode™ technology[3], a multifaceted and interdisciplinary set of proprietary techniques relating to **Ge**l Beads in **Em**ulsion ("GEMs"). 10X's products generate GEMs of which a subset contain a nucleic acid sample (e.g., the mRNA from a cell), reagents, and a gel bead with barcode molecules. [redacted]

[3] Referred to interchangeably herein as "GEM technology".




**Ex. 96** (Training module of Chapter 2 - GemCode Technology and the Single Cell 3' Solution), available at http://go.10xgenomics.com/training-modules/single-cell-gene-expression) at 5:45.

9. 10X's GEM technology is an innovative advancement in sample partitioning, barcoding, and sequencing preparation technology. 10X has used its GEMs—along with other technologies—to address at least two cutting-edge problems in the sequencing industry: (1) analyzing large numbers of single cell transcriptomes in parallel; and, (2) accessing DNA sequence information over long ranges (i.e. longer sequences of DNA nucleotides) more completely and effectively. 10X's GEM technology addresses these problems by a ground-breaking paradigm of partitioning different sources of sample nucleic acid (e.g., different cells, or different long DNA molecules) into separate GEMs, and by tagging the nucleic acid contents of GEMs with oligonucleotide barcodes having a sequence specific to that GEM. After the contents of these GEMs are collectively sequenced, the barcodes indicate the GEM—and hence the source—from which the sequenced nucleic acids originated. Thus, nucleic acids with a

shared barcode can be identified as coming from a given single cell or long DNA molecule that was in a particular GEM.

10. 10X's gel beads created using 10X's proprietary technology are key to barcoding the contents of a GEM. 10X creates a large pool of oligonucleotide barcode populations having distinct barcode sequences. These barcode molecules are attached to porous gel beads. Each gel bead has large numbers of barcode molecules that include a common barcode sequence, which distinguishes barcode molecules from a given bead from those of other beads. The gel beads are used as vehicles to deliver a set of barcode molecules sharing a common barcode sequence into a particular GEM, allowing one GEM to be distinguished from another by virtue of the barcode sequence on the encapsulated gel bead. 10X's market-leading microfluidic chip design and chemistry allows a high proportion of GEMs to contain one and only one bead.

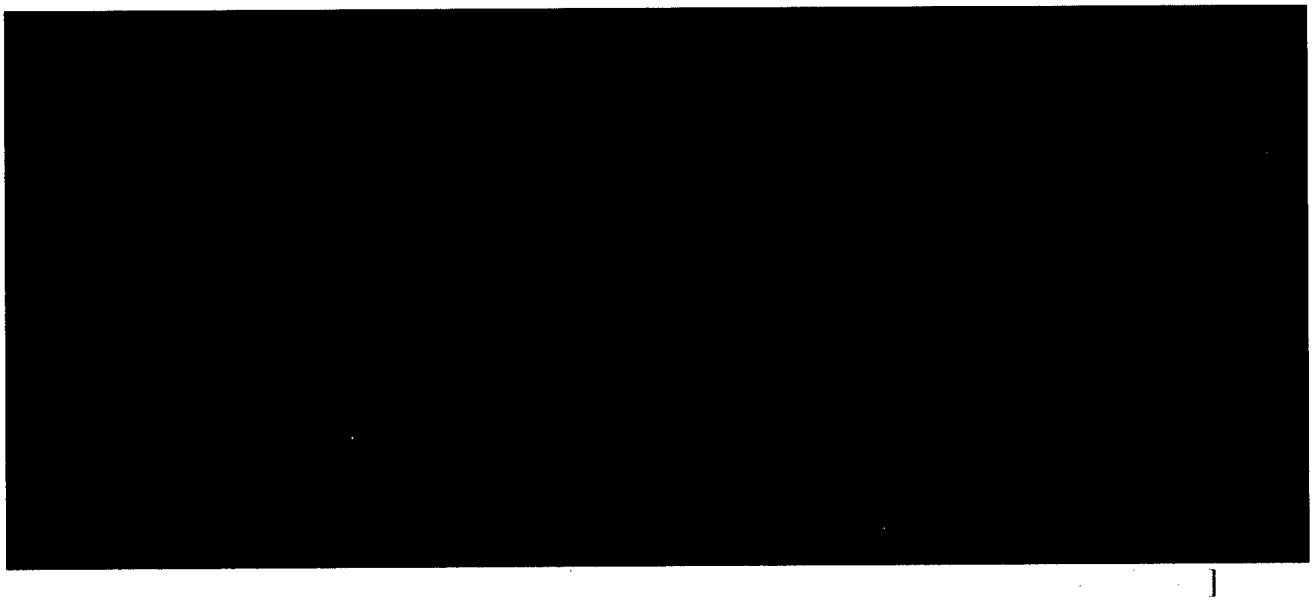
11. GEMs containing gel beads serve as miniature reactors in which barcoded nucleic acids containing the sequence information of the sample nucleic acids in the GEM are created. Gel beads are formulated with a 10X proprietary chemistry that allows them to dissolve and release their contents—e.g., barcode molecules—inside GEMs upon the application of a stimulus. Barcode molecules can attach to sample nucleic acids inside the GEM and undergo various biochemical reactions to generate barcoded nucleic acids containing the sequence information of the sample nucleic acid. For example, the barcode molecules attach to mRNA from a single cell encapsulated within the GEM. The sequence information of the mRNA is then linked to the barcode sequence using reverse transcription. Once the sample nucleic acid has been "barcoded" or "tagged" in such fashion, it can be sequenced while using the barcode to preserve valuable information about the origin of the nucleic acid. The barcode sequence can convey a variety of information about the origin of the sample nucleic acid, including the cell or molecule of origin.

This origin information is not available in a conventional NGS solution. 10X's GEM-based sequencing products thus represents a fundamental and groundbreaking advance over prior sequencing applications.

12. Major medical research institutions and many life science researchers in the United States and around the world are using 10X's GEM technology to perform groundbreaking work for potentially life-saving discoveries. 10X's GEM technology is helping researchers understand how cancers arise from genetic mutations, how stem cells grow and differentiate, and how to improve prenatal testing for genetic disease. The Scientist magazine, which covers the latest developments in life sciences research, technology, and business, named 10X's GemCode™ Technology as Number One on its list of the "Top Ten Innovations [of] 2015," and again in 2017. **Ex. 14** (*Top 10 Innovations 2015*, The Scientist (Dec. 1, 2015), http://www.the-scientist.com/?articles.view/articleNo/44629/title/Top-10-Innovations-2015/); **Ex. 101** (*2017 Top 10 Innovations*, The Scientist (Dec. 1, 2017), https://www.the-scientist.com/?articles.view/articleNo/50969/title/2017-Top-10-Innovations/).

13. As an example, enabled by its GEM technology, 10X's Chromium™ Single Cell 3' Solution product, which launched in early 2016, represents a significant advancement over conventional gene expression solutions. The Chromium™ Single Cell 3' Solution provides high-throughput expression measurements of single cells that enable dynamic profiling of the transcriptome of large numbers of cells on a cell-by-cell basis. This also enables comparing gene expression across different cells. Whereas the genome can be thought of as a book of recipes, the transcriptome represents the recipes that are actually being made at any given moment by a given cell. Thus, a brain cell can be very different from a muscle cell despite sharing the same genome because their transcriptomes are different. 10X's Chromium™ Single Cell 3' Solution profiles

the transcriptome by sequencing the messenger RNAs ("mRNAs") of individual cells, which are indicative of which genes are turned on and off, at single-cell resolution, for tens of thousands of cells in a single experiment. In contrast, conventional gene expression solutions do not differentiate transcriptomes from different cells and do not address the variances of gene expression among different cells. For example, gene expression may vary between a normal cell and a cancer cell in a patient. 10X's Single Cell 3' Solution can yield valuable information on the possible genetic cause of the cancer that would not otherwise be revealed using a conventional gene expression solution, and which may assist in selecting a treatment for the cancer. [redacted]



]

By accessing the transcriptomes of individual cells using GEMs, 10X is revolutionizing studies of gene expression at single cell resolution, which has a significant impact on medical and life sciences research.

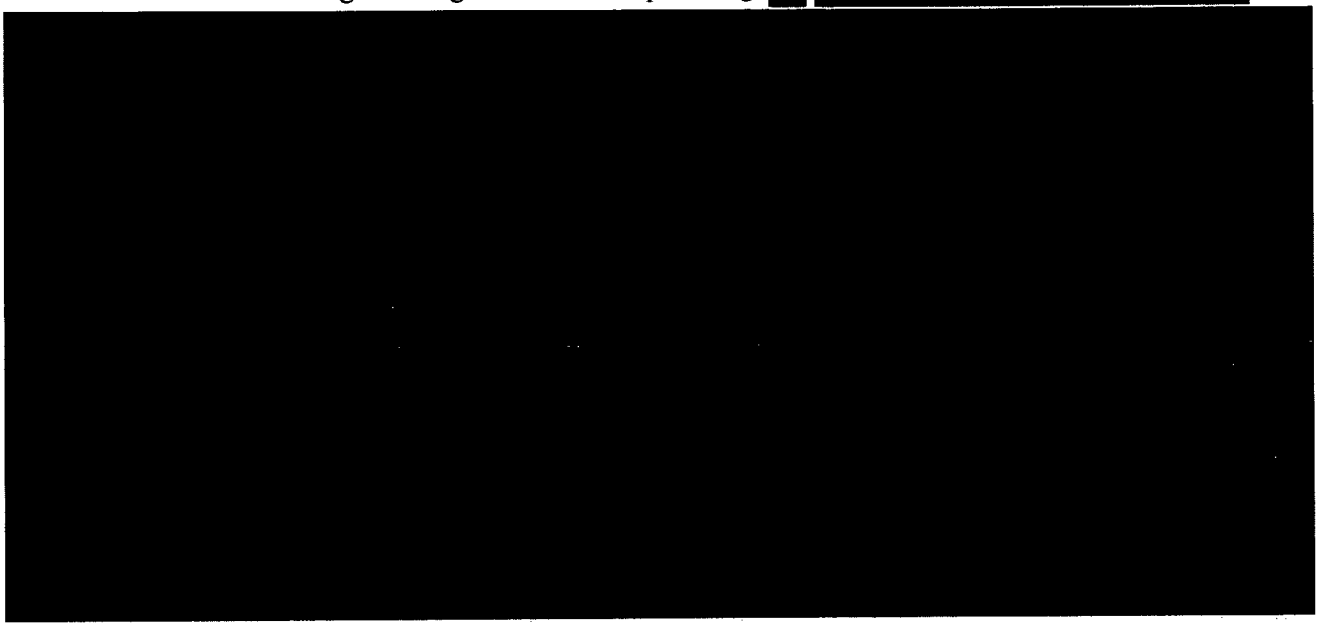
14. In just the past six months alone, 10X's Single Cell 3' Solution has been cited in at least 24 new scientific studies including in top publications within the research fields of neurology, immunology, stem cells, infectious disease, and cancer, as examples. Multiple teams

of researchers at U.C. San Francisco, the Broad Institute of MIT, and Harvard are using the Chromium™ Single Cell 3' Solution to develop novel applications like Perturb-seq, a method using 10X technology in conjunction with CRISPR gene editing technology, to systematically study the function of thousands of genes in parallel. *See* **Exs. 19-20** (https://www.ncbi.nlm.nih.gov/pubmed/27984733; https://www.ncbi.nlm.nih.gov/pubmed/27984732). As another example, Dr. Kelly Paulson at the Fred Hutchinson Cancer Research Center successfully identified the mechanisms of acquired immunotherapy resistance in Merkel Cell carcinoma using 10X's Single Cell 3' Solution. Dr. Paulson's research summary entitled "***[n]ovel*** single cell analyses offer unique insight into acquired immunotherapy resistance in patients with Merkel cell carcinoma," states that "[u]sing ***novel*** single-cell RNA sequencing technologies (scRNAseq) to assess mixed tumor cell populations across the patient timeline, researchers observed that CD8+ T cells overexpressed genes related to cell division, activation, and glycolysis during the initial immune response and tumor regression. . . . Additionally, researchers provided a foundation for using scRNAseq to better understand acquired immunotherapy resistance in other malignancies." *See* **Ex. 21** (http://blog.sitcancer.org/2017/11/sitc-2017-scientific-highlights-nov-11.html#more) (emphasis added). Further, published work by researchers in the U.S. using the Chromium™ Single Cell 3' Solution includes studies of: (a) how white blood cell diversity affects immune system function, *see* **Ex. 26** (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5241818/); (b) how human intestinal stem cells renew and regenerate, *see* **Exs. 27, 18** (https://www.ncbi.nlm.nih.gov/pubmed/28467820; https://www.ncbi.nlm.nih.gov/pubmed/28686870); and, (c) how human tear-producing glands develop and function, *see* **Ex. 29** (https://www.ncbi.nlm.nih.gov/pubmed/28576768).

15. Also built on its GEM technology and directed to profiling lymphocytes, 10X's Chromium™ Single Cell V(D)J Solution is a comprehensive and scalable tool for enabling high-definition immunology research. The solution profiles full-length paired V(D)J transcripts from hundreds to millions of lymphocytes, enabling assembly of the complete V(D)J sequences from T Cell Receptor and the B Cell immunoglobulin on a cell-by-cell basis. Thus, 10X's Single Cell V(D)J solution provides insights into genetic recombination of the V(D)J segment—the defining feature of the adaptive immune system. The technology enables finding that "one-in-a-million" circulating T cell that will attack a specific tumor cell.

16. Providing an unparalleled solution to uncover new information about the genome, 10X's Chromium™ Genome & Exome and *de novo* Assembly Solutions, using 10X's GEM technology together with its innovative and proprietary biochemistry process, create barcoded short-fragment DNAs and provide novel "linked-read" sequencing. 10X's genomic solutions perform a new step to the sequencing workflow that is not part of the conventional NGS process—namely the step of using its GEM technology to index short sequences using DNA barcodes specific to a longer sequence from which the short sequences are derived. These short fragments indexed to the longer sequence through barcoding are ready to be sequenced by existing sequencers equipped to perform only short-read sequencing—so named in reference to the number of nucleic acid base pairs the sequencer can read in an unbroken sequence. Short-read sequencing is known to have a number of significant drawbacks that result in delivering only a fraction of a genome's value and failing to provide insights on haplotypes, structural variants, and *de novo* assembly. In comparison, 10X's linked-read products uncover additional information that is normally lost during traditional short-read sequencing. 10X's linked-read

products provide significant improvements to the completeness and the value of the information that can be obtained using existing short-read sequencing, [redacted]



17. For example, on average, a standard Chromium™ Genome run provides 150 times the physical coverage and 30 times the sequence coverage at a given locus as compared to synthetic long reads. *See* **Ex. 22** (10x Technical Note re: Linked-Read Technology *available at* https://assets.contentful.com/an68im79xiti/6ceYcRzVAc6MaSMeyO0akE/4d9f269143be9e1750a415e1d5aa6762/CG00044_10x_Techical_Note_LinkedReads.pdf). The solution helps unlock critical genetic information for variants in heritable disorders and discover key genomic alterations in cancer. As another example, the Chromium™ Exome Solution uses the power of GEM technology and linked-reads to fully resolve genetic phasing and structural variation and detect variants in previously inaccessible and complex regions of the exome. Further, the Chromium™ *de novo* Assembly Solution opens the door to low-cost, every day diploid genome assemblies. With its simple workflow, low DNA input requirements, and automated data analysis, the Chromium™ *de novo* Assembly Solution enables true diploid genome assembly in a manner that was never previously available.

18. Moreover, as compared to the huge, multimillion-dollar short-read sequencers that provide only short-range genomic information while requiring significant capital investment, space, and support, 10X's groundbreaking products include inexpensive devices with a footprint smaller than that of a common laptop computer and that function as companion products to existing sequencers to perform the additional step of using its GEM technology to tag short fragments to provide long-range genomic sequence information.

19. Due to its high performance and low cost, 10X's Chromium™ Genome & Exome and *de novo* Assembly Solutions are widely used by researchers to efficiently barcode the genomic DNAs and to reveal valuable genomic information that would not otherwise be available using short-read NGS solutions. For example, just in the United States, Chromium™ Genome and Exome are now being used to understand how genomic rearrangements cause gastric cancers to metastasize (that is, spread to different parts of the body), *see* **Ex. 23** (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5477353/), how breast cancers and sarcomas form, *see* **Ex. 24** (https://www.ncbi.nlm.nih.gov/pubmed/28714986), and how gene variants that result in loss of function affect human health, *see* **Ex. 25** (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4985238/).

20. 10X's products lead the market. For instance, Bio-Rad's products do not provide linked-read sequencing solution to analyze genomic DNA and Bio-Rad's Single-Cell Sequencing Solution delivers inferior performance to that of 10X's Single-Cell products. Further, 10X's single cell products provide market-leading rates of cell recovery and bead occupancy while maintaining a low rate of multiple cells being captured in a single droplet (known as "multiplets"). For example, 10X's Chromium™ Single Cell 3' product currently achieves above 56% cell recovery rate in a cell sample that can range from 870 cells to 17,400 cells. Specifically,

for an 870-cell sample, 10X's solution recovers about 500 cells with the cell recovery rate of 57.5% while maintaining a very low multiplet rate of 0.4%. For a 10,500-cell sample, 10X's solution recovers about 6000 cells with the cell recovery rate of 57.1% while maintaining a still low multiplet rate of 4.6%. *See* **Ex. 30** (Single Cell 3' Reagent Kits v2 User Guide) at 6. In comparison, Bio-Rad's product recovers only about 300 cells from the required 11,250 cells per sample, which is a cell recovery rate of 2.7%, at least 20 times lower than the cell recovery rate of 10X's Single Cell 3' product. **Ex. 31** (SureCell WTA 3' Library Prep Reference Guide) at 1, 8. The superiority of 10X's solutions is supported by a review by researchers at the Washington University in Saint Louis School of Medicine, who found that Chromium can barcode "100 to 80,000 cells in 10 minutes with a 65% cell capture rate," and further state that "[t]he Chromium system has caught on rapidly among scientists because it is relatively easy to operate, can generate many thousands of single-cell libraries in a short time frame, and comes with a custom bioinformatics pipeline that simplifies analysis." **Ex. 56.** (http://www.seminarsinnephrology.org/article/S0270-9295(17)30100-6/fulltext). Bio-Rad's product, however, "aims to separate and barcode 10,000 individual cells . . . in a matter of hours." *Id.* Given that Bio-Rad's single-cell product wastes a majority of the cell samples and only recovers approximately 300 cells per sample, 10X's product is better able to support research with limited or rare cell samples or any research requiring a higher output or less time. *See id.* ("This system is well suited to scRNA-seq of human kidney because of its high capture efficiency."). It is also worth noting that Bio-Rad only recently released its single cell solution in early 2017, while 10X introduced its first single-cell product in December 2015. *See* **Ex. 32** (*Illumina and Bio-Rad Launch Solution for Single-Cell Genomic Sequencing to Enable Robust Study of Complex Diseases*, Business Wire (Jan. 8, 2017 5:35 PM)

(http://www.businesswire.com/news/home/20170109006365/en/Illumina-Bio-Rad-Launch-Solution-Single-Cell-Genomic-Sequencing/). It took Bio-Rad more than a year longer than 10X just to develop this product.

21. Since 10X was founded, Bio-Rad has launched a litigation campaign against 10X, before this Commission and elsewhere, with the apparent goal of excluding 10X from the NGS market where it has become a leader. Meanwhile, 10X continues as a leading innovator in the NGS market, successfully addressing an array of difficult problems in biochemistry, engineering, and bioinformatics, and pioneering new sequencing applications that have the potential to move science forward and save lives.

## III. THE PROPOSED RESPONDENT

22. On information and belief, Proposed Respondent Bio-Rad is organized under the laws of the State of Delaware with its principal place of business at 1000 Alfred Nobel Drive, Hercules, CA 94547. *See* **Ex. 33** [Bio-Rad 10k].

23. On information and belief, Bio-Rad's relevant business includes designing, developing, manufacturing, making, using, offering for sale, and selling (including selling in the United States after importation and/or selling for importation), and/or importing into the United States the Accused Products and components thereof, including the Accused Microfluidic Cartridges or components thereof that on information and belief are manufactured outside of the United States.

## IV. THE PRODUCTS AT ISSUE

24. Pursuant to Commission Rule 210.12(a)(12), Complainant states that, without being limited to the following named products and components, the Accused Products include any and all microfluidic chips or "cartridges" ("Accused Microfluidic Cartridges") and any other products or components that are imported, made, used, sold, and/or offered for sale by or on

behalf of Bio-Rad in connection with and/or as part of Bio-Rad's Single-Cell Sequencing Solution, including without limitation Bio-Rad's ddSEQ™ Cartridges, Bio-Rad's ddSEQ™ Single-Cell Isolator, Bio-Rad's ddSEQ™ Cartridge Holder, consumable or other components used with and/or as part of Bio-Rad's Single-Cell Sequencing Solution, and/or products containing the same, or any other Bio-Rad products that embody like functionality involving partitioning genetic material in droplets with gel beads with attached barcode molecules and forming barcoded polynucleotide molecules.

25. The Accused Microfluidic Cartridges or components thereof—including Bio-Rad's ddSEQ™ Cartridges—are, on information and belief, manufactured or assembled outside of the United States and sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of Proposed Respondent Bio-Rad.

## V. THE ASSERTED PATENTS AND NON-TECHNICAL DESCRIPTIONS OF THE INVENTIONS[4]

### A. U.S. Patent No. 9,644,204

#### 1. Identification And Ownership

26. United States Patent No. 9,644,204, titled "Partitioning And Processing Of Analytes And Other Species," issued on May 9, 2017, to inventors Benjamin Hindson, Serge Saxonov, Kevin Ness, Paul Hardenbol, Christopher Hindson, Donald Masquelier, Mirna Jarosz, and Michael Schnall-Levin. *See* **Ex. 1** [204 Patent]. The 204 Patent issued from Application No. 14/175,935 filed on February 7, 2014. *Id.*

[4] The non-technical descriptions of the patented technology are provided solely for compliance with the Commission Rules and are not intended to limit, define, or otherwise affect the construction and/or application of any claim term. Complainant provides these statements without prejudice or waiver to its right to assert any and all positions with respect to claim construction.

27. The 204 Patent has 6 independent claims and 34 dependent claims. *Id.* 10X is asserting claims **1**, 2, 3, 4, 6, 7, 8, 9, 17, 20, 21, **23**, **25**, 27, 29, 31, and 33 of the 204 Patent in this investigation.

28. 10X owns by assignment the entire right, title, and interest in and to the 204 Patent. All the inventors of the 204 Patent have assigned the entire right, title, and interest in the patent and the applications from which it derives to 10X. A certified copy of the assignment from the named inventors to 10X is attached hereto. *See* **Exs. 5-6** [204 Patent Assignment].

29. Pursuant to Commission Rule 210.12(c)(1), this Complaint is accompanied by the prosecution history of the 204 Patent and three copies thereof. **Appx. A**. Pursuant to Commission rule 210.12(c)(2), this Complaint is accompanied by four copies of each technical reference identified in the prosecution history of the 204 Patent. **Appx. E**.

### 2. Non-Technical Description of the 204 Patent

30. Genetic sequencing often requires analyzing the genetic material from tissue that may contain many different cells, or gathering sequencing information from long strands of DNA. In both of these examples, using prior techniques can be inefficient and can result in a loss of important information about where specific sequences originated. For example, analyzing a sampling of a large number of a patient's individual cells from a tumor tissue sample would require conducting many reactions with the genetic material from the cells, while somehow getting unique genetic sequence information about all of the different cells. Looking at many such reactions at the same time requires an ability to separate each of these reactions from the others and to link the resulting data for each cell or DNA molecule to only that cell or DNA molecule.

31. The 204 Patent relates to new and improved ways to prepare samples, such as genetic material, for downstream analysis—such as genetic sequencing—through partitioning of

sample materials such that components of each sample can get their own set of unique, coded reagents before the reaction is allowed to start.

32. For example, the 204 Patent permits placing large numbers of tiny capsules (such as gel beads for example) that each contain reagents for processing and barcoding the sample genetic material with specific DNA "barcodes" to identify the sample genetic material later, together with sample genetic material (for example a single cell containing genetic material, or a portion of genomic DNA) inside of tiny droplets separated from other droplets by oil. The 204 Patent allows each set of unique barcode reagents to be placed separately with individual components of sample genetic material, until a stimulus or stimuli are applied and the barcodes are released from the capsule inside the droplet. These stimuli can include a change in ion concentration or the reduction of disulfide bonds. The droplet then serves as a miniature reactor for preparing the genetic sample, and the sample material gets its specific barcode. The sample material in the droplets can then be pooled and subsequently analyzed, such as through genetic sequencing. The barcodes can then be used to tell which sequences came from which sample material.

33. Thus, the 204 Patent represents a significant advance in sample preparation technology, and specifically genetic sequencing and analysis technology. The 204 Patent permits the fast and efficient preparation of large numbers of components of genetic samples for sequencing, while maintaining information that identifies the individual components of the genetic samples, which can make the genetic sequencing process far more efficient and informative than using conventional methods. The 204 Patent advances the technology of sample preparation by allowing high throughput generation of large numbers of tiny individually

partitioned sample components, and thereby provides the efficiency and information benefits for subsequent analysis such as genetic sequencing.

### 3. Foreign Counterparts to the 204 Patent

34. The following foreign patents and patent applications correspond to the 204 Patent, and there are no others:

| U.S. Patent No. 9,644,204 | | | | | |
|---|---|---|---|---|---|
| Application Date | Application Number | Status | Patent Date | Patent No. | Country |
| 8/6/15 | 2900543 | Pending | | | CA |
| 8/21/15 | 14748569 | Published | | | EPO |
| 2/7/14 | PCT/US14/15424 | Expired | | | WIPO |

### 4. Licenses Related to the 204 Patent

35. [redacted]

## B. U.S. Patent No. 9,689,024

### 1. Identification And Ownership

36. United States Patent No. 9,689,024, titled "Methods For Droplet-Based Sample Preparation," issued on June 27, 2017, to inventors Benjamin Hindson, Serge Saxonov, and Michael Schnall-Levin. *See* **Ex. 2** [024 Patent]. The 024 Patent issued from Application No. 14/624,468 filed on February 17, 2015. *Id.*

37. The 024 Patent has 1 independent claim and 21 dependent claims. *Id.* 10X is asserting claims **1**, 2, 5, 8, 10, 11, 13, 15, 16, 17, 19, 21, and 22 of the 024 Patent in this investigation.

38. 10X owns by assignment the entire right, title, and interest in and to the 024 Patent. All the inventors of the 024 Patent have assigned the entire right, title, and interest in the patent and the applications from which it derives to 10X. A certified copy of the assignment from the named inventors to 10X is attached hereto. *See* **Exs. 7-9** [Patent Assignment].

39. Pursuant to Commission Rule 210.12(c)(1), this Complaint is accompanied by the prosecution history of the 024 Patent and three copies thereof. **Appx. B**. Pursuant to Commission rule 210.12(c)(2), this Complaint is accompanied by four copies of each technical reference identified in the prosecution history of the 024 Patent. **Appx. F**.

### 2. Non-Technical Description of the 024 Patent

40. Genetic sequencing often requires analyzing the genetic material from tissue that may contain many different cells, or gathering sequencing information from long strands of DNA. In both of these examples, using prior techniques can be inefficient and can result in a loss of important information about where specific sequences originated. For example, analyzing a sampling of a large number of a patient's individual cells from a tumor tissue sample would require conducting many reactions with the genetic material from the cells, while somehow getting unique genetic sequence information about all of the different cells. Looking at many such reactions at the same time requires an ability to separate each of these reactions from the others and to link the resulting data for each cell or DNA molecule to only that cell or DNA molecule.

41. The 024 Patent relates to a novel method of sample preparation for nucleic acids that involves barcoding nucleic acid sample material, which can then be used in downstream analysis such as genetic sequencing. For example, the 024 Patent permits the generation of at least a subset of droplets that contain a porous gel bead with one million barcode molecules with the same sequence and a nucleic acid to be analyzed, such as a messenger RNA molecule in a

cell. These oligonucleotide barcode molecules are releasably attached to the porous gel bead. When the barcode molecules are released from a gel bead into a droplet upon application of a stimulus, the released barcode molecules attach to the nucleic acid to be analyzed. A barcoded nucleic acid to be analyzed can then be generated. The nucleic acids from multiple cells can then be pooled and subsequently analyzed, such as through genetic sequencing. The barcodes can then be used to tell which sequences came from which sample materials.

42. The inventions of the 024 Patent provide innovative and significant advancements in nucleic-acid preparation for sequencing, detection, and quantification. Using the inventions of the 024 Patent it is possible to improve the efficiency of sample preparation for genetic sequencing, while also gathering and maintaining more information about the identity of the origin of the sequence information that is ultimately obtained. The 024 Patent thus represents a significant step forward in the preparation of genetic samples for sequencing and, as a result, in the efficiency and usefulness of genetic sequencing itself.

### 3. Foreign Counterparts to the 024 Patent

43. The following foreign patents and patent applications correspond to the 024 Patent, and there are no others:

| U.S. Patent No. 9,689,024 | | | | | |
|---|---|---|---|---|---|
| Application Date | Application Number | Status | Patent Date | Patent No. | Country |
| 2/9/15 | 2013302756 | Pending | | | Australia |
| 2/12/15 | 11201500303547 | Pending | | | Brazil |
| 2/10/15 | 2881685 | Pending | | | Canada |
| 4/14/15 | 2013800535556 | Published | | | China |
| 2/12/15 | 13829414 | Published | | | EPO |
| 2/9/15 | 237156 | Pending | | | Israel |
| 2/11/15 | 1126/DELNP/2015 | Published | | | India |
| 2/13/15 | 2015-527549 | Published | | | Japan |
| 3/13/15 | 10-2015-7006549 | Pending | | | Korea |
| 2/12/15 | MX/a/2015/001939 | Published | | | Mexico |
| 8/13/13 | PCT/US13/54797 | Expired | | | WIPO |

#### 4. Licenses Related to the 024 Patent

44. [redacted]

### C. U.S. Patent No. 9,695,468

#### 1. Identification And Ownership

45. United States Patent No. 9,695,468, titled "Methods For Droplet-Based Sample Preparation," issued on July 4, 2017, to inventors Benjamin Hindson, Serge Saxonov, and Michael Schnall-Levin. *See* **Ex. 3** [468 Patent]. The 468 Patent issued from Application No. 14/624,473 filed on February 17, 2015. *Id.*

46. The 468 Patent has 1 independent claim and 22 dependent claims. *Id.* 10X is asserting claims **1**, 2, 3, 4, 6, 7, 8, 9, 11, 12, 21, and 22 of the 468 Patent in this investigation.

47. 10X owns by assignment the entire right, title, and interest in and to the 468 Patent. All the inventors of the 468 Patent have assigned the entire right, title, and interest in the patent and the applications from which it derives to 10X. A certified copy of the assignment from the named inventors to 10X is attached hereto. *See* **Exs. 10-12** [468 Patent Assignment].

48. Pursuant to Commission Rule 210.12(c)(1), this Complaint is accompanied by the prosecution history of the 468 Patent and three copies thereof. **Appx. C**. Pursuant to Commission rule 210.12(c)(2), this Complaint is accompanied by four copies of each technical reference identified in the prosecution history of the 468 Patent. **Appx. G**.

### 2. Non-Technical Description of the 468 Patent

49. Genetic sequencing often requires analyzing the genetic material from tissue that may contain many different cells, or gathering sequencing information from long strands of DNA. In both of these examples, using prior techniques can be inefficient and can result in a loss of important information about where specific sequences originated. For example, analyzing a sampling of a large number of a patient's individual cells from a tumor tissue sample would require conducting many reactions with the genetic material from the cells, while somehow getting unique genetic sequence information about all of the different cells. Looking at many such reactions at the same time requires an ability to separate each of these reactions from the others and to link the resulting data for each cell or DNA molecule to only that cell or DNA molecule.

50. The 468 Patent relates to a novel method of sample preparation that involves, for example, generating droplets using porous beads as the delivery vehicle to place barcode molecules into at least a subset of droplets together with the nucleic acid sample. For example, the 468 Patent permits providing at least one million barcode molecules with the same barcode sequence that are releasably attached to a porous bead. The barcode molecules are in an aqueous phase and are combined with a nucleic acid sample (e.g., a messenger RNA in a cell) to be analyzed that is also in an aqueous phase at a first junction of a microfluidic device. A droplet containing the barcode molecules and the nucleic acid sample material to be analyzed is then generated by contacting that aqueous phase with another phase with which the aqueous phase cannot mix (e.g., an oil) at a second junction of the microfluidic device. Many of the generated droplets contain barcode molecules and the nucleic acid sample material to be analyzed. The barcode allows the nucleic acids from, for example, multiple cells to be pooled, and subsequently

analyzed, such as through genetic sequencing. The barcodes can then be used to tell which sequences came from which sample material.

51. The inventions of the 468 Patent thus represent a significant advancement in nucleic-acid preparation for sequencing, detection, and quantification. Using the inventions of the 468 Patent it is possible to increase the efficiency of sample preparation for genetic sequencing while also gathering and maintaining more information about the identity of the sample materials from which the sequencing information originates. The 468 Patent thus represents a significant step forward in the preparation of genetic samples for sequencing and, as a result, in the efficiency and usefulness of genetic sequencing itself.

### 3. Foreign Counterparts to 468 Patent

52. The following foreign patents and patent applications correspond to the 468 Patent, and there are no others:

| U.S. Patent No. 9,695,468 | | | | | |
|---|---|---|---|---|---|
| Application Date | Application Number | Status | Patent Date | Patent No. | Country |
| 2/9/15 | 2013302756 | Pending | | | Australia |
| 2/12/15 | 11201500303547 | Pending | | | Brazil |
| 2/10/15 | 2881685 | Pending | | | Canada |
| 4/14/15 | 2013800535556 | Published | | | China |
| 2/12/15 | 13829414 | Published | | | EPO |
| 2/9/15 | 237156 | Pending | | | Israel |
| 2/11/15 | 1126/DELNP/2015 | Published | | | India |
| 2/13/15 | 2015-527549 | Published | | | Japan |
| 3/13/15 | 10-2015-7006549 | Pending | | | Korea |
| 2/12/15 | MX/a/2015/001939 | Published | | | Mexico |
| 8/13/13 | PCT/US13/54797 | Expired | | | WIPO |

### 4. Licenses Related to the 468 Patent

53. [redacted]

[redacted]

### D. U.S. Patent No. 9,856,530

#### 1. Identification And Ownership

54. United States Patent No. 9,856,530, titled "Methods and Systems For Processing Polynucleotides," issued on January 2, 2018, to inventors Benjamin Hindson, Serge Saxonov, Kevin Ness, Paul Hardenbol, Michael Schnall-Levin, and Mirna Jarosz. *See* **Ex. 4**. The 530 Patent issued from Application No. 15/588,519 filed on May 5, 2017. *Id.*

55. The 530 Patent has 1 independent claim and 29 dependent claims. *Id.* Complainant is asserting claims **1**, 2, 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 24, 25, 26, 27, 28, 29, and 30 of the 530 Patent in this investigation.

56. 10X owns by assignment the entire right, title, and interest in and to the 530 Patent. All the inventors of the 468 Patent have assigned the entire right, title, and interest in the patent and the applications from which it derives to 10X. A certified copy of the assignment from the named inventors to 10X is attached hereto. *See* **Ex. 13** [Patent Assignment].

57. Pursuant to Commission Rule 210.12(c)(1), this Complaint is accompanied by the prosecution history of the 530 Patent and three copies thereof. **Appx. D**. Pursuant to Commission rule 210.12(c)(2), this Complaint is accompanied by four copies of each technical reference identified in the prosecution history of the 530 Patent. **Appx. H**.

#### 2. Non-Technical Description of the 530 Patent

58. Genetic sequencing often requires analyzing the genetic material from tissue that may contain many different cells. Using prior techniques can be inefficient and can result in a loss of important information about where specific sequences originated. For example, analyzing

a sampling of a large number of a patient's individual cells from a tumor tissue sample would require conducting many reactions with the genetic material from the cells, while somehow getting unique genetic sequence information about all of the different cells. Looking at many such reactions at the same time requires an ability to separate each of these reactions from the others and to link the resulting data for each cell to only that cell.

59. The 530 Patent relates to a novel method for nucleic acid preparation or analysis, including for genetic profiling of single cells. For example, the 530 Patent permits generating droplets such that at least 1,000 droplets of the set of droplets that are generated contain a single cell containing polynucleotide molecules and a single gel bead from 1,000 gel beads that is releasably attached to at least 1,000 identical barcode molecules. The barcode molecules are distinct from barcode sequences of a plurality of at least 1,000 barcode molecules releasably attached to any other gel bead of the 1,000 gel beads. Barcoded polynucleotide molecules can then be generated in the droplets. Also, at some point, the barcode molecules become detached from the gel bead. Thus, the 530 Patent uses a gel bead to deliver a large number of oligonucleotide barcode molecules for barcoding the polynucleotides of a single cell. The barcoded polynucleotides from the single cell all share the identical barcode sequence because they were in a same droplet and they can be identified as originating from the same cell.

60. The inventions of the 530 Patent provide a significant advance in nucleic acid preparation for genetic sequencing and analysis. Using the inventions of the 530 Patent it is possible to efficiently prepare the genetic material (e.g., messenger RNA molecules) of large numbers of individual cells for sequencing in a way that records the genetic material that originates in the same cell, to distinguish it from the genetic material that originates in other cells.

Thus, the 530 Patent provides a more efficient way to prepare large numbers of individual cells for more informative genetic sequencing.

### 3. Foreign Counterparts to the 530 Patent

61. The following foreign patents and patent applications correspond to the 530 Patent, and there are no others:

| U.S. Patent No. 9,856,530 | | | | | |
|---|---|---|---|---|---|
| Application Date | Application Number | Status | Patent Date | Patent No. | Country |
| 6/12/15 | 2013359165 | Pending | | | Australia |
| 6/10/15 | 2894694 | Pending | | | Canada |
| 6/29/15 | 13862194 | Published | | | EPO |
| 12/12/13 | PCT/US13/74764 | Expired | | | WIPO |

### 4. Licenses Related to the 530 Patent

62. [redacted]

## VI. UNLAWFUL AND UNFAIR ACTS OF PROPOSED RESPONDENT: PATENT INFRINGEMENT

63. Proposed Respondent Bio-Rad has engaged in unfair trade practices, including the sale for importation, importation, and sale within the United States after importation of components, specifically at least Accused Microfluidic Cartridges or components thereof, that when used as a part of the Accused Products result in infringement the Asserted Claims of the Asserted Patents.

### A. Bio-Rad's Accused Products

64. As detailed below for each Asserted Patent, the Accused Products, including Accused Microfluidic Cartridges, such as Bio-Rad's ddSEQ™ Cartridges, that when used as part of its Single-Cell Sequencing Solution infringe the Asserted Claims of the Asserted Patents listed below, are imported, sold for importation, and/or sold after importation by or on behalf of Bio-Rad.

### B. Infringement of the Asserted Patents

#### 1. Infringement of U.S. Patent No. 9,644,204

65. The Accused Products infringe claims **1**, 2, 3, 4, 6, 7, 8, 9, 17, 20, 21, **23**, **25**, 27, 29, 31, and 33 of the 204 Patent, literally or under the doctrine of equivalents. At least the Accused Microfluidic Cartridges or components thereof are sold for importation, imported, and/or sold within the United States after importation by or on behalf of Bio-Rad.

66. On information and belief, Bio-Rad violates Section 337 through the importation into the United States, the sale for importation, or the sale within the United States after importation of certain Accused Products or components thereof including Accused Microfluidic Cartridges or components thereof, which are used to infringe one or more claims of the 204 Patent. On information and belief, Bio-Rad knowingly and intentionally induces users of one or more of the Accused Products including Accused Microfluidic Cartridges as part of the Bio-Rad Single-Cell Sequencing Solution, including without limitation customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers to directly infringe one or more claims of the 204 Patent by encouraging, instructing, and/or aiding and abetting one or more such persons or entities to at least use the Accused Products or components thereof in an infringing manner (*e.g.*, at least, by using a claimed method and/or making or using a claimed device or composition). Bio-Rad either itself acts or induces others to make, use, and sell Accused Products including at

least Accused Microfluidic Cartridges. Bio-Rad advertises the Accused Products and encourages the use of Accused Products by other entities by designing, selling, offering for sale, marketing, advertising, and instructing on the use of its Single-Cell Sequencing Solution. *See* **Ex. 34** ("Illumina and Bio-Rad Launch Solution for Single-Cell Genomic Sequencing to Enable Robust Study of Complex Diseases"), http://www.bio-rad.com/en-us/corporate/newsroom/illumina-and-bio-rad-launch-solution-for-single-cell-genomic-sequencing-to-enable-robust-study-of-complex-diseases. Bio-Rad assists users in using the Accused Products, including by providing instruction manuals for its ddSEQ™ Single-Cell Isolator, *see* **Ex. 35** ("ddSEQ™ Single-Cell Isolator Instruction Manual"), http://www.bio-rad.com/webroot/web/pdf/lsr/literature/10000069430.pdf. As a result of Bio-Rad's marketing, advertising, instruction, and sales, such other entities on information and belief use the Bio-Rad Single-Cell Sequencing Solution including the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 204 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."), **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center,

Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-Rad ddSEQ" and describing its use); **Ex. 77**, https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50**, https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78**, http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief, Bio-Rad performs the above acts or has them performed on its behalf knowing and intending that such acts will result in such other entities using the Accused Products as part of Bio-Rad's Single-Cell Sequencing Solution, while knowing or being willfully blind that such acts of use constitute direct infringement of the asserted claims of the 204 Patent.

67. On information and belief, Bio-Rad knowingly and intentionally contributes to the infringement of the 204 Patent because it imports, sells, and/or offers for sale Accused Products including without limitation Accused Microfluidic Cartridges used with Bio-Rad's Single-Cell Sequencing Solution, or has others perform such acts on its behalf, specifically so that those Accused Products will be used in an infringing manner as part of Bio-Rad's Single-Cell Sequencing Solution. Further, the Accused Products were designed specifically to be used

in a manner that infringes the asserted claims of 204 Patent. For example, and without limitation, Bio-Rad's ddSEQ Single-Cell Isolator and Bio-Rad's ddSEQ microfluidic cartridges and barcode-attached gel beads are all material components of the claimed inventions. When these components of the Bio-Rad Single Cell Sequencing Solution are used, the claims of the 204 Patent are infringed. For instance, the ddSEQ single cell isolator when operated forms a number of droplets that contain gel beads with barcodes attached and individual cells. The Single Cell Sequencing Solution performs this process in a manner that meets the limitations of the 204 Patent, and there is no other substantial use for the ddSEQ Single Cell Isolator, microfluidic chip, or other components. Thus, the Accused Products are a material part of the claimed inventions of the 204 Patent that when used result in infringement. As a result of Bio-Rad's importing selling, and/or offering for sale Accused Products, other entities on information and belief use the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 204 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."); **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center,

Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-Rad ddSEQ" and describing its use); **Ex. 77**, https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50**, https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78**, http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief Bio-Rad acts and has acted—including specifically by supplying the components, material, or apparatus described above—knowing or being willfully blind as to the existence of the 204 Patent and as to the fact that the Accused Products are especially made and adapted for this use in an infringing manner, are not staple articles of commerce, and do not have substantial non-infringing uses.

68. On information and belief, Bio-Rad was aware of or acted with willful blindness to the existence of the 204 Patent and the infringement of the 204 Patent as described above by third parties, including without limitation users, customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers. On information and belief, Bio-Rad had knowledge of the Asserted Patents at least as a result of 10X's January 8, 2018, letter to Bio-Rad, identifying the

Asserted Patents and Bio-Rad's infringement of them. Bio-Rad also had knowledge of the Asserted Patents at least through the numerous interactions it has had with 10X. For example, at least as early as September 22, 2014, Bio-Rad was aware of or acted with willful blindness to the existence of the Asserted Patents and their applicability to Defendant's products through its participation in litigation captioned *Bio-Rad Laboratories, Inc. and Bio-Rad QL, Inc. v. 10X Technologies, Inc., Serge Saxonov, Kevin Ness, and Benjamin Hindson*, No. MSC14-01751, in Contra Costa County Superior Court. In the No. MSC14-01751 litigation, Bio-Rad brought disputes regarding several 10X U.S. patent applications. For example, Bio-Rad has acknowledged that it became aware of certain 10X's pending patent applications that 10X was developing, when they were published from June to August 2014. The application for the 204 Patent was published on August 14, 2014 (US 2014/0227684 Al). This published patent application is part of the set of published patent applications that Bio-Rad pled awareness of. Therefore, Bio-Rad became aware of 10X's patent application that indicated 10X's technology involved the creation of droplets containing gel beads with barcodes in 2014. Bio-Rad also expressed its belief that 10X's patent applications described technology that Bio-Rad considered its competition, which suggests that Bio-Rad studied 10X's patent applications in depth. Furthermore, Bio-Rad cited the 204 Patent and the publication of the application that led to the 204 Patent; as prior art during the prosecution of Bio-Rad's Application No. 14/493,268. On information and belief, Bio-Rad was aware of and studied the technical content of these applications and tracked these applications and the subsequent continuations and grant of the 204 Patent since 2014. Thus, on information and belief, Defendant Bio-Rad tracked and was aware of the 204 Patent. Moreover, on information and belief, Bio-Rad's close study of and interest in 10X's patents and their subject matter, combined with Bio-Rad's specific awareness of 10X's

own technology (which as described in further detail below involved Bio-Rad attending and making a video recording of a detailed technical presentation in which 10X launched its product in February of 2015) and Bio-Rad's specific awareness of how the Bio-Rad Single Cell Sequencing Solution, technology that Bio-Rad copied from 10X, works, Bio-Rad knows, has known, and has at least been and remained willfully blind, with respect to the fact that the Accused Products infringe the claims of 10X's 204 Patent.

69. Additionally, on information and belief, Bio-Rad directly infringes one or more claims of the 204 Patent through making and/or use of one of more Accused Products in a manner that meets the limitations of the asserted claims of the 204 Patent (*e.g.*, at least, by using a claimed method and/or making or using a claimed device or composition) in the United States without authority.

70. Pursuant to Commission Rule 210.12(a)(9)(viii), a claim chart applying each element of the asserted independent claims of the 204 Patent to the representative Accused Products is attached to this Complaint as **Ex. 36**.

### 2. Infringement of U.S. Patent No. 9,689,024

71. The Accused Products infringe claims **1**, 2, 5, 8, 10, 11, 13, 15, 16, 17, 19, 21, and 22 of the 024 Patent, literally or under the doctrine of equivalents. At least the Accused Microfluidic Cartridges or components thereof are sold for importation, imported, and/or sold within the United States after importation by or on behalf of Bio-Rad.

72. On information and belief, Bio-Rad violates Section 337 through the importation into the United States, the sale for importation, or the sale within the United States after importation certain Accused Products or components thereof including Accused Microfluidic Cartridges or components thereof, which are used to infringe one or more claims of the 024 Patent. On information and belief, Bio-Rad knowingly and intentionally induces users of one or

more of the Accused Products including Accused Microfluidic Cartridges as part of the Bio-Rad Single-Cell Sequencing Solution, including without limitation customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers to directly infringe one or more claims of the 024 Patent by encouraging, instructing, and/or aiding and abetting one or more such persons or entities to at least use the Accused Products or components thereof in an infringing manner (*e.g.*, at least, by using a claimed method). Bio-Rad either itself acts or induces others to make, use, and sell Accused Products including at least Accused Microfluidic Cartridges. Bio-Rad advertises the Accused Products and encourages the use of Accused Products by other entities by designing, selling, offering for sale, marketing, advertising, and instructing on the use of its Single-Cell Sequencing Solution. *See* **Ex. 34** ("Illumina and Bio-Rad Launch Solution for Single-Cell Genomic Sequencing to Enable Robust Study of Complex Diseases"), http://www.bio-rad.com/en-us/corporate/newsroom/illumina-and-bio-rad-launch-solution-for-single-cell-genomic-sequencing-to-enable-robust-study-of-complex-diseases. Bio-Rad assists users in using the Accused Products, including by providing instruction manuals for its ddSEQ™ Single-Cell Isolator, *see* **Ex. 35** ("ddSEQ™ Single-Cell Isolator Instruction Manual"), http://www.bio-rad.com/webroot/web/pdf/lsr/literature/10000069430.pdf. As a result of Bio-Rad's marketing, advertising, instruction, and sales, such other entities on information and belief use the Bio-Rad Single-Cell Sequencing Solution including the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 024 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit

Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."), **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center, Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-Rad ddSEQ" and describing its use); **Ex. 77**, https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50**, https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78**, http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief, Bio-Rad performs the above acts or has them performed on its behalf knowing and intending that such acts will result in such other entities using the Accused Products as part of

Bio-Rad's Single-Cell Sequencing Solution, while knowing or being willfully blind that such acts of use constitute direct infringement of the asserted claims of the 024 Patent.

73. On information and belief, Bio-Rad knowingly and intentionally contributes to the infringement of the 024 Patent because it imports, sells, and/or offers for sale Accused Products including without limitation Accused Microfluidic Cartridges used with Bio-Rad's Single-Cell Sequencing Solution, or has others perform such acts on its behalf, specifically so that those Accused Products will be used in an infringing manner as part of Bio-Rad's Single-Cell Sequencing Solution. Further, the Accused Products were designed specifically to be used in a manner that infringes the asserted claims of 024 Patent. For example, and without limitation, Bio-Rad's ddSEQ Single-Cell Isolator and Bio-Rad's ddSEQ microfluidic cartridges and barcode-attached gel beads are all material components of the claimed inventions. When these components of the Bio-Rad Single Cell Sequencing Solution are used, the claims of the 024 Patent are infringed. For instance, the ddSEQ single cell isolator when operated forms a number of droplets that contain gel beads with barcodes attached and individual cells. The Single Cell Sequencing Solution performs this process in a manner that meets the limitations of the 024 Patent, and there is no other substantial use for the ddSEQ Single Cell Isolator, microfluidic chip, or other components. Thus, the Accused Products are a material part of the claimed inventions of the 024 Patent that when used result in infringement. As a result of Bio-Rad's importing selling, and/or offering for sale Accused Products, other entities on information and belief use the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 024 Patent, literally or under the doctrine of equivalents, for the reasons stated

above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."), **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center, Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-Rad ddSEQ" and describing its use); **Ex. 77**, https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50**, https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78**, http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief Bio-Rad acts and has acted—including specifically by supplying the material or apparatus described above—knowing or being willfully blind as to the existence of the 024

Patent and as to the fact that the Accused Products are especially made and adapted for this use in an infringing manner, are not staple articles of commerce, and do not have substantial non-infringing uses.

74. On information and belief, Bio-Rad was aware of or acted with willful blindness to the existence of the 024 Patent and the infringement of the 024 Patent as described above by third parties, including without limitation users, customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers. On information and belief, Bio-Rad had knowledge of the Asserted Patents at least as a result of 10X's January 8, 2018, letter to Bio-Rad, identifying the Asserted Patents and Bio-Rad's infringement of them. Bio-Rad also had knowledge of the Asserted Patents at least through the numerous interactions it has had with 10X. For example, at least as early as September 22, 2014, Bio-Rad was aware of or acted with willful blindness to the existence of the Asserted Patents and their applicability to Defendant's products through its participation in litigation captioned *Bio-Rad Laboratories, Inc. and Bio-Rad QL, Inc. v. 10X Technologies, Inc., Serge Saxonov, Kevin Ness, and Benjamin Hindson*, No. MSC14-01751, in Contra Costa County Superior Court. In the No. MSC14-01751 litigation, Bio-Rad brought disputes over several 10X U.S. patent applications. For example, Bio-Rad has acknowledged that it became aware of certain 10X's pending patent applications that 10X was developing, when they were published from June to August 2014. The 024 Patent issued from a divisional of U.S. Patent Application No. 13/966,150. U.S. Patent Application No. 13/966,150 was published on June 5, 2014 (US 2014/0155295 A1). This published patent application is part of the set of published patent applications that Bio-Rad pled awareness of. Further, in the No. MSC14-01751 litigation, Bio-Rad specifically relied on provisional applications Nos. 61/683,192; 61/737,374; and 61/762,435 from which the 024 and 468 Patents claim priority. Therefore, Bio-Rad became

aware of 10X's patent application that indicated 10X's technology involved the creation of droplets containing gel beads with barcodes in 2014. Bio-Rad also expressed its belief that 10X's patent applications described technology that Bio-Rad considered its competition, which suggests that Bio-Rad studied 10X's patent applications in depth. Furthermore, Bio-Rad cited the 024 Patent and the publication of Application No. 13/966,150 as prior art during the prosecution of Bio-Rad's Application No. 14/493,268. On information and belief, Bio-Rad was aware of and studied the technical content of these applications and tracked these applications and the subsequent continuations and grant of the 024 Patent since 2014. Thus, on information and belief, Defendant Bio-Rad tracked and was aware of the 024 Patent. Moreover, on information and belief, Bio-Rad's close study of and interest in 10X's patents and their subject matter, combined with Bio-Rad's specific awareness of 10X's own technology (which as described in further detail below involved Bio-Rad attending and making a video recording of a detailed technical presentation in which 10X launched its product in February of 2015) and Bio-Rad's specific awareness of how the Bio-Rad Single Cell Sequencing Solution, technology that Bio-Rad copied from 10X, works, Bio-Rad knows, has known, and has at least been and remained willfully blind, with respect to the fact that the Accused Products infringe the claims of 10X's 024 Patent.

75. Additionally, on information and belief, Bio-Rad directly infringes one or more claims of the 024 Patent through use of one of more Accused Products in a manner that meets the limitations of the asserted claims of the 024 Patent (*e.g.*, at least, by using a claimed method) in the United States without authority.

76. Pursuant to Commission Rule 210.12(a)(9)(viii), a claim chart applying each element of the asserted independent claims of the 024 Patent to the representative Accused Products is attached to this Complaint as **Ex. 37**.

### 3. Infringement of U.S. Patent No. 9,695,468

77. The Accused Products infringe claims **1**, 2, 3, 4, 6, 7, 8, 9, 11, 12, 21, and 22 of the 468 Patent, literally or under the doctrine of equivalents. At least the Accused Microfluidic Cartridges or components thereof are sold for importation, imported, and/or sold within the United States after importation by or on behalf of Bio-Rad.

78. On information and belief, Bio-Rad violates Section 337 through the importation into the United States, the sale for importation, or the sale within the United States after importation of certain Accused Products or components thereof including Accused Microfluidic Cartridges or components thereof, which are used to infringe one or more claims of the 468 Patent. On information and belief, Bio-Rad knowingly and intentionally induces users of one or more of the Accused Products including Accused Microfluidic Cartridges as part of the Bio-Rad Single-Cell Sequencing Solution, including without limitation customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers to directly infringe one or more claims of the 468 Patent by encouraging, instructing, and/or aiding and abetting one or more such persons or entities to at least use the Accused Products or components thereof in an infringing manner (*e.g.*, at least, by using a claimed method). Bio-Rad either itself acts or induces others to make, use, and sell Accused Products including at least Accused Microfluidic Cartridges. Bio-Rad advertises the Accused Products and encourages the use of Accused Products by other entities by designing, selling, offering for sale, marketing, advertising, and instructing on the use of its Single-Cell Sequencing Solution. *See* **Ex. 34** ("Illumina and Bio-Rad Launch Solution for Single-Cell Genomic Sequencing to Enable Robust Study of Complex Diseases"),

http://www.bio-rad.com/en-us/corporate/newsroom/illumina-and-bio-rad-launch-solution-for-single-cell-genomic-sequencing-to-enable-robust-study-of-complex-diseases. Bio-Rad assists users in using the Accused Products, including by providing instruction manuals for its ddSEQ™ Single-Cell Isolator, *see* **Ex. 35** ("ddSEQ™ Single-Cell Isolator Instruction Manual"), http://www.bio-rad.com/webroot/web/pdf/lsr/literature/10000069430.pdf. As a result of Bio-Rad's marketing, advertising, instruction, and sales, such other entities on information and belief use the Bio-Rad Single-Cell Sequencing Solution including the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 468 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."), **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center, Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-

Rad ddSEQ" and describing its use); **Ex. 77,** https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50,** https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78,** http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief, Bio-Rad performs the above acts or has them performed on its behalf knowing and intending that such acts will result in such other entities using the Accused Products as part of Bio-Rad's Single-Cell Sequencing Solution, while knowing or being willfully blind that such acts of use constitute direct infringement of the asserted claims of the 468 Patent.

79. On information and belief, Bio-Rad knowingly and intentionally contributes to the infringement of the 468 Patent because it imports, sells, and/or offers for sale Accused Products including without limitation Accused Microfluidic Cartridges used with Bio-Rad's Single-Cell Sequencing Solution, or has others perform such acts on its behalf, specifically so that those Accused Products will be used in an infringing manner as part of Bio-Rad's Single-Cell Sequencing Solution. Further, the Accused Products were designed specifically to be used in a manner that infringes the asserted claims of 468 Patent. For example, and without limitation, Bio-Rad's ddSEQ Single-Cell Isolator and Bio-Rad's ddSEQ microfluidic cartridges and barcode-attached gel beads are all material components of the claimed inventions. When these components of the Bio-Rad Single Cell Sequencing Solution are used, the claims of the 468

Patent are infringed. For instance, the ddSEQ single cell isolator when operated forms a number of droplets that contain gel beads with barcodes attached and individual cells. The Single Cell Sequencing Solution performs this process in a manner that meets the limitations of the 468 Patent, and there is no other substantial use for the ddSEQ Single Cell Isolator, microfluidic chip, or other components. Thus, the Accused Products are a material part of the claimed inventions of the 468 Patent that when used result in infringement. As a result of Bio-Rad's importing selling, and/or offering for sale Accused Products, other entities on information and belief use the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 468 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."), **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center, Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-

Rad ddSEQ" and describing its use); **Ex. 77,** https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50,** https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78,** http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief Bio-Rad acts and has acted—including specifically by supplying the material or apparatus described above—knowing or being willfully blind as to the existence of the 468 Patent and as to the fact that the Accused Products are especially made and adapted for this use in an infringing manner, are not staple articles of commerce, and do not have substantial non-infringing uses.

80. On information and belief, Bio-Rad was aware of or acted with willful blindness to the existence of the 468 Patent and the infringement of the 468 Patent as described above by third parties, including without limitation users, customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers. On information and belief, Bio-Rad had knowledge of the Asserted Patents at least as a result of 10X's January 8, 2018, letter to Bio-Rad, identifying the Asserted Patents and Bio-Rad's infringement of them. Bio-Rad also had knowledge of the Asserted Patents at least through the numerous interactions it has had with 10X. For example, at least as early as September 22, 2014, Bio-Rad was aware of or acted with willful blindness to the existence of the Asserted Patents and their applicability to Defendant's products through its

participation in litigation captioned *Bio-Rad Laboratories, Inc. and Bio-Rad QL, Inc. v. 10X Technologies, Inc., Serge Saxonov, Kevin Ness, and Benjamin Hindson*, No. MSC14-01751, in Contra Costa County Superior Court. In the No. MSC14-01751 litigation, Bio-Rad brought disputes over several 10X U.S. patent applications. For example, Bio-Rad has acknowledged that it became aware of certain 10X's pending patent applications that 10X was developing, when they were published from June to August 2014. The 468 Patent issued from a continuation of the same U.S. Patent Application No. 13/966,150. U.S. Patent Application No. 13/966,150 was published on June 5, 2014 (US 2014/0155295 A1). This published patent application is part of the set of published patent applications that Bio-Rad pled awareness of. Further, in the No. MSC14-01751 litigation, Bio-Rad specifically relied on provisional applications Nos. 61/683,192; 61/737,374; and 61/762,435 from which the 024 and 468 Patents claim priority. Therefore, Bio-Rad became aware of 10X's patent application that indicated 10X's technology involved the creation of droplets containing gel beads with barcodes in 2014. Bio-Rad also expressed its belief that 10X's patent applications described technology that Bio-Rad considered its competition, which suggests that Bio-Rad studied 10X's patent applications in depth. Furthermore, Bio-Rad cited the 468 Patent and the publication of Application No. 13/966,150 as prior art during the prosecution of Bio-Rad's Application No. 14/493,268. On information and belief, Bio-Rad was aware of and studied the technical content of these applications and tracked these applications and the subsequent continuations and grant of the 468 Patent since 2014. Thus, on information and belief, Defendant Bio-Rad tracked and was aware of the 468 Patent. Moreover, on information and belief, Bio-Rad's close study of and interest in 10X's patents and their subject matter, combined with Bio-Rad's specific awareness of 10X's own technology (which as described in further detail below involved Bio-Rad attending and making a video

recording of a detailed technical presentation in which 10X launched its product in February of 2015) and Bio-Rad's specific awareness of how the Bio-Rad Single Cell Sequencing Solution, technology that Bio-Rad copied from 10X, works, Bio-Rad knows, has known, and has at least been and remained willfully blind, with respect to the fact that the Accused Products infringe the claims of 10X's 204 Patent.

81. Additionally, on information and belief, Bio-Rad directly infringes one or more claims of the 468 Patent through use of one of more Accused Products in a manner that meets the limitations of the asserted claims of the 468 Patent (*e.g.*, at least, by using a claimed method) in the United States without authority.

82. Pursuant to Commission Rule 210.12(a)(9)(viii), a claim chart applying each element of the asserted independent claims of the 468 Patent to the representative Accused Products is attached to this Complaint as **Ex. 38**.

#### 4. Infringement of U.S. Patent No. 9,856,530

83. The Accused Products infringe claims **1**, 2, 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 24, 25, 26, 27, 28, 29, and 30 of the 530 Patent, literally or under the doctrine of equivalents. At least the Accused Microfluidic Cartridges or components thereof are sold for importation, imported, and/or sold within the United States after importation by or on behalf of Bio-Rad.

84. On information and belief, Bio-Rad violates Section 337 through the importation into the United States, the sale for importation, or the sale within the United States after importation of certain Accused Products or components thereof including Accused Microfluidic Cartridges or components thereof, which are used to infringe one or more claims of the 530 Patent. On information and belief, Bio-Rad knowingly and intentionally induces users of one or more of the Accused Products including Accused Microfluidic Cartridges as part of the Bio-Rad

Single-Cell Sequencing Solution, including without limitation customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers to directly infringe one or more claims of the 530 Patent by encouraging, instructing, and/or aiding and abetting one or more such persons or entities to at least use the Accused Products or components thereof in an infringing manner (*e.g.*, at least, by using a claimed method). Bio-Rad either itself acts or induces others to make, use, and sell Accused Products including at least Accused Microfluidic Cartridges. Bio-Rad advertises the Accused Products and encourages the use of Accused Products by other entities by designing, selling, offering for sale, marketing, advertising, and instructing on the use of its Single-Cell Sequencing Solution. *See* **Ex. 34** ("Illumina and Bio-Rad Launch Solution for Single-Cell Genomic Sequencing to Enable Robust Study of Complex Diseases"), http://www.bio-rad.com/en-us/corporate/newsroom/illumina-and-bio-rad-launch-solution-for-single-cell-genomic-sequencing-to-enable-robust-study-of-complex-diseases. Bio-Rad assists users in using the Accused Products, including by providing instruction manuals for its ddSEQ™ Single-Cell Isolator, *see* **Ex. 35** ("ddSEQ™ Single-Cell Isolator Instruction Manual"), http://www.bio-rad.com/webroot/web/pdf/lsr/literature/10000069430.pdf. As a result of Bio-Rad's marketing, advertising, instruction, and sales, such other entities on information and belief use the Bio-Rad Single-Cell Sequencing Solution including the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 530 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad

ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."), **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center, Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-Rad ddSEQ" and describing its use); **Ex. 77**, https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN BioRad SingleCellSeminar Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50**, https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina seminar 4-12-17 single cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78**, http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief, Bio-Rad performs the above acts or has them performed on its behalf knowing and intending that such acts will result in such other entities using the Accused Products as part of Bio-Rad's Single-Cell Sequencing Solution, while knowing or being willfully blind that such acts of use constitute direct infringement of the asserted claims of the 530 Patent.

85. On information and belief, Bio-Rad knowingly and intentionally contributes to the infringement of the 530 Patent because it imports, sells, and/or offers for sale Accused Products including without limitation Accused Microfluidic Cartridges used with Bio-Rad's Single-Cell Sequencing Solution, or has others perform such acts on its behalf, specifically so that those Accused Products will be used in an infringing manner as part of Bio-Rad's Single-Cell Sequencing Solution. Further, the Accused Products were designed specifically to be used in a manner that infringes the asserted claims of 530 Patent. For example, and without limitation, Bio-Rad's ddSEQ Single-Cell Isolator and Bio-Rad's ddSEQ microfluidic cartridges and barcode-attached gel beads are all material components of the claimed inventions. When these components of the Bio-Rad Single Cell Sequencing Solution are used, the claims of the 530 Patent are infringed. For instance, the ddSEQ single cell isolator when operated forms a number of droplets that contain gel beads with barcodes attached and individual cells. The Single Cell Sequencing Solution performs this process in a manner that meets the limitations of the 530 Patent, and there is no other substantial use for the ddSEQ Single Cell Isolator, microfluidic chip, or other components. Thus, the Accused Products are a material part of the claimed inventions of the 530 Patent that when used result in infringement. As a result of Bio-Rad's importing selling, and/or offering for sale Accused Products, other entities on information and belief use the Accused Products for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Products, including, for example, researchers and core facilities at research institutions—directly infringe the asserted claims of the 530 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website

listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core."), **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center, Molecular and Genomics Core Facility website listing the Bio-Rad ddSeq Single Cell Isolator and describing its use); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Biorad/Illumina ddSEQ) website listing "Bio-Rad ddSEQ" and describing its use); **Ex. 77**, https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50**, https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78**, http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). As explained below, on information and belief Bio-Rad acts and has acted—including specifically by supplying the material or apparatus described above—knowing or being willfully blind as to the existence of the 530 Patent and as to the fact that the Accused Products are especially made and adapted for this use

in an infringing manner, are not staple articles of commerce, and do not have substantial non-infringing uses.

86. On information and belief, Bio-Rad was aware of or acted with willful blindness to the existence of the 530 Patent and the infringement of the 530 Patent as described above by third parties, including without limitation users, customers, affiliates, parents, subsidiaries, third parties, importers, and/or sellers. Bio-Rad had this knowledge at least as a result of 10X's January 8, 2018, letter to Bio-Rad, identifying the 530 Patent and Bio-Rad's infringement of it. *See* **Ex. 86**. Bio-Rad also had this knowledge at least through the numerous interactions it has had with 10X. For example, Bio-Rad had knowledge of the 530 Patent as a result of its knowledge of the Asserted Patents through its participation in litigation captioned *Bio-Rad Laboratories, Inc. and Bio-Rad QL, Inc. v. 10X Technologies, Inc., Serge Saxonov, Kevin Ness, and Ben Hindson*, No. MSC14-01751, in Contra Costa County Superior Court. Bio-Rad was aware of the 530 Patent at least as early as September 22, 2014, the date when Bio-Rad began its dispute over the ownership of several 10X U.S. patent applications in the above-mentioned litigation. For example, Bio-Rad has acknowledged that it became aware of 10X's pending patent applications that 10X was developing, when Bio-Rad discovered published patent applications by 10X that were published from June to August 2014. The 530 Patent is the child to several U.S. Patent Applications, including Nos. 14/250,701; 14/175,973; and 14/104,650. Application No. 14/104,650 was published on July 24, 2014 (US 2014/0206554 A1), application No. 14/175,973 was published on August 14, 2014 (US 2014/0228255 A1), and application No. 14/250,701 was published on August 21, 2014 (US 2014/0235506 A1), *see* **Exs. 4, 40-42**, which makes these published patent applications part of the set of published patent applications that Bio-Rad pled awareness of. Thus, on information and belief, Bio-Rad was aware of the technical

content of these applications and tracked these applications and the subsequent continuations and grant of the 530 Patent. *See* **Ex. 4** [530 Patent]. Additionally, during the above-mentioned litigation, Bio-Rad also expressed its belief that 10X was developing intellectual property to compete with Bio-Rad. Thus, on information and belief, Bio-Rad analyzed 10X's applications to come to that conclusion, and did the same for 10X's subsequently granted 530 Patent, and thus was aware of the infringing acts.

87. Additionally, on information and belief, Bio-Rad directly infringes one or more claims of the 530 Patent through use of one of more Accused Products in a manner that meets the limitations of the asserted claims of the 530 Patent (*e.g.*, at least, by using a claimed method) in the United States without authority.

88. Pursuant to Commission Rule 210.12(a)(9)(viii), a claim chart applying each element of the asserted independent claims of the 530 Patent to the representative Accused Products is attached to this Complaint as **Ex. 39.**

## VII. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

89. On information and belief, Accused Products, specifically at least Accused Microfluidic Cartridges or components thereof, such as Bio-Rad's ddSEQ™ Cartridges, are manufactured at foreign facilities on behalf of Bio-Rad to Bio-Rad's specifications. *See* **Ex. 43 [Wyatt Decl.]**, ¶¶ 12-16. [redacted] On information and belief, because certain Accused Products are manufactured overseas and are sold and used in the United

States, Bio-Rad or those acting on its behalf, has sold and continues to sell the Accused Products for importation into the United States, has imported and continues to import the Accused Products into the United States, and/or has sold and continues to sell the Accused Products within the United States after importation. *See* **Ex. 43**. Evidence regarding sales and sales after importation by or on behalf of Proposed Respondent in the United States can be found at **Exhibits 102-107, 110**.

90. As further evidence of the continuing sale in the United States of the Accused Products, [redacted] which is further evidence that Bio-Rad and/or entities acting on behalf of Bio-Rad continue to at least import, sell for importation, or sell after importation at least the Accused Microfluidic Cartridges.

91. Additionally, the Accused Products, including specifically the Accused Microfluidic Cartridges, have been and continue to be sold and used in the United States in connection with the ongoing use by Bio-Rad customers of Bio-Rad's ddSEQ™ Single-Cell Isolator. For example, multiple core facilities at research institutions have Bio-Rad's ddSEQ™

Single-Cell Isolator, describe its use, and have and continue to provide services using the Accused Products. **Ex. 57**, https://petitinstitute.gatech.edu/research/genome-analysis (the Georgia Tech, Parker H. Petit Institute for Bioengineering and Bioscience, Genome Analysis Core website listing the BioRad ddSEQ™ Single-Cell Isolator and describing its use); **Ex. 67**, http://bioinformatics.gatech.edu/powerful-new-tool-genome-analysis ("A number of Petit Institute researchers, including Krish Roy, Ed Botchwey, and Gibson, ***are working in the single-cell arena now, utilizing the equipment, techniques, and services available through the Genome Analysis Core.***" (emphasis added)); **Ex. 115**, https://sums.gatech.edu/ (the Georgia Tech, Shared user Management System, providing a login "For Users, Principal Investigators & Industry); **Ex. 74**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Facilities-and-Equipment.html (the University of Mississippi Medical Center, Molecular and Genomics Core Facility website listing the Bio-Rad ddSEQ Single-Cell Isolator and describing its use); **Ex. 116**, www.bidnet.com/bneattachments?/451979616.doc (UMMC Notice of Intent to Certify Sole Source for "Bio-Rad ddSeq Single Cell Isolation System and associated accessories"); **Ex. 117**, https://www.umc.edu/Research/Core-Facilities/Molecular-and-Genomics-Core/Services/Services-Home.html (offering "services and resources to faculty and staff, both internal and external of the institution"); **Ex. 75**, https://www.med.unc.edu/cgibd/cores/advanced-analytics/single-cell-rnaseq-bioradillumina-ddseq/ (UNC School of Medicine, Center for Gastrointestinal biology and Disease, CGIBD Cores, Single-cell RNAseq (Bio-Rad/Illumina ddSEQ) website listing "Bio-Rad ddSEQ" and describing its use); **Ex. 118**, https://infoporte.unc.edu/cores/buy.php (providing a login for "UNC Employees" and "External Customers"); **Ex. 119**, https://www.bumc.bu.edu/medicine/files/2017/07/Evans-Summer-2017-newsletter-FINAL.pdf

(describing the "New Single Cell Sequencing Core" at Boston Medical Center/Boston University School of Medicine and the "Illumina/BioRad ddSeq"); **Ex. 120**, https://my.ilabsolutions.com/service_center/show_external/2960/genomics-resources-core-facility (Weill Cornell Medicine, Genomics Resources Core Facility listing the "ddSeq (Illumina/Bio-Rad single cell RNA-Seq)" under "unclassified"). On information and belief, previous and ongoing use of such installed equipment, particularly in shared facilities that are available to multiple users on an ongoing basis and are thus expected to have larger scale use, requires the continuing and repeated purchase and use—and thus the importation, sale for importation, and/or sale after importation—of certain consumables. These consumables include the Accused Microfluidic Cartridges or components thereof, such as Bio-Rad's ddSEQ™ Cartridges. These cartridges must be regularly replaced as new cartridges are necessary for new experimental runs on the Bio-Rad ddSEQ™ Single-Cell Isolator. These consumable cartridges would thus be purchased and disposed of routinely, repeatedly, and continually by scientific research facilities that use the ddSEQ™ Single-Cell Isolator, such as the core and research facilities identified in this Complaint. These consumable ddSEQ™ cartridges are, on information and belief, manufactured outside of the United States, thus requiring sale for importation, importation, and/or sale after importation of these consumable articles for the facilities operating the ddSEQ™ Single-Cell Isolators to do so on a continuing basis. Thus, Bio-Rad or those acting on its behalf have imported and continue to import Accused Products, have sold and continue to sell the Accused Products for importation, and/or have sold or continue to sell the Accused Products after importation.

92. Other evidence of installed equipment in the United States that also requires the use of these consumables further confirms the prior and ongoing importation, sale for

importation, and/or sale after importation of the Accused Products, including at least the Accused Microfluidic Cartridges or components thereof, such as Bio-Rad's ddSEQ™ Cartridges.

[redacted] Other evidence also confirms the use of the Accused Products by researchers in the United States. **Ex. 77,** https://medicine.uiowa.edu/humangenetics/sites/medicine.uiowa.edu.humangenetics/files/ILMN_BioRad_SingleCellSeminar_Feb2017.pdf (showing data from Drs. C.N. Svendsen & R.Ho of Cedars-Sinai Medical Center at page 18); **Ex. 50,** https://www.biomedsupport.utexas.edu/sites/default/files/cbrs/files/illumina_seminar_4-12-17_single_cell.pdf (showing data from Drs. David Schaffer & Maroof Adil of the University of California, Berkeley); **Ex. 78,** http://www.selectscience.net/products/ddseq-single-cell-isolator/?prodID=207170 (showing reviews of the ddSEQ™ Single-Cell Isolator by Bio-Rad by a user identified as located at the University of Michigan). Thus, Bio-Rad or those acting on its behalf have imported and continue to import Accused Products, have sold and continue to sell the Accused Products for importation, and/or have sold or continue to sell the Accused Products after importation.

93. Additionally, on information and belief, Bio-Rad stated in paragraph 85 of its Complaint in Investigation No. 337-TA-1068 that it has made in the United States "significant investments in plant and equipment, significant investments in the employment of labor and capital, and substantial investments in the exploitation of the Asserted Patents through product design, research, development, engineering, manufacturing, testing, distribution, marketing, sales, service, customer support and other activities relating to Bio-Rad's microfluidic chips and

droplet generators that practice the Asserted Patents." Such activities would also involve the importation of the Accused Products, including the at least Accused Microfluidic Cartridges or components thereof, such as Bio-Rad's ddSEQ™ Cartridges. Bio-Rad has also contended in the same investigation in its Preliminary Statement on the Public Interest, page 4, that "Bio-Rad's ddSEQ Single Cell Isolator system" is a "substitute[] that could replace the infringing devices," which in that investigation are 10X's products. Bio-Rad's claim that its own products (the Accused Products here) could allegedly replace 10X's covered products in the U.S. market (while not correct for other reasons), further confirms that Bio-Rad or those acting on its behalf have and continue to import, sell for importation, and/or sell after importation Accused Products, including the at least Accused Microfluidic Cartridges or components thereof, such as Bio-Rad's ddSEQ™ Cartridges.

94. On information and belief, other evidence also shows that Bio-Rad or those acting on its behalf have and continue to import the Accused Products, sell the Accused Products for importation, or sell the Accused Products after importation. For example, Bio-Rad announced the launch of its Single-Cell Sequencing Solution in January 2017 and has websites for the Accused Products. *See* **Ex. 34** ("Illumina and Bio-Rad Launch Solution for Single-Cell Genomic Sequencing to Enable Robust Study of Complex Diseases"), http://www.bio-rad.com/en-us/corporate/newsroom/illumina-and-bio-rad-launch-solution-for-single-cell-genomic-sequencing-to-enable-robust-study-of-complex-diseases; **Exhibits 102-107, 110**. On information and belief, Bio-Rad has also attended conferences and/or trade shows at which it displayed the Accused Products. **Ex. 122**, http://www.selectscience.net/SelectScience-TV/Videos/comprehensive-single-cell-sequencing-solution-from-bio-rad-and-illumina/?videoID=3648 (Bio-Rad's Senior Marketing Director Carolyn Reifsnyder stated in a

video dated March 25, 2017, while standing in a display booth with the ddSEQ™ Single-Cell Isolator and Bio-Rad's ddSEQ™ Cartridges that "we are going to be at the Society for Neuroscience and the American Cell Biology Meeting this year with more information" at 01:40-01:45); **Ex. 123**, https://www.sfn.org/Annual-Meeting/Neuroscience-2017/Sessions-and-Events/Program (American Society for Neuroscience General Information Program from the 2017 meeting on November 11-15 in Washington, DC, showing that Bio-Rad had a booth (page 95)); **Ex. 124**, http://ascb-embo2017.ascb.org/wp-content/uploads/sites/8/2017/03/2017ascbemboprogramwebfinal.pdf (American Cell Biology Meeting Program from the 2017 meeting on December 2-6 in Philadelphia, showing that Bio-Rad had was an exhibitor (page 150)). Thus, Bio-Rad or those acting on its behalf have imported and continue to import Accused Products, have sold and continue to sell the Accused Products for importation, and/or have sold or continue to sell the Accused Products after importation.

## VIII. HARMONIZED TARIFF SCHEDULE ITEM NUMBERS

95. On information and belief, the Accused Products fall within at least the following Harmonized Tariff Schedule of the United States item number: 9027.90.84. This HTS identification is for illustrative purposes only in compliance with the Commission Rules and is not intended to restrict the scope of the investigation.

## IX. RELATED LITIGATION

96. Contemporaneously with the filing of this Complaint, Complainant is filing an action against Bio-Rad in the United States District Court for the Northern District of California, alleging infringement of each of the Asserted Patents.

97. On information and belief and pursuant to Commission Rule 210.12(a)(5), there has been no other pending or ongoing court or agency litigations involving the alleged unfair methods of competition and unfair acts, or the subject matter thereof.

98. Bio-Rad had previously filed a litigation in which it asserted that it was seeking, *inter alia*, a declaration that Bio-Rad was a sole or joint owner of one or more 10X patent applications (and any resulting patent(s)), and an order requiring 10X to transfer and assign such patent application(s) and any resulting patent(s) to Bio-Rad Laboratories. *See Bio-Rad Laboratories, Inc. and Bio-Rad QL, Inc. v. 10X Technologies, Inc., Serge Saxonov, Kevin Ness, and Ben Hindson*, No. MSC14-01751 (Contra Costa County Superior Court). This state court action was subsequently settled and dismissed on June 13, 2017. No right, title, or interest in any 10X patent or application was transferred, assigned, or otherwise affected. As described above, 10X owns the entire right, title, and interest in and to each of the Asserted Patents.

99. Further, 10X and Bio-Rad are currently engaged in the following ongoing litigations regarding subject matter other than the unfair methods of competition and unfair acts, that are the subject matter of this Complaint: *Bio-Rad Laboratories, Inc. and The University of Chicago v. 10X Genomics, Inc.*, Case No. 1:15-cv-00152 (D. Del. Feb. 12, 2015),[5] *In the Matter of Certain Microfluidic Devices,* Inv. No. 337-TA-1068 (Jul. 31, 2017), and *Bio-Rad Laboratories, Inc. et al v. 10X Genomics, Inc.*, Case No. 3:17-cv-04339 (N.D. Cal. Jul. 31, 2017).[6]

## X. DOMESTIC INDUSTRY

100. With respect to the Asserted Patents, a domestic industry in the United States exists as defined by 19 U.S.C. § 1337(a)(3)(A)-(C), comprising significant investments in plant and equipment; in the employment of labor and capital; and/or in the substantial exploitation of

[5] RainDance Technologies, Inc. was acquired by Bio-Rad in January 2017. *See* http://www.bio-rad.com/en-us/corporate/newsroom/bio-rad-to-acquire-raindance-technologies-and-droplet-intellectual-property.

[6] One of Bio-Rad's patents asserted in this case, U.S. Patent No. 9,216,392, was also challenged in the *Inter Partes* Review proceedings filed by 10X. *See* IPR2018-00300, 301, 302 (Dec. 14, 2017).

the Asserted Patents through engineering, research and development, and/or licensing based on 10X's domestic industry in covered products.

### A. 10X's Use of the Asserted Patents

101. 10X's GemCode™ and Chromium™ product lines for single-cell and linked-read applications, based on the GemCode™ technology, practice at least certain claims of the Asserted Patents, and these 10X's products include Chromium™ Single Cell 3' Solution, Chromium™ Single Cell V(D)J Solution, Chromium™ Genome Solution, Chromium™ Exome Solution, Chromium™ *de novo* Assembly Solution, and GemCode™ Long Read, and GemCode™ Single Cell platforms (collectively, the "Covered Products"). **Ex. 48 [Osborn Decl.]**, ¶ 2; **Ex. 43 [Wyatt Decl.]**, ¶ 2.

102. All of 10X's Covered Products practice one or more claims of the 204, 024, and 486 Patents. 10X Covered Products that are not exclusively used for linked-read applications, including Chromium™ Single Cell 3' Solution, Chromium™ Single Cell V(D)J Solution, and GemCode™ Single Cell platforms, practice one or more claims of the 530 Patent (the "530 Covered Products"). For purposes of this Complaint, 10X's Chromium™ Single Cell 3' Solution is representative of 10X's practicing products for each of the Asserted Patents.

103. Claim charts demonstrating that 10X sells at least one product that practices at least one claim of each of the Asserted Patents are attached as **Exhibits 44-47**. The documents cited in these charts are attached as **Exhibits 28, 49-99, 108-109.**[7]

[7] 10X's products practice additional claims of the Asserted Patents, and 10X may establish the technical prong of the domestic industry requirement through claims other than or in addition to the exemplary claims, or through products other than or in addition to the representative product used in these exhibits.

### B. 10X's Domestic Investments Related to the Asserted Patents

104. 10X has made significant investments in the United States related to the Covered Products protected by each of the Asserted Patents. 10X's investments include at least substantial investments in plants and equipment, substantial investments in employment of labor and capital, and significant investments in the exploitation of the Asserted Patents through manufacturing, research and development, sales, marketing, distribution, and support, and other activities relating to 10X's microfluidic chips, droplet generators, bar-code-carrying gel beads, and related reagents and materials that practice the Asserted Patents. [redacted]

105. 10X has made substantial and significant investments in the domestic industry in its Covered Products. [redacted]

106. As another example, 10X also employs a large domestic labor force [redacted]

[redacted]

107. 10X's substantial domestic investments are also reflected in 10X's sales, both in the United States and abroad, of products that are designed, developed, and assembled, and of which significant components are manufactured within the United States. *See id.*, ¶ 14. [redacted]

108. [redacted]

[redacted]

109. [redacted]

110. [redacted]

111. The description above of 10X's domestic investments in connection with its domestic industry is merely exemplary and is not exhaustive. 10X may rely on additional information, evidence, investments, or exhibits to establish the economic prong of the domestic industry requirement.

## XI. RELIEF REQUESTED

112. WHEREFORE, by reason of the foregoing, Complainant respectfully requests that the United States International Trade Commission:

a. Institute an immediate investigation, pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(a)(1)(B)(i) and (b)(1), with respect to violation of Section 337 by Proposed Respondent Bio-Rad based upon sale for importation, importation, and/or sale after importation by or on behalf of Bio-Rad into the United States of the Accused Products that infringe one or more of the Asserted Claims of United States Patent Nos. 9,644,204; 9,689,024; 9,695,468; and 9,856,530;

b. Schedule and conduct a hearing on said unlawful acts pursuant to Section 337(c) for the purposes of (i) receiving evidence and hearing argument concerning whether there has been a violation of Section 337, and (ii) following the hearing, determining that there has been a violation of Section 337;

c. Issue a permanent limited exclusion order barring from entry into the United States any articles that infringe one or more of the Asserted Claims of United States Patent Nos. 9,644,204; 9,689,024; 9,695,468; and 9,856,530 that are made abroad and sold for importation, imported, and/or sold after importation by or on behalf of Proposed Respondent Bio-Rad, and/or any of its subsidiaries, related companies, and agents.

d. Issue a permanent cease and desist order, pursuant to 19 U.S.C. § 1337(f), directing Proposed Respondent Bio-Rad, its subsidiaries, related companies, and agents, as well as any entity acting on their behalf, to cease and desist from selling for importation into the United States, importing, selling after importation into the United States, offering for sale, marketing, advertising, demonstrating, sampling, warehousing inventory for distribution, offering for sale, selling, distributing, licensing, testing, providing technical support, use, or other

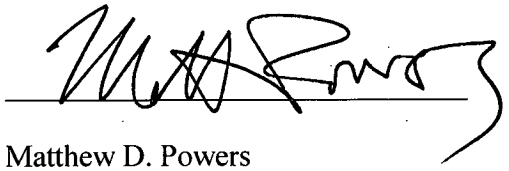
related commercial activity involving Accused Products that infringe one or more of the Asserted Claims of United States Patent Nos. 9,644,204; 9,689,024; 9,695,468; and 9,856,530;

e. Impose a bond during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(e)(1) and (f)(1) to prevent further injury to 10X and its domestic industry relating to each of the Asserted Patents; and

f. Grant such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Dated: January 9, 2018

Respectfully submitted,



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## VERIFICATION OF COMPLAINT

I, Randy Wu, declare, in accordance with 19 C.F.R. §§ 210.4 and 210.12(a), under penalty of perjury under the laws of the United States of America, that the following statements are true:

1. I am currently the Director of Intellectual Property and Litigation for 10X Genomics, Inc. ("10X"). I am duly authorized by 10X to verify the foregoing Complaint.

2. To the best of my knowledge, information, and belief, formed after a reasonable inquiry, the complaint is not being presented for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of the investigation.

3. To the best of my knowledge, information, and belief, formed after a reasonable inquiry, the claims, defenses, and other legal contentions in the complaint are warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law.

4. The allegations and other factual contentions in the Complaint have evidentiary support or, if specifically so identified, are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery.

Executed this 9 day of January, 2018

Randy Wu
Director of Intellectual Property and Litigation
10X Genomics, Inc.