

Case 2024-01419
U.S. Patent No. 11,840,730

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ILLUMINA INC.,
Petitioner

v.

MOLECULAR LOOP BIOSCIENCES, INC.,
Patent Owner

Case IPR2024-01419

DECLARATION OF PATRICK R.H. WALLER, PH.D.

IPR2024-01419

Illumina Inc., v. Molecular Loop Biosciences, Inc.
Molecular Loop's Exhibit 2005

I, Patrick R. H. Waller, declare as follows:

1. I make this declaration in support of Patent Owner Molecular Loop's Patent Owner Response to attest to facts relating to the conception of the invention claimed in U.S. Patent No. 11,840,730 (the "'730 patent") by March 6, 2009, and the exercise of reasonable diligence from at least April 29, 2009, through May 18, 2009, the date the invention was constructively reduced to practice.

2. The documents referenced in this declaration as EX2006-2008, EX2012-2016, and EX2021 are true and correct copies of draft applications, figures, and emails that I personally searched for or another individual searched for under my direction, and were produced from Wolf, Greenfield & Sacks, P.C.'s ("Wolf Greenfield") files and related communications. I am familiar with, and have personal knowledge of, the documents attached as EX2006-2008, EX2012-2016, and EX2021, by virtue of my work experience, as I describe below. The documents referenced as EX2012-2016 and EX2021 are true and correct copies of emails, including emails relating to draft claims, applications, and figures that were made or received by myself or another Wolf Greenfield employee with knowledge of the issues presented therein at or near the time of the date of the document displayed on the document, and were kept in the course of the regularly conducted activities of Wolf Greenfield. I further affirm that making the documents attached as EX2012-2016 and EX2021 was a regular practice of the business activity of Wolf Greenfield.

3. I am an attorney and shareholder at Wolf Greenfield in Boston, Massachusetts. I have been an attorney at Wolf Greenfield since 2003. My practice at Wolf Greenfield includes counseling clients in patent prosecution in the biomedical field, developing and implementing licensing strategies, and strategic counseling in connection with patent portfolios. I have specialized in intellectual property and patent prosecution with a focus on life science technologies, including inventions related to genetics and genomics, for more than 25 years.

4. I earned a BA in Genetics from Cambridge University in Cambridge, England in 1988, a Ph.D. in Biology from the Massachusetts Institute of Technology in 1996, and a Juris Doctor from Suffolk University in 2001. I am a member of the Massachusetts Bar and was admitted to practice before the U.S. Patent and Trademark Office as a patent agent in 1997 and a patent attorney in 2007.

5. I represented Good Start Genetics in early 2009. Good Start Genetics engaged my firm, Wolf Greenfield, to assist in securing patent rights for an invention related to DNA sequencing and analysis on next-generation sequencers. One of my primary contacts at Good Start Genetics was Dr. Gregory Porreca, who is a named inventor on the '730 patent.

6. By 2009, I had represented numerous clients involving a wide array of intellectual property issues. For example, I regularly practiced before the U.S. Patent and Trademark Office representing clients in preparing and prosecuting patent

applications. I also managed various aspects of my client's intellectual property portfolios, including determining the patentability of technologies, developing licensing strategies, and analyzing existing patent portfolios. At the time, I worked about seven hours a day or more on behalf of my clients.

7. On March 6, 2009, I received a message from Dr. Gregory Porreca's colleague, Eric Boutin, forwarding a message from Dr. Porreca along with an initial draft of the provisional application that resulted in the '730 patent and two related figures. EX2006, EX2007 ("Figure 1"), and EX2008 ("Figure 2") are true and accurate copies of this initial draft and the related figures. EX2021 is a true and accurate copy of the March 6, 2009, email that I received with the initial draft of the provisional application and two related figures attached.

8. The initial draft of the provisional application, titled "Methods for Reducing Bias in Preparations of Nucleic Acids," contains sections entitled "Field of the Invention," "Background of the Invention," and "Summary of the Invention/Detailed Description." Nearly identical versions of Figure 1 (EX2007) and Figure 2(a) (EX2008) were incorporated into the issued '730 patent as Figures 4 and 5, respectively.

9. Based on my review of privileged correspondence, between March 6, 2009, and April 24, 2009, Dr. Porreca communicated with my colleague, Dr. Daniel Young ("Dr. Young"), and myself about the patent application that became the '730

patent on April 8, 2009, and again on April 22, 2009. During that time, we worked consistently and diligently on the application, which included preparing Dr. Porreca's document into a format appropriate for filing, performing research into the field, and preparing other related patent applications on behalf of Good Start Genetics. I typically worked on multiple applications from various clients at a given time, and spent the majority of my time working on intellectual property matters, approximately an average of seven hours per day during that time period, including working with junior colleagues, even if I did not directly correspond with my clients.

10. On April 24, 2009, Dr. Young sent an email to Dr. Porreca and I with an initial set of claims for the patent application that became the '730 patent. EX2012 is a true and accurate copy of the email thread beginning April 24, 2009, which refers to the application that eventually issued as the '730 patent as "Uri's Application." EX2012 at 4.

11. On April 27, 2009, I received an email from Dr. Porreca suggesting an edit to the April 24, 2009, set of claims. EX2012 at 3-4. Dr. Young responded to the email chain on April 28, 2009, with a slightly revised set of claims. EX2012 at 3. Based on my review of privileged material, the April 28, 2009, claim set contained seven claims, which were revised and incorporated into the application that eventually issued as the '730 patent.

12. On April 29, 2009, I understand that Dr. Young spoke with Dr. Porreca to discuss the sets of claims sent on April 24, 2009, and April 28, 2009. EX2012 at 2-3. On April 30, 2009, following the discussion, Dr. Porreca sent Dr. Young two additional paragraphs to add into the application that issued as the '730 patent. EX2012 at 1-2. These paragraphs included additional information about the number of barcodes necessary to ensure a given sequence will not be observed more than once and how the barcode count is used during subsequent analyses.

13. On April 30, 2009, Dr. Porreca also sent me information regarding the inventorship of the invention disclosed in the '730 patent. Dr. Porreca listed himself and Dr. Uri Laserson as the inventors. EX2013 is a true and accurate copy of the April 30, 2009, email.

14. On May 5, 2009, Dr. Porreca followed up on his April 30, 2009, email, providing an additional example to further explain the number of barcodes necessary to ensure a given sequence will not be observed more than once. EX2012 at 1. Dr. Young responded back on the same day with additional questions, which Dr. Porreca answered a few hours later.

15. On May 6, 2009, Dr. Porreca sent me an email following up on a discussion the day before and asking about next steps for the application that eventually issued as the '730 patent. Dr. Porreca explained that Dr. Laserson was working to complete a histogram for the application that morning. Dr. Porreca also

asked for a call to discuss the application two days later, on that Friday, May 8.

EX2014 is a true and accurate copy of an email thread beginning on May 5, 2009.

EX2014 at 4-5. Two days later, on May 8, 2009, I responded back to Dr. Porreca to set up a call to discuss the status of the application the following morning. EX2014 at 3.

16. On May 11, 2009, Dr. Porreca sent me an email asking when he could expect a draft of the application that issued as the '730 patent, which he noted likely would not need further revisions. EX2014 at 2. I responded that I would discuss a target date with Dr. Young but that the draft was mostly complete. EX2014 at 1.

17. On May 13, 2009, Dr. Porreca followed up with me asking when he could expect a draft of the application. I responded that Dr. Young would forward him the application the following day. EX2014 at 1.

18. On May 14, 2009, I responded back to Dr. Porreca to inform him that Dr. Young was in the process of finalizing the application. I also scheduled a call with Dr. Porreca for later that afternoon to discuss the application. EX2014 at 1. Later that day, Dr. Young sent Dr. Porreca a draft of the application and related figures. EX2015 is a true and accurate copy of an email thread beginning May 14, 2009. EX2015 at 1.

19. On May 15, 2009, Dr. Porreca sent us an edited version of the May 14, 2009, application. EX2015 at 1.

20. On May 15, 2009, Dr. Porreca sent us an email with an additional suggestion regarding the May 14, 2009, application and reiterated his intent to file it in the short term. EX2016 is a true and accurate copy of an email thread beginning May 14, 2009. EX2016 at 1.

21. On May 18, 2009, pursuant to Dr. Porreca's instructions, I filed the application that became the '730 patent. I confirm that EX1008 is a true and accurate copy of U.S. Provisional Application No. 61/179,358 that I filed on May 18, 2009.

22. My work in preparing and filing the '730 patent application, particularly during the period between March 6, 2009, and May 18, 2009, was diligent and consistent with my usual practice for all of my matters. Despite my busy caseload, my usual practice involves spending a significant amount of effort and time on each of my matters.

23. Dr. Porreca was a conscientious client who was actively involved in acting on behalf of Good Start Genetics to ensure the application from which the '730 patent issued was consistently pursued and prosecuted. Dr. Porreca provided helpful feedback to myself and Dr. Young and guided our drafting of the application. Between April 29, 2009, when Dr. Young and Dr. Porreca discussed the sets of claims previously sent and the filing of the application on May 18, 2009, Dr. Porreca communicated with us several times, both via email and oral communications, about the application and reiterated his intent to file it as soon as

possible. We also worked diligently to revise and edit the application in accordance with our improved understanding of the technology. For example, from March 6, 2009, through May 18, 2009, we met to discuss the invention, prepared initial draft claims for review, subsequently updated the claims based on discussions with Dr. Porreca, and drafted an expanded description of the invention incorporating feedback from Dr. Porreca.

24. I declare under the penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed on July 18, 2025 at Boston, Massachusetts.

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

July 18 2025

Date

Pat L H Wall

Patrick R. H. Waller