

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

RAINDANCE TECHNOLOGIES, INC., and
THE UNIVERSITY OF CHICAGO,

Plaintiffs,

v.

10X GENOMICS, INC.

Defendant.

Civil Action No. 1:15-cv-00152-RGA

MEMORANDUM OPINION

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ANDREWS, U.S. DISTRICT JUDGE:

Presently before the Court is the issue of claim construction of a single term in U.S. Patent Nos. 8,822,148 (“the ’148 patent”), 8,329,407 (“the ’407 patent”), 8,304,193 (“the ’193 patent”), 8,658,430 (“the ’430 patent”), and 8,889,083 (“the ’083 patent”). The Court has considered the Parties’ Joint Claim Construction Brief. (D.I. 93). The Court heard oral argument on December 16, 2016. (D.I. 105). During argument, the Court instructed the parties to provide expert testimony as to the meaning of the disputed term “polymerase chain reaction”/“PCR.” (D.I. 105 at 97:24-98:7). The Court issued its claim construction opinion for all other disputed terms on January 26, 2017. (D.I. 116). The Court heard further argument, including expert testimony, on the remaining disputed term on March 6, 2017. (D.I. 169) (“Hr’g Tr.”).

I. BACKGROUND

Plaintiffs filed this action on February 12, 2015, alleging infringement of six patents on behalf of both Plaintiffs. (D.I. 1). Plaintiffs refer to these patents as the Ismagilov patents. On April 23, 2015, Plaintiffs filed an amended complaint asserting an additional patent, the ’430 patent, on behalf of Plaintiff RainDance only. (D.I. 12). On March 25, 2016, Plaintiffs filed a second amended complaint in which they asserted the ’430 patent and only five of the Ismagilov patents. (D.I. 32). The ’430 patent was dismissed on March 24, 2017. (D.I. 138).

II. LEGAL STANDARD

“It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). “[T]here is no magic formula or catechism for conducting claim construction.’ Instead, the court is free to attach the appropriate

weight to appropriate sources ‘in light of the statutes and policies that inform patent law.’”

SoftView LLC v. Apple Inc., 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). Of these sources, “the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

“[T]he words of a claim are generally given their ordinary and customary meaning. . . . [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1312–13 (citations and internal quotation marks omitted). “[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted). “In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Id.* at 1314.

When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court’s construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317–19 (internal quotation marks

omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

“A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent.” *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that “a claim interpretation that would exclude the inventor’s device is rarely the correct interpretation.” *Osram GMBH v. Int’l Trade Comm’n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERM

The patents-in-suit were described and representative claims provided in the Court’s first claim construction opinion. (D.I. 116). There is only one disputed term left to construe.

1. “polymerase chain reaction”/“PCR”

- a. *Plaintiffs’ proposed construction*: “a method of amplifying nucleic acids that involves repeated cycles of DNA replication, wherein the replicated DNA serves as a template for additional replication using a polymerase”
- b. *Defendant’s proposed construction*: “Polymerase chain reaction (PCR) refers to methods by K. B. Mullis (U.S. Patent Nos. 4,683,195 and 4,683,202, hereby incorporated by reference) for increasing concentration of a segment of a target sequence in a mixture of genomic DNA without cloning or purification.” In the alternative: “methods for increasing concentration of a segment of a target sequence in a mixture of genomic DNA without cloning or purification comprising three basic steps: (1) denaturing the strands of DNA so that the single strands can be used as a template; (2) treating the sample with oligonucleotide primers selected to be substantially complementary to a specific sequence on each strand to be amplified; and (3) synthesizing a primer extension product using each of the single strands as a template. These steps are repeated until the desired level of sequence amplification is obtained.”
- c. *Court’s construction*: “Method of amplifying a target sequence of nucleic acids that involves repeated cycles of DNA replication, wherein 1) strands of DNA are denatured to form single-strand templates; 2) the templates are treated with

oligonucleotide primers and a polymerase enzyme is used to extend the primers to produce replicated double-stranded DNA; 3) the replicated DNA then serves as a template for additional replication. The target sequence need not be specifically identified as a target in advance of the reaction.”

As an initial matter, I told the parties during oral argument in December that I would adopt the express definition referencing the Mullis patents provided in the specification of the now-dismissed '430 patent at least for that patent. (D.I. 105 at 98:2-5). My opinion on this construction has not changed. As the Ismagilov patents do not define PCR with respect to the Mullis patents, I decline to adopt such a limited construction for these patents.

The parties dispute whether the target sequence, or portion of DNA to be replicated, must be known prior to the reaction. I agree with Plaintiffs that the target sequence need not be known in advance. Defendant argues that techniques such as Random PCR in which the target sequence is not known in advance are not PCR as a person of ordinary skill understands it. (D.I. 93 at 63; Hr'g Tr. at 89:7-90:3). Plaintiffs contend that Random PCR is simply a specific type of reaction that falls under the broad umbrella of PCR. (D.I. 93 at 65; Hr'g Tr. at 24:10-21). Plaintiff's expert, Dr. Furneaux, testified extensively about why Random PCR is simply one of many “different flavors” of PCR. (Hr'g Tr. at 23:8-31:4). I find Dr. Furneaux's testimony on this point credible. It seems to me that techniques involving Random PCR or any other techniques where the targets are unknown in advance of the reaction are not distinct from generalized PCR; rather, they are simply a specific sub-type of PCR.

As to the remaining points of dispute, it seems to me that Defendant is essentially arguing that Plaintiffs' proposed construction is too broad, while Plaintiffs counter that Defendant's proposed alternate construction is too narrow. (D.I. 131 at 4; D.I. 132 at 2). I agree that Defendant's construction is too narrow. It seems to me that Defendant is essentially offering the Mullis method as its alternate construction. (Hr'g Tr. at 17:17-18:15). I have already rejected this

construction. Plaintiffs have provided substantial evidence that a person of ordinary skill in the art would understand PCR to encompass many techniques that all share a common thread: repeated cycles of DNA replication using a polymerase enzyme. (D.I. 132 at 6). Defendant does not dispute that this broadly describes PCR. (Hr'g Tr. at 84:6-17). Plaintiffs' expert, Dr. Furneaux, provided a detailed critique of why the elements of Defendant's proposed construction unreasonably limit the meaning of this term. (D.I. 169 at 18:16-39:22). I find Dr. Furneaux's critique credible.

On the other hand, I agree with Defendant that Plaintiffs' proposed construction lacks sufficient detail about the three basic steps of PCR. (D.I. 131 at 4). Therefore, I will construe the term "PCR" in the Ismagilov patents to mean "Method of amplifying a target sequence of nucleic acids that involves repeated cycles of DNA replication, wherein 1) strands of DNA are denatured to form single-strand templates; 2) the templates are treated with oligonucleotide primers and a polymerase enzyme is used to extend the primers to produce replicated double-stranded DNA; 3) the replicated DNA then serves as a template for additional replication. The target sequence need not be specifically identified as a target in advance of the reaction."

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion.