IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

AFFYMETRIX, INC., a Delaware corporation, Plaintiff, v. ILLUMINA, INC., a Delaware corporation, Defendant.	Civil Case No. **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff AFFYMETRIX, INC. ("Affymetrix"), for its complaint against defendant ILLUMINA, INC. ("Illumina"), alleges as follows:

NATURE OF THE ACTION

1. This is an action under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.*, for infringement by Illumina of patents owned by Affymetrix.

THE PARTIES

2. Plaintiff Affymetrix is a Delaware corporation with its principal place of business at 3420 Central Expressway, Santa Clara, California 95051.

3. On information and belief, Defendant Illumina is a corporation incorporated under the laws of the state of Delaware with its principal place of business at 9885 Towne Centre Drive, San Diego, California 92121. On information and belief, Illumina offers for sale and/or sells its infringing products in this Judicial District, among other places.

JURISDICTION AND VENUE

4. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. This Court has personal jurisdiction over Illumina because Illumina is incorporated in the State of Delaware and/or has purposely availed itself of the privilege of conducting activities within this State and District.

6. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b) & (c) and 1400(b).

BACKGROUND AND THE PATENTS-IN-SUIT

7. Dr. Stephen Fodor and his team of scientists spearheaded the development of DNA microarray technology at Affymax, N.V. ("Affymax") in the late 1980s. This technology became the basis for a new company, Affymetrix, formed as a division of Affymax, in 1991. Affymetrix began operating independently in 1992.

8. Affymetrix is a pioneer in the DNA microarray industry and develops state-of-the-art technology for acquiring, analyzing, and managing complex genetic information for use in biomedical research, genomics, and clinical diagnostics. Affymetrix's GeneChip® microarrays are the leading commercial application in this field. GeneChip® microarrays consist of many known sequences of DNA attached to a substrate that hybridize to complementary genetic sequences in experimental samples. Researchers use the GeneChip® microarrays to develop new therapeutic drugs, investigate the cause of cancer, AIDS, and other life-threatening diseases, and explore the human genome.

9. In addition to the GeneChip® microarray, Affymetrix has also developed complementary instruments and software for analyzing nucleic acids. These instruments include the GeneChip® Fluidics Station, which is used to wash away unhybridized sample DNA from the GeneChip® microarray and stain the hybridized DNA with a fluorescent molecule, and the GeneChip® Scanner, which detects where on the array the fluorescent signal is present.

Software developed by Affymetrix includes the GeneChip® Analysis Suite, which is used to collect and analyze data generated by the GeneChip® microarrays.

10. Affymetrix made substantial investments in research and development in order to pioneer the commercial market in DNA microarrays and to achieve a position of technological leadership. Affymetrix owns valuable intellectual property rights in DNA microarray and related technology.

11. Among these intellectual property rights are the following United States patents:

A) U.S. Patent No. 5,902,723 (the "'723 patent"), issued on May 11, 1999, entitled "Analysis of surface immobilized polymers utilizing microfluorescence detection." A true and correct copy of the '723 patent is attached to this Complaint as Exhibit 1 and is incorporated herein by reference.

B) U.S. Patent No. 6,403,320 (the "'320 patent"), issued on June 11, 2002, entitled "Support bound probes and methods of analysis using the same." A true and correct copy of the '320 patent is attached to this Complaint as Exhibit 2 and is incorporated herein by reference.

C) U.S. Patent No. 6,420,169 (the "'169 patent), issued on July 16, 2002, entitled "Apparatus for forming polynucleotides or polypeptides." A true and correct copy of the '169 patent is attached to this Complaint as Exhibit 3 and is incorporated herein by reference.

D) U.S. Patent No. 6,576,424 (the "'424 patent"), issued on June 10, 2003, entitled "Arrays and methods for detecting nucleic acids." A true and

correct copy of the '424 patent is attached to this Complaint as Exhibit 4 and is incorporated herein by reference.

E) U.S. Patent No. 7,056,666 (the "'666 patent"), issued on June 6, 2006, entitled "Analysis of surface immobilized polymers utilizing microfluorescence detection." A true and correct copy of the '666 patent is attached to this Complaint as Exhibit 5 and is incorporated herein by reference.

12. The '723, '320, '169, '424, and '666 patents were duly issued and are owned by Affymetrix (the '723, '320, '169, '424, and '666 patents are hereinafter collectively referred to as the "Patents-in-Suit"). Affymetrix has the full legal right to sue, enforce, and recover damages for all infringements of the Patents-in-Suit.

HISTORY BETWEEN THE PARTIES

13. After learning about the exciting DNA microarray technology being developed at Affymetrix, Dr. Mark Chee, who had recently completed his graduate studies, approached Dr. Stephen Fodor, Affymetrix's founder and current Chief Executive Officer, about doing post-doctorate work at Affymetrix. Dr. Chee had never worked with DNA microarray technology prior to his association with Affymetrix. Dr. Fodor agreed to allow Dr. Chee to do his post-doctorate work on DNA microarray technology at Affymetrix.

14. Shortly thereafter, Dr. Chee became an employee at Affymetrix. He worked at Affymetrix from 1993 until 1997, becoming an inventor on several Affymetrix patents. Dr. Chee rose to the position of Director of Genetics Research at Affymetrix. During this time, Dr. Chee supervised many other scientists at Affymetrix, including Drs. Kevin Gunderson and Jian-Bing Fan. While at Affymetrix, Dr. Fan developed a tag-based genotyping assay and ultimately

published a paper describing that assay. Dr. Gunderson worked on extension- and ligation-based genotyping assays at Affymetrix. Neither Dr. Gunderson nor Dr. Fan had experience working with DNA microarray technology prior to arriving at Affymetrix.

15. In 1997, Dr. Chee ended his employment at Affymetrix. Shortly thereafter, Dr. Chee co-founded Illumina. Dr. Chee played a significant role in developing Illumina's DNA microarray technology. He also was instrumental in attracting several other Affymetrix scientists to join Illumina, including Drs. Gunderson and Fan. Drs. Gunderson and Fan, in turn, were the key architects of Illumina's DNA microarray genotyping assays. Specifically, Dr. Fan developed Illumina's tag-based genotyping GoldenGate assay while Dr. Gunderson developed Illumina's extension-based genotyping Infinium I and II assays. Today, Illumina makes and sells DNA microarrays, sequencing applications, and related technology that directly compete with Affymetrix's products.

16. During the 1990s, Affymetrix collaborated with a company called Molecular Dynamics, Inc ("MD"). Jay Flatley was the CEO of MD. By 1997, MD became interested in manufacturing and selling DNA microarrays. To that end, MD requested and then took a license to Affymetrix's DNA microarray patent portfolio. Mr. Flatley signed that license on behalf of MD. After leaving MD, Mr. Flatley became the CEO of Illumina.

17. When Affymetrix learned in 2002 that Illumina was planning to market DNA microarray technology and related products, Affymetrix approached Illumina about taking a license to Affymetrix's patents. Despite reviewing many Affymetrix patents, Illumina chose to disregard them and continue developing its technology without a license.

18. In March 2004, Affymetrix again approached Illumina about taking a license to Affymetrix's patent portfolio. During a series of meetings on this issue, Affymetrix specifically

identified many Affymetrix patents to which Illumina needed a license. These patents included the '320 and '424 patents. Illumina chose to disregard these patents and continue developing, marketing, and selling its products without a license.

19. Left with no alternative, Affymetrix filed a patent infringement suit against Illumina on July 26, 2004, in the United States District Court for the District of Delaware. On March 13, 2007, a jury returned a verdict that Illumina infringed each of the asserted claims of the five patents. The jury also imposed a 15% royalty rate and damages through 2005 of $16,727,459. Notwithstanding the verdict, Illumina continued to make and sell its infringing products without a license from Affymetrix.

20. In November 2006, Illumina announced its intention to purchase Solexa, Inc. ("Solexa"), a genetic sequencing company. On December 5, 2006, Affymetrix once again approached Illumina about taking a license to Affymetrix's patent portfolio. In the related correspondence, Affymetrix identified many specific patents to which Illumina needed a license, including the '723, '320, '169, '424, and '666 patents. Affymetrix also notified Illumina that many of these patents, including the '169 and '666 patents, were relevant to the Solexa technology that Illumina planned to acquire. After initially agreeing to a meeting at which these issues would be discussed, Illumina canceled the meeting and continued to develop, market, and sell its products without a license.

21. After receiving no further response from Illumina, on December 26, 2006, Affymetrix approached Solexa directly about taking a license to certain Affymetrix patents. These patents included the '169, '424, and '666 patents. Solexa responded on January 4, 2007, by indicating that it was reviewing the referenced patents and that future discussion on the issue would involve Illumina, which was in the process of completing its acquisition of Solexa.

Illumina completed its acquisition of Solexa in January 2007. Neither Solexa nor Illumina ever followed up on this initial licensing correspondence.

COUNT 1

(Infringement of United States Patent No. 5,902,723 by Illumina)

22. Affymetrix realleges and incorporates herein by reference the allegations stated in paragraphs 1-21 of this Complaint.

23. Illumina has been and still is infringing the '723 patent by making, using, offering for sale, and/or selling assays, products, software, and associated instrumentation under the name BeadArray™ technology, including, but not limited to, the Infinium® II assay.

24. Illumina also has been and is contributorily infringing and/or actively inducing others to infringe the '723 patent by supplying the aforementioned BeadArray technology and associated instrumentation.

25. On information and belief, Illumina's infringement, contributory infringement, and/or active inducement of others' infringement of the '723 patent has taken place with full knowledge of the '723 patent and has been intentional, deliberate, and willful.

26. On information and belief, Illumina will continue to infringe, contributorily infringe, and/or actively induce others to infringe the '723 patent unless and until it is enjoined by this Court.

COUNT 2

(Infringement of United States Patent No. 6,403,320 by Illumina)

27. Affymetrix realleges and incorporates herein by reference the allegations stated in paragraphs 1-21 of this Complaint.

28. Illumina has been and still is infringing the '320 patent by making, using, offering for sale, and/or selling products and associated instrumentation under the name BeadArray™ technology, including, but not limited to, all of Illumina's Sentrix® Array Matrix and BeadChip arrays, the BeadArray Reader, and the detection instrument used to decode all of Illumina's BeadArray arrays.

29. Illumina also has been and is contributorily infringing and/or actively inducing others to infringe the '320 patent by supplying the BeadArray technology and associated instrumentation.

30. On information and belief, Illumina's infringement, contributory infringement, and/or active inducement of others' infringement of the '320 patent has taken place with full knowledge of the '320 patent and has been intentional, deliberate, and willful.

31. On information and belief, Illumina will continue to infringe, contributorily infringe, and/or actively induce others to infringe the '320 patent unless and until it is enjoined by this Court.

COUNT 3

(Infringement of United States Patent No. 6,420,169 by Illumina)

32. Affymetrix realleges and incorporates herein by reference the allegations stated in paragraphs 1-21 of this Complaint.

33. Illumina has been and still is infringing the '169 patent by making, using, offering for sale, and/or selling products and associated software and instrumentation under the name Solexa Sequencing technology, including, but not limited to, the Genome Analyzer, Clonal Single Molecule Array technology, and the 1G Genome Analysis System.

34. Illumina also has been and is contributorily infringing and/or actively inducing others to infringe the '169 patent by supplying the aforementioned Solexa Sequencing technology.

35. On information and belief, Illumina's infringement, contributory infringement, and/or active inducement of others' infringement of the '169 patent has taken place with full knowledge of the '169 patent and has been intentional, deliberate, and willful.

36. On information and belief, Illumina will continue to infringe, contributorily infringe, and/or actively induce others to infringe the '169 patent unless and until it is enjoined by this Court.

COUNT 4

(Infringement of United States Patent No. 6,576,424 by Illumina)

37. Affymetrix realleges and incorporates herein by reference the allegations stated in paragraphs 1-21 of this Complaint.

38. Illumina has been and still is infringing the '424 patent by making, using, offering for sale, and/or selling products and associated instrumentation under the name BeadArray™ technology, including, but not limited to, BeadArray arrays used with the Infinium I and II and Direct Hyb assays.

39. Illumina also has been and is contributorily infringing and/or actively inducing others to infringe the '424 patent by supplying the BeadArray technology and associated instrumentation.

40. On information and belief, Illumina's infringement, contributory infringement, and/or active inducement of others' infringement of the '424 patent has taken place with full knowledge of the '424 patent and has been intentional, deliberate, and willful.

41. On information and belief, Illumina will continue to infringe, contributorily infringe, and/or actively induce others to infringe the '424 patent unless and until it is enjoined by this Court.

COUNT 5

(Infringement of United States Patent No. 7,056,666 by Illumina)

42. Affymetrix realleges and incorporates herein by reference the allegations stated in paragraphs 1-21 of this Complaint.

43. Illumina has been and still is infringing the '666 patent by making, using, offering for sale, and/or selling products and associated software and instrumentation under the name Solexa Sequencing technology, including, but not limited to, the Genome Analyzer, Clonal Single Molecule Array technology, and the 1G Genome Analysis System.

44. Illumina also has been and is contributorily infringing and/or actively inducing others to infringe the '666 patent by supplying the aforementioned Solexa Sequencing technology.

45. On information and belief, Illumina's infringement, contributory infringement, and/or active inducement of others' infringement of the '666 patent has taken place with full knowledge of the '666 patent and has been intentional, deliberate, and willful.

46. On information and belief, Illumina will continue to infringe, contributorily infringe, and/or actively induce others to infringe the '666 patent unless and until it is enjoined by this Court.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Affymetrix prays that this Court:

A. Enter a judgment that Illumina has infringed, contributorily infringed, and actively induced others to infringe Affymetrix's Patents-in-Suit;

B. Grant a permanent injunction restraining and enjoining Illumina, its officers, directors, agents, servants, employees, successors, assigns, parent, subsidiaries, affiliated or related companies, and attorneys from infringing, inducing others to infringe and contributing to the infringement of Affymetrix's Patents-in-Suit.

C. Award Affymetrix damages in an amount sufficient to compensate Affymetrix for Illumina's infringement, contributory infringement and active inducement of others' infringement of Affymetrix's Patents-in-Suit, but not less than a reasonable royalty;

D. Award prejudgment interest to Affymetrix pursuant to 35 U.S.C. § 284;

E. Award increased damages, pursuant to 35 U.S.C. § 284, in an amount not less than three times the amount of actual damages awarded to Affymetrix, by reason of Illumina's willful infringement of Affymetrix's Patents-in-Suit;

F. Declare this case exceptional under 35 U.S.C. § 285 and award Affymetrix its reasonable attorneys' fees, expenses and costs incurred in this action; and

G. Grant Affymetrix such other and further relief as this Court may deem just and proper.

DEMAND FOR JURY TRIAL

Affymetrix hereby demands a jury trial on all issues appropriately triable by a jury.

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