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On behalf of:

Illumina, Inc.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ILLUMINA, INC.

Petitioner

v.

**THE TRUSTEES OF COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK**

Patent Owner

IPR2018-00322

U.S. Patent 9,708,358

ILLUMINA UPDATED EXHIBIT LIST

Pursuant to 37 C.F.R. § 42.63(e), Petitioner Illumina, Inc. (“Illumina”) provides an updated list of its exhibits in this proceeding.

Exhibit No.	Description
1001	<i>Exhibit number not used.</i>
1002	U.S. Patent No. 9,708,358 (“Ju”) – (Claim 1 is a cytosine claim)
1003	<i>Exhibit number not used.</i>
1004	<i>Exhibit number not used.</i>
1005	2014-03-06 IPR2012-00007, Paper 140, Final Written Decision
1006	2014-03-06 IPR2012-00006, Paper 128, Final Written Decision
1007	2014-03-06 IPR2013-00011, Paper 130, Final Written Decision
1008	2015-07-17 Federal Circuit Opinion Affirming IPR2012-00006, IPR2012-00007 and IPR2013-00011
1009	<i>Exhibit number not used.</i>
1010	U.S. Patent No. 7,790,869 (“Ju”)
1011	Alberts et al., “Molecular Biology of the Cell”, Garland Publishing Inc., New York (3d ed., 1994)
1012	<i>Exhibit number not used.</i>
1013	WO 91/06678 (“Tsien”)
1014	Prober et al., “A System for Rapid DNA Sequencing with Fluorescent Chain-Terminating Dideoxynucleotides”, Science, 238:336-341 (1987) (“Prober”)
1015	U.S. Patent No. 5,547,839 (“Dower”)

Exhibit No.	Description
1016	Metzker et al., “Termination of DNA synthesis by novel 3’-modified-deoxyribonucleoside 5’-triphosphates”, Nucleic Acids Research, 22:4259-67 (1994) (“Metzker”)
1017	Wu and Metzker et al., “Termination of DNA synthesis by N6-alkylated, not 3’-O-alkylated, photocleavable 2’-deoxyadenosine triphosphates”, Nucleic Acids Research, 35:6339-6349 (2007) (“Wu and Metzker”)
1018	Sanger et. al., “DNA sequencing with chain-terminating inhibitors”, Proc. Natl. Acad. Sci. USA, 74:5463-5467 (1977) (“Sanger”)
1019	U.S. Patent No. 7,270,951 (“Stemple”)
1020	U.S. Patent No. 5,302,509 (“Cheeseman”)
1021	Pelletier et al., “Structures of Ternary Complexes of Rat DNA Polymerase β , a DNA Template-Primer, and ddCTP”, Science, 264:1891-1903 (1994) (“Pelletier”)
1022	<i>Exhibit number not used.</i>
1023	Welch et al., “Syntheses of Nucleosides Designed for Combinatorial DNA Sequencing”, Chem. Eur. J., 5:951-960 (1999) (“Welch”)
1024	Welch et al., “Corrigenda – Syntheses of Nucleosides Designed for Combinatorial DNA Sequencing”, Chem. Eur. J., 11:7136-7145 (2005) (“Welch Corrigenda”)
1025	<i>Exhibit number not used.</i>
1026	<i>Exhibit number not used.</i>
1027	Rosenblum et al., “New dye-labeled terminators for improved DNA sequencing patterns”, Nucleic Acid Research, 25:4500-4504 (1997) (“Rosenblum”)

Exhibit No.	Description
1028	Excerpts from 2013-09-04 Deposition Transcript of Dr. George L. Trainor in IPR2012-00007
1029	U.S. Patent No. 5,151,507 (“Hobbs”)
1030	<i>Exhibit number not used.</i>
1031	Seela et al., “Oligonucleotide Duplex Stability Controlled by the 7-Substituents of 7-Deazaguanine Bases”, <i>Bioorganic & Mechanical Chemistry Letters</i> , 5:3049-3052 (1995) (“Seela 1995”)
1032	<i>Exhibit number not used.</i>
1033	<i>Exhibit number not used.</i>
1034	2013-06-25 Declaration of Dr. George L. Trainor from IPR2012-00006
1035	Boss et al., “Cleavage of Allyl Ethers with Pd/C”, <i>Angew. Chem. Int. Ed. Engl.</i> , 15:558-559 (1976) (“Boss”)
1036	Qian et al., “Unexpected Enzymatic Fucosylation of the Hindered Tertiary Alcohol of 3-C-Methyl-N-Acetylactosamine Produces a Novel Analogue of the LeX-Trisaccharide”, <i>Journal of the American Chemical Society</i> , 120:2184-2185 (1998) (“Qian”)
1037	Kamal et al., “A Miled and Rapid Regeneration of Alcohols from their Allylic Ethers by Chlorotrimethylsilane/Sodium Iodide”, <i>Tetrahedron Letters</i> , 40:371-372 (1999) (“Kamal”)
1038	Excerpts from Prosecution History of U.S. Patent No. 9,725,480 (“Ju”)
1039	Vollhardt et al., “Organic Chemistry”, Second Edition, W.H. Freeman and Co., New York (1994) (“Vollhardt”)
1040	Yu et al., “Cyanine dye dUTP analogs for enzymatic labeling of DNA probes”, <i>Nucleic Acids Research</i> , 22:3226-3232 (1994) (“Yu”)

Exhibit No.	Description
1041	Livak et al., “Detection of single base differences using biotinylated nucleotides with very long linker arms”, Nucleic Acids Research, 20:4831-4837 (1992) (“Livak”)
1042	Watson et al., “Genetical Implication of the Structure of Deoxyribonucleic Acid”, Nature, 171:964-967 (1953) (“Watson & Crick”)
1043	Zavgorodny et al., “1-Alkylthioalkylation of Nucleoside Hydroxyl Functions and its Synthetic Applications: A New Versatile Method in Nucleoside Chemistry”, Tetrahedron Letters, 32:7593-7596 (1991) (“Zavgorodny”)
1044	2015-02-11 Final Written Decision in IPR2013-00517
1045	2016-05-09 Federal Circuit Opinion Affirming IPR2013-00517
1046	Gigg et al., “The Allyl Ether as a Protecting Group in Carbohydrate Chemistry Part II”, J. Chem. Soc. (C), 1903-1911 (1968) (“Gigg”)
1047	2013-08-30 Substitute Columbia Patent Owner Response in IPR2012-00007, Paper 77
1048	2014-07-25 Final Written Decision in IPR2013-00128, Paper 92
1049	2014-10-28 Final Written Decision in IPR2013-00266, Paper 73
1050	2016-01-29 Federal Circuit Opinion Affirming IPR2013-00128 and IPR2013-00266
1051	Greenberg et al., “Optimization and Mechanistic Analysis of Oligonucleotide Cleavage from Palladium-Labile Solid-Phase Synthesis Supports”, J. Org. Chem., 63:4062-4068 (1998) (“Greenberg”)
1052	Seitz et al., HYCRON, an Allylic Anchor for High-Efficiency Solid Phase Synthesis of Protected Peptides and Glycopeptides”, J. Org. Chem., 62:813-826 (1997) (“Seitz”)

Exhibit No.	Description
1053	Gullier et al., “Linkers and Cleavage Strategies in Solid-Phase Organic Synthesis and Combinatorial Chemistry”, Chem. Rev., 100:2091-2157 (2000) (“Gullier”)
1054	U.S. Patent No. 8,088,575 (“Ju”)
1055	Stryer, “Biochemistry”, Fourth Edition, W.H. Freeman and Co., New York (1995) (“Stryer”)
1056	<i>Exhibit number not used.</i>
1057	<i>Curriculum Vitae</i> of Floyd Romesberg, Ph.D.
1058	List of documents considered by Floyd Romesberg, Ph.D.
1059	Sears et al., “CircumVent Thermal Cycle Sequencing and Alternative Manual and Automated DNA Sequencing Protocols Using the Highly Thermostable VentR (exo) DNA Polymerase”, BioTechniques, 13:626-633 (1992) (“Sears”)
1060	Columbia’s complaint for U.S. 9,708,358
1061	<i>Exhibit number not used.</i>
1062	<i>Exhibit number not used.</i>
1063	<i>Exhibit number not used.</i>
1064	<i>Exhibit number not used.</i>
1065	Excerpts from Prosecution History of U.S. Patent No. 9,708,358
1066	Declaration of Jingyue Ju from Prosecution History of U.S. Patent No. 9,708,358
1067	Declaration of Floyd Romesberg, Ph.D. for ’358
<i>Exhibit numbers 1068-1086 not used.</i>	
1087	Declaration of William R. Zimmerman in support of motion to appear <i>pro hac vice</i> for Illumina, Inc.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: May 2, 2018

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **ILLUMINA UPDATED EXHIBIT LIST and EXHIBIT 1087** are being served on May 2, 2018, via e-mail to counsel for the Trustees of Columbia University, at the email addresses below:

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