

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GUARDANT HEALTH, INC.
Petitioner,

v.

UNIVERSITY OF WASHINGTON,
Patent Owner.

Case No. IPR2022-00817
Patent No. 10,760,127

PATENT OWNER’S UPDATED EXHIBIT LIST

Mail Stop ***“PATENT BOARD”***
Patent Trial and Appeal Board
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-145

Patent Owner serves this Updated Exhibit List to accompany service of
Exhibit 2074, Patent Owner's Demonstratives for Oral Argument.

PATENT OWNER'S UPDATED EXHIBIT LIST

Exhibit No.	Description
2001	Eid, J., et al., "Real-Time DNA Sequencing from Single Polymerase Molecules," <i>Science</i> 323:133-138 (2009)
2002	Niedringhaus, T.P., et al., "Landscape of Next-Generation Sequencing Technologies," <i>Anal. Chem.</i> 83:4327-4341 (2011)
2003	Thompson, J.F. and Milos, P.M., "The Properties and Applications of Single-Molecule DNA Sequencing," <i>Genome Biology</i> 12:217 (2011)
2004	Stranneheim, H. and Lundeberg, J., "Stepping Stones In DNA Sequencing," <i>Biotechnol</i> 7:106-1073 (2012)
2005	Quail, M.A., et al., "A Tale of Three Next Generation Sequencing Platforms: Comparison of Ion Torrent, Pacific Biosciences and Illumina Miseq Sequencers," <i>BMC Genomics</i> 13:341 (2012)
2006	Egan, A.N., et al., "Applications of Next-Generation Sequencing In Plant Biology," <i>American Journal of Botany</i> 99(2):175-185 (2012)
2007	Kirsch, S. and Klein, C.A., "Sequence Error Storms and the Landscape of Mutations in Cancer," <i>Proc. Natl. Acad. Sci.</i> 109(36):14289-14290 (2012)
2008	Turner, S., et al., "Apparatus and Method for Performing Nucleic Acid Analysis," U.S. Patent No. 7,479,503 B2 (filed Sept. 16, 2005; issued Jan 13, 2009)
2009	Miner, B.E., et al., "Molecular barcodes detected redundancy and contamination in hairpin-bisulfite PCR," <i>Nucleic Acids Research</i> 32(17): s135 (2004)

Exhibit No.	Description
2010	Lindahl, T. and Wood, R.D., “Quality Control by DNA Repair,” <i>Science</i> , 286:1897-1905 (1999)
2011	Shibutani, S., et al., “Insertion of Specific Bases During DNA Synthesis Past the Oxidation-Damaged Base 8-oxodG,” <i>Nature</i> , 349:431-434 (1991)
2012	Stiller, M., et al., “Patters of Nucleotide Misincorporations During Enzymatic Amplification and Direct Large-Scale Sequencing of Ancient DNA,” <i>Proc. Natl. Acad. Sci.</i> , 103(37):13578-13584 (2006)
2013	McCloskey, M.L., et al., “Encoding PCR Products with Batch-stamps and Barcodes,” <i>Biochem Genet</i> 45:761-767 (2007)
2014	Declaration of Rahul Satija, D.Phil. in Support of Patent Owner Response
2015	Complaint, <i>Twinstrand Biosciences, Inc. v. Guardant Health, Inc.</i> , Case No. 1:21-cv-01126-UNA (D. Del.), filed Aug. 3, 2021
2016	Decision Denying Institution, <i>Guardant Health, Inc. v. University of Washington</i> , Case No. IPR2022-00816 (P.T.A.B.), Paper No. 16, filed Oct. 13, 2022
2017	Johne, R., et al., “Rolling-Circle Amplification Of Viral DNA Genomes Using Phi29 Polymerase,” <i>Trends in Microbiology</i> , 17(5):205-11 (2009)
2018	Report and Recommendation, <i>Twinstrand Biosciences, Inc. v. Guardant Health, Inc.</i> , Case No. 1:21-cv-01126-UNA (D. Del.), filed Dec. 29, 2022
2019	Guardant Health, Inc. Response to Notice of Opposition, European Patent No. 2,893,040, filed May 29, 2020

Exhibit No.	Description
2020	Prosecution History of U.S. Patent No. 10,760, 127 (“127 Prosecution History”)
2021	“Single Molecule Real Time (SMRT™) DNA Sequencing,” Technology Backgrounder, <i>Pacific Biosciences</i> (2009)
2022	Fichot, E. B. and Norman, R. S, “Microbial Phylogenetic Profiling With The Pacific Biosciences Sequencing Platform,” <i>Microbiome</i> 1(10):1-5 (2013)
2023	Shadt, E. E., et al., “A Window Into Third-Generation Sequencing,” <i>Pacific Human Molecular Genetics</i> , 19(2):R277-R240 (2010)
2024	Liu, L., et al., “A Brief Utilization Report On The Illumina Hiseq 2000 Sequencer,” <i>Mycology</i> , 2(3):169-91 (2011)
2025	Koren, S., et al., “Hybrid Error Correction And <i>De Novo</i> Assembly Of Single-Molecule Sequencing Reads,” <i>Nature Biotechnology</i> (2012)
2026	Eid, J, et al., “Supporting Online Material for: Real-Time DNA Sequencing from Single Polymerase Molecules,” <i>Science</i> (2008)
2027	Gupta, P. K., “Single-Molecule DNA Sequencing Technologies For Future Genomics Research,” <i>Trends in Biotechnology</i> , 26(11):602-11 (2008)
2028	Zhang, X., et al., “Improving Genome Assemblies By Sequencing PCR Products With Pacbio,” <i>BioTechniques</i> , 53(1):61-2 (2012)
2029	Levene, M. J., et al., “Zero-Mode Waveguides For Single-Molecule Analysis At High Concentrations,” <i>Science</i> , 299:682-86 (2003)

Exhibit No.	Description
2030	Korlach, J., et al., “Selective Aluminum Passivation For Targeted Immobilization Of Single DNA Polymerase Molecules In Zero-Mode Waveguide Nanostructures,” <i>PNAS</i> , 105(4):1176-81 (2008)
2031	McCarthy, A., “Third Generation DNA Sequencing: Pacific Biosciences’ Single Molecule Real Time Technology,” <i>Chemistry & Biology</i> , 17:675-76 (2010)
2032	Shendure, J. A., et al., “Overview of DNA Sequencing Strategies,” <i>Current Protocols in Molecular Biology</i> , Supp. 96:7.1.1-7.1.23 (2011)
2033	Mardis, E. R., “Next-Generation Sequencing Platforms,” <i>Annual Review of Analytical Chemistry</i> , 6:287-303 (2013)
2034	Glenn, T. C., “Field Guide To Next-Generation DNA Sequencers,” <i>Molecular Ecology Resources</i> , 11:759-69 (2011)
2035	Ozsolak, F., “Third Generation Sequencing Techniques and Applications to Drug Discovery,” <i>Expert Opinion on Drug Discovery</i> , 7(3):231-43 (2012)
2036	Demidov, V. V., “Rolling-Circle Amplification In DNA Diagnostics: The Power Of Simplicity,” <i>Expert Review of Molecular Diagnostics</i> , 2(6):542-48 (2002)
2037	Liu, D., et al., “Rolling Circle DNA Synthesis: Small Circular Oligonucleotides as Efficient Templates for DNA Polymerases,” <i>Journal of American Chemical Society</i> , 118:1587-94 (1996)
2038	Lizardi, P. M., et al., “Mutation Detection And Single-Molecule Counting Using Isothermal Rolling-Circle Amplification,” <i>Nature Genetics</i> , 19:225-32
2039	Smith, D. E., et al., “Dynamical Scaling of DNA Diffusion Coefficients,” <i>Macromolecules</i> , 29:1372-73 (1996)

Exhibit No.	Description
2040	Robertson, R. M., “Diffusion Of Isolated DNA Molecules: Dependence On Length And Topology,” <i>Proceedings of the National Academy of Sciences</i> , 103(19):7310-14 (2006)
2041	Grosberg, A. Y. and Rabin, Y., “DNA Capture Into A Nanopore: Interplay Of Diffusion And Electrohydrodynamics,” <i>The Journal of Chemical Physics</i> , 133: 165102-1-15 (2010)
2042	Coupland, P., et al., “Direct Sequencing Of Small Genomes On The Pacific Biosciences RS Without Library Preparation,” <i>BioTechniques</i> , 53(6): 365-72 (2012)
2043	Patent Owner’s Pre-Institution Sur-Reply, <i>TwinStrand Biosciences, Inc. v. Guardant Health, Inc</i> , Case No. IPR2022-00746 (P.T.A.B.), Paper No. 13, filed Aug. 15, 2022
2044	Patent Owner’s Pre-Institution Sur-Reply, <i>TwinStrand Biosciences, Inc. v. Guardant Health, Inc</i> , Case No. IPR2022-00747 (P.T.A.B.), Paper No. 13, filed Aug. 15, 2022
2045	Deposition Transcript of John Quackenbush, Ph.D., <i>Guardant Health, Inc. v. University of Washington</i> , Case No. IPR2022-00817 (P.T.A.B), Dec. 19, 2022
2046	Loomis, E. W., et al., “Sequencing The Unsequenceable: Expanded CGG-Repeat Alleles Of The Fragile X Gene,” <i>Genome Research</i> , 23:121-28 (2014)
2047	Drmanac, R., et al., “Human Genome Sequencing Using Unchained Base Reads on Self-Assembling DNA Nanoarrays,” <i>Science</i> , 327: 78-81 (2010)
2048	Hui, P., “Next Generation Sequencing: Chemistry, Technology and Applications,” <i>Topics in Current Chemistry</i> (2012)
2049	U.S. Provisional Application No. 61/072,160 to Patel et al., filed Mar. 28, 2008

Exhibit No.	Description
2050	Schmitt, M. W., et al., “Detection Of Ultra-Rare Mutations By Next-Generation Sequencing,” <i>Proceedings of The National Academy of Sciences</i> , 109(36):14508-13 (2012)
2051	Kelvey, J., “Liquid Biopsies Generate Ample Insights from Sparse Clues,” Genetic Engineering & Biotechnology News (2020)
2052	LeMieux, J., “Sequencing’s Stars Urge Exploration of New Dimensions” Genetic Engineering & Biotechnology News, 40(4) (2020)
2053	“TwinStrand Biosciences to Showcase Recent Applications of its Duplex Sequencing Technology at the 2022 AGBT Annual Meeting,” Businesswire (2022)
2054	Ribeiro, F. J., et al., “Finished Bacterial Genomes From Shotgun Sequence Data,” <i>Genome Research</i> , 22:2270-77 (2012)
2055	“Quality Scores for Next-Generation Sequencing,” Illumina (2011)
2056	“12A: Nomenclature,” Encyclopedia of Separation Science, Academic Press, 4712-53 (2000) (excerpt)
2057	Larkin, J., et al., “Length-Independent DNA Packing into Nanopore Zero-Mode Waveguides for Low-Input DNA Sequencing,” <i>Nature Nanotechnology</i> , 12(12) 1169-75 (2017)
2058	Kalendar, R., et al., “Java Web Tools For PCR, In Silico PCR, And Oligonucleotide Assembly And Analysis,” <i>Genomics</i> , 98:137-44 (2011)
2059	Kalendar, R., et al., “Java Web Tools For PCR, In Silico PCR, And Oligonucleotide Assembly And Analysis,” <i>Genes, Genomes and Genomics</i> , 3(1):1-14 (2009)

Exhibit No.	Description
2060	Vincze, T., et al., “NEBcutter: A Program To Cleave DNA With Restriction Enzymes,” <i>Nucleic Acids Research</i> , 31(13):3688-91 (2003)
2061	Reuter, J. S., “RNAstructure: Software For RNA Secondary Structure Prediction And Analysis,” <i>BMC BioInformatics</i> , 11(129):1-9 (2010)
2062	Kennedy, S. R., et al., “Detecting ultralow-frequency Mutations by Duplex Sequencing,” <i>Nature Protocols</i> , 9(11):2586-2606 (2014)
2063	Ng, D. W. and Wong, C. K. B, “Self-Recognition Of DNA From Life Processes To DNA Computation,” <i>Biophysical Reviews and Letters</i> , 2(2):123-37 (2007)
2064	<i>Curriculum Vitae</i> of Rahul Satija, D.Phil
2065	“TwinStrand’s Duplex Sequencing Goes Deep,” GenEdge, Genetic Engineering & Biotechnology News (2020)
2066	Semsarian, C., et al., “Molecular Medicine in the 21 st Century,” <i>Internal Medicine Journal</i> , 31:53-59 (2001)
2067	Forthofer, R. N., et al., “Biostatistics: A Guide to Design, Analysis, and Discovery,” Chapter 5: Probability Distributions, <i>Elsevier Academic Press</i> , 103-133 (2007) (excerpt)
2068	Esteban, J. A., et al., “Fidelity of Φ 29 DNA Polymerase,” <i>The Journal of Biological Chemistry</i> , 268(4):2719-26 (1993)
2069	DNA Secondary Structures for 6x Product

Exhibit No.	Description
2070	DNA Secondary Structures for 10x Product
2071	DNA Secondary Structures for 20x Product
2072	Deposition Transcript of Andres Larrea, Ph.D., May 9, 2023
2073	Deposition Transcript of John Quackenbush, Ph.D., May 15, 2023
2074	Patent Owner's Demonstratives for Oral Argument

Respectfully Submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

/R. Wilson Powers III/

R. Wilson Powers III, Ph.D.
Registration No. 63,504
Lead Attorney for Patent Owner

Date: June 12, 2023

1100 New York Avenue, N.W.
Washington, D.C. 20005
(202) 371-2600

CERTIFICATION OF SERVICE

The undersigned hereby certifies that true and correct copies of the foregoing **PATENT OWNER'S UPDATED EXHIBIT LIST** and associated Exhibit 2074 were served electronically via e-mail on June 12, 2023, in their entirety on the following Counsel for Petitioners:

Michael T. Rosato
Jad A. Mills
Sonja R. Gerrard
Patrick M. Medley
WILSON SONSINI GOODRICH & ROSATI
mrosato@wsgr.com
jmills@wsgr.com
sgerrard@wsgr.com
pmedley@wsgr.com

Respectfully Submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

/R. Wilson Powers III/

R. Wilson Powers III, Ph.D.
Registration No. 63,504
Lead Attorney for Patent Owner

Date: June 12, 2023

1100 New York Avenue, N.W.
Washington, D.C. 20005
(202) 371-2600