ArcherDX, LLC et al v. QIAGEN Sciences, LLC et al Doc. 521

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ARCHERDX, LLC and THE GENERAL HOSPITAL CORPORATION d/b/a MASSACHUSETTS GENERAL HOSPITAL,	)	
Plaintiffs,	)	
v.	)	C.A. No. 18-1019 (MN)
QIAGEN SCIENCES, LLC, QIAGEN LLC f/k/a QIAGEN, INC., QIAGEN BEVERLY, LLC F/K/A QIAGEN BEVERLY, INC., QIAGEN GAITHERSBURG, LLC f/k/a QIAGEN GAITHERSBURG, INC., QIAGEN GMBH, QIAGEN N.V. and JONATHAN ARNOLD,	)	
Defendants.	)	

MEMORANDUM OPINION

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NOREIKA, U.S. DISTRICT JUDGE

The Court presided over a five-day jury trial from August 23, 2021 to August 27, 2021. (*See* D.I. 485, 486, 487, 488, 489). At the end, the jury found Defendants Qiagen Sciences, LLC, Qiagen LLC f/k/a Qiagen, Inc., Qiagen Beverly, LLC f/k/a Qiagen Beverly, Inc., Qiagen Gaithersburg, LLC, f/k/a Qiagen Gaithersburg, Inc., Qiagen GmbH, Qiagen N.V. and Jonathan Arnold (collectively "Defendants" or "Qiagen") to have willfully infringed claims of two patents of Plaintiffs ArcherDX, LLC and the General Hospital Corporation (collectively, "Plaintiffs"). (*See* D.I. 465). Presently before the Court are Defendants' renewed motion for judgment as a matter of law or, alternatively, for a new trial on infringement, invalidity and damages, motion for a new trial on willfulness and motion for remittitur (*See* D.I. 495). In addition, Plaintiffs move for injunctive relief, ongoing royalty, enhanced damages, supplemental damages and pre- and post-judgment interest. (*See* D.I. 494). For the reasons set forth below, the Court will deny Defendants' motions for judgment as a matter of law and new trial, grant Defendants' motion for remittitur, deny Plaintiffs' motion for enhanced damages, deny Plaintiffs' motion for injunction with leave to renew after an evidentiary hearing, grant-in-part Plaintiffs' motion for ongoing royalty and grant Plaintiffs' motions for supplemental damages and pre- and post-judgment interest.

I. BACKGROUND

Plaintiffs and Defendants are in the business of biomedical technology. Plaintiffs and Defendants provide products referred to as assay "kits" that allow users to prepare and analyze nucleic acids using next generation sequencing technology. (*See* D.I. 1 ¶¶ 19-20, D.I. 330 at 1). The kits enable users to detect gene mutations associated with various cancers and have applications in both the clinical and research space. (*See* D.I. 1 ¶ 1, D.I. 130 ¶ 19, D.I. 330 at 1).

At issue in this case are two of Plaintiffs' patents: U.S. Patent No. 10,017,810 ("the '810 patent") and U.S. Patent No. 10,450,597 ("the '597 patent"). The '810 patent is directed to

methods of determining oligonucleotide sequences. (*See* D.I. 130 ¶ 18). The '597 patent is directed to methods of preparing and analyzing nucleic acids. (*See id.*). Plaintiffs have developed and now sell various assay kits that use technology covered by both patents. (*Id.* ¶¶ 19-20). Defendants also developed and now sell kits used to detect gene mutations. (*See* D.I. 330 at 1).

On July 10, 2018, Plaintiffs filed suit alleging that Defendants infringed the '810 patent.[1] (*See* D.I. 1 ¶¶ 41-55). On October 30, 2019, after the '597 patent had issued, Plaintiffs filed an amended complaint, adding a claim for infringement of the '597 patent. (*See* D.I. 130 ¶¶ 41-55). On August 21, 2021 the Court reversed its previous denial of summary judgment of no literal infringement of the '810 patent after further argument. (*See* D.I. 447). Thus, the issues left for trial were literal infringement of the '597 patent and infringement under the doctrine of equivalents for the '810 patent.

From August 23, 2021 to August 27, 2021, the Court presided over a jury trial. (*See* D.I. 485, 486, 487, 488, 489). The jury found that Defendants willfully infringed claims 16, 17 and 19 of the '810 patent and claims 1, 5 and 19 of the '597 patent. (*See* D.I. 465 at 2-4). In addition, the jury found none of these claims invalid. (*See id.* at 5-7). The jury awarded Plaintiff $841,756 in lost profits damages for sales of RNA-related products in the United States, $1,593,762 in royalty damages for sales of DNA-related products in the United States and $2,240,303 in royalty damages for sales outside the United States. (*See id.* at 8).

[1] Plaintiff also initially asserted claims of misappropriation of trade secrets, false advertising, breach of fiduciary duty, deceptive trade practices and tortious conduct. (*See* D.I. 1 at ¶ 1). Prior to trial, Plaintiffs elected to withdraw their claims of trade secret misappropriation, false advertising, deceptive trade practices and tortious interference. (*See* D.I. 413). On August 3, 2021, Plaintiffs accepted an offer of judgment from Defendants pursuant to Rule 68 of the Federal Rules of Civil Procedure for their breach of fiduciary duty claims. (*See* D.I. 423).

On September 20, 2021, the Court entered judgment on the jury verdict under Rule 58(b) of the Federal Rules of Civil Procedure. (*See* D.I. 482). On October 18, 2021, Defendants renewed their motion for judgment as a matter of law on the issues of infringement, invalidity and damages, or, in the alternative, moved for a new trial. (*See* D.I. 495). In addition, Defendants moved for a new trial on willfulness and remittitur of damages. (*See id.*). On October 18, 2021, Plaintiffs moved for enhanced damages, injunction, ongoing royalty, supplemental damages and pre- and post-judgment interest. (*See* D.I. 494). The parties briefing on post-trial motions was completed on December 15, 2021. (*See* D.I. 513, 514).

II. LEGAL STANDARDS

A. Judgment as a Matter of Law

Judgment as a matter of law may be entered against a non-moving party if the Court "finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on [an] issue." FED. R. CIV. P. 50(a)(1). Judgment as a matter of law is appropriate "only if, viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is insufficient evidence from which a jury reasonably could find liability." *Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1166 (3d Cir. 1993). Entry of judgment as a matter of law is a remedy to be invoked only "sparingly." *CGB Occupational Therapy, Inc. v. RHA Health Servs. Inc.*, 357 F.3d 375, 383 (3d Cir. 2004).

Following a jury trial, a renewed motion for judgment as a matter of law under Rule 50(b) may be granted only if the movant demonstrates "that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied [by] the jury's verdict cannot in law be supported by those findings." *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (alteration in original) (internal quotation marks omitted). Substantial evidence is such relevant evidence that a reasonable mind might accept as adequate to support the

finding under review. *See Enplas Display Device Corp. v. Seoul Semiconductor Co.*, 909 F.3d 398, 407 (Fed. Cir. 2018). In determining whether substantial evidence supports the jury verdict, the Court may not make credibility determinations, weigh the evidence or substitute its own conclusions for that of the jury where the record evidence supports multiple inferences. *See Lightning Lube*, 4 F.3d at 1166.

B. Motion for a New Trial

"A new trial may be granted to all or any of the parties and on all or part of the issues in an action in which there has been a trial by jury, for any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States." FED. R. CIV. P. 59(a). Common reasons for granting a new trial are: (1) the jury's verdict is against the clear weight of the evidence and a new trial is necessary to prevent a miscarriage of justice; (2) there exists newly discovered evidence that would likely alter the outcome of the trial; (3) improper conduct by an attorney or the Court unfairly influenced the verdict; or (4) the jury's verdict was facially inconsistent. *See Ateliers de la Haute-Garonne v. Broetje Automation-USA Inc.*, 85 F. Supp. 3d 768, 775 (D. Del. 2015).

The decision of whether to grant a new trial is a question committed to the Court's discretion. *See Allied Chem. Corp. v. Daiflon, Inc.*, 449 U.S. 33, 36 (1980). Unlike the standard for judgment as a matter of law, the Court need not view the evidence in the light most favorable to the verdict winner when ruling on a motion for a new trial. *See Ateliers*, 85 F. Supp. 3d at 775. "[N]ew trials because the verdict is against the weight of the evidence are proper only when the record shows that the jury's verdict resulted in a miscarriage of justice or where the verdict, on the record, cries out to be overturned or shocks [the] conscience." *Williamson v. Consol. Rail Corp.*, 926 F.2d 1344, 1353 (3d Cir. 1991).

III. DISCUSSION

A. Defendants' Motions

1. Patent Infringement

"To prove infringement, the patentee must show that an accused product embodies all limitations of the claim either literally or by the doctrine of equivalents." *Cephalon, Inc. v. Watson Pharms., Inc.*, 707 F.3d 1330, 1340 (Fed. Cir. 2013). "A two-step analysis is employed in making an infringement determination." *Intell. Ventures I, LLC v. Canon Inc.*, 104 F. Supp. 3d 629, 637-38 (D. Del. 2015) (citing *Markman v. Westview Instruments, Inc.,* 52 F.3d 967, 976 (Fed. Cir. 1995)). "First, the court must construe the asserted claims to ascertain their meaning and scope." *Id.* Second, the trier of fact must "compare the properly construed claims with the accused infringing product" to determine whether the product embodies the claims as construed. *Id.* "This second step is a question of fact." *Id.* (citing *Bai v. L & L Wings, Inc.,* 160 F.3d 1350, 1353 (Fed. Cir. 1998)).

The jury unanimously found that Defendants infringed the asserted claims of the '597 patent and the '810 patent. Defendants argue that no reasonable jury could have found infringement of either patent. For the reasons set forth below, the Court disagrees.

a. Infringement of the '597 Patent

The jury found that using QIAseq Targeted DNA Panels, QIAseq Targeted RNAscan Panels, QIAseq Immune Repertoire RNA Library Kits, QIAseq Index Kits for the Illumina and Ion Torrent platforms and GeneRead QIAact Kits (collectively "the '597 Accused Products") infringes claims 1, 5 and 19 of the '597 patent. (*See* D.I. 465 at 3-4).[2] Qiagen challenges the jury's

[2] The jury found that Defendants directly infringed by using the '597 Accused Products and also induced and contributed to infringement by their customers' use of the '597 Accused Products. The arguments Defendants raise challenging the findings of induced and

finding that the '597 Accused Products include two elements in the asserted claims: the "target-specific primer" and the "target-specific hybridization sequence." (*See* D.I. 497 at 1-8).

The asserted claims of the '597 patent require a "target-specific primer." (*See* JX-003 ('597 patent), 77:10-20, 77:57-60, 78:48-51). The Court construed this term to mean:

> a primer that has a level of complementarity between the primer and the target such that there exists an annealing temperature at which the primer will anneal to and mediate amplification of the target nucleic acid and will not anneal to or mediate amplification of non-target sequences present in a sample

(D.I. 254 at 1-2). Defendants contend that "[n]o reasonable jury could have concluded" that the accused forward primer ("FP") is a target-specific primer because it "anneals to the complement of the artificial adaptor sequence ligated to all fragments in a sample." (D.I. 497 at 2). The crux of Defendants' argument is that the FP cannot be target-specific because it effectively binds "to all sequences in a sample." (*See id.* at 3). In support of this contention, Defendants point to testimony that an adaptor primer "[b]y itself" will not "distinguish target from off-target" sequences. (Tr. at 268:4-24). Defendants argue that this evidence shows that the adaptor sequence "is [a] sequence shared across all or most libraries." (D.I. 497 at 3).

The jury, however, heard substantial evidence to the contrary. First, at trial, Plaintiffs' expert Dr. Lennon testified that "the FP primer in the QIAGEN workflow, targets the ligated adaptor" and thus satisfies the Court's construction of "target-specific primer." (Tr. at 501:2-502:25). Second, contrary to Defendants' contention, the jury heard testimony that the FP binds only to "a very small proportion of the molecules" in a sample. (Tr. at 617:11-618:2). Dr. Lennon explained that although the adaptors are present in all molecules in a sample, the FP binds to the

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contributory infringement are directed only to the underlying act of direct infringement. Therefore, the Court does not separately address indirect infringement.

adaptor *complement*, which is only present in a fraction of the molecules. (Tr. at 618:21-620:19 & 635:8-636:20). The jury was entitled to credit Dr. Lennon's testimony.

In addition, Defendants argue that the jury's finding is "inconsistent with the Court's claim construction" because the FP works "in conjunction with the GSP" to target and amplify sequences. (*See* D.I. 497 at 4). As Plaintiffs point out, however, "nothing in the Court's construction precludes the target-specific primer from 'mediat[ing] amplification of the target nucleic acid' (D.I. 254 at 1-2) in concert with another primer." (D.I. 500 at 5). The jury was thus allowed to believe Dr. Lennon's testimony that "the FP in concert with the GSP selects for and amplifies the molecules that we're interested in outlining." (Tr. at 497:10-18). In the face of conflicting evidence about whether the claim limitation "target-specific primer," as construed, was met by the '597 Accused Products, the jury was entitled to believe the evidence that the FP meets the Court's construction.

Finally, Defendants assert that no jury could find the FP to be the target-specific primer of the '597 patent because the FP was identified as a universal primer for the '810 patent. (D.I. 497 at 2). The Court sees no reason why the FP could not serve different functions with respect to the two different patents, and Defendants cite no case law that forecloses such a finding as a matter of law. Furthermore, as Plaintiffs argue, the '597 patent adopts a different definition of "target nucleic acid" than the '810 patent.[3] (D.I. 500 at 2-3 (citing JX-001 ('810 patent), 10:50-53, D.I. 254 at 1 and JX-003 ('597 patent), 15:30-32)). Therefore, it was proper for the jury to find that

[3] The '810 patent defines "target nucleic acid" as follows: "a nucleic acid molecule comprising both the nucleic acid sequence which is to be determined and the known target nucleotide sequence." (JX-001 ('810 patent), 10:50-53). In contrast, the Court used the '597 patent's definition of "target nucleic acid" to construe the term with respect to that patent: "a nucleic acid molecule of interest (e.g., a nucleic acid to be analyzed)." (D.I. 254 at 1; JX-003 ('597 patent), 15:30-32).

the FP is both the '810 patent's "first adaptor primer" and the '597 patent's "target-specific primer."

The asserted claims of the '597 patent also require the target-specific primer to have a "target-specific hybridization sequence." (*See* JX-003 ('597 patent), 77:10-20, 77:57-60, 78:48-51). Per the Court's construction, a target-specific hybridization sequence is one that:

> has sufficient complementarity with a sequence of the double-stranded target nucleic acid to enable hybridization between the target-specific primer and a sequence in/of the double-stranded target nucleic acid.

(D.I. 254 at 2). Defendants contend that "Plaintiffs put on no evidence identifying the accused Double Stranded Target Nucleic Acid ("DSTNA") at trial," and thus no jury could find that the '597 Accused Products met this claim limitation. (D.I. 497 at 6). Defendants proceed to undercut their own argument, however, by citing to testimony Plaintiffs' expert offered at trial, identifying the accused DSTNA. (*See* D.I. 497 at 6 (citing Tr. at 591:17-592:13)). Plaintiffs' expert, Dr. Lennon, identified the DSTNA, explaining that "after the GSP extends, we have a double-stranded DNA molecule" to which the FP then binds (Tr. at 634:1-635:5). Defendants' own expert conceded that Dr. Lennon had identified this molecule as the required DSTNA. (Tr. at 988:10-20). Furthermore, as Plaintiffs note, "Qiagen does not dispute that [the identified DSTNA] includes a sequence to which a hybridization sequence on the FP anneals." (D.I. 500 at 7).

Defendants argue, however, that the identified molecule cannot be the claimed DSTNA because it does not yet exist at the outset of the process and thus there would be a lack of antecedent basis for "the double stranded target nucleic acid" in step b of claim 1. (*See* D.I. 497 at 7). Defendants contend that "a POSA [*i.e.,* a person of ordinary skill in the art] would not know which [DSTNA] is being referred to." (*See id.*). This, however, is a question of fact for the jury, and the jury heard testimony that "a person of ordinary skill in the art would" understand what is being

referred to because "[i]t's like reading a recipe" in which the order of the ingredients is interchangeable. (Tr. at 1135:2-15). Therefore, the jury had a legally sufficient evidentiary basis to conclude that the identified DSTNA met the '597 patent's claim limitation. *See Energizer Holdings, Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006) (quoting *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359 (Fed. Cir. 2001) ("[D]espite the absence of explicit antecedent basis, '[i]f the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite.'")).

In sum, the jury heard substantial evidence to support its finding that the '597 Accused Products contained both a target-specific primer and a target-specific hybridization sequence. Thus, the Court must deny the Defendants' motion for judgment as a matter of law on infringement of the '597 patent.

b. Infringement of the '810 Patent

The jury found that the use of QIAseq Targeted DNA Panels, QIAseq Targeted RNAscan Panels, QIAseq Immune Repertoire RNA Library Kits and QIAseq Index Kits for the Illumina platform (collectively "the '810 Accused Products") infringe claims 16, 17 and 19 of the '810 patent under the doctrine of equivalents.[4] (*See* D.I. 465 at 2-3). Defendants assert that no reasonable jury could have found infringement because the '810 Accused Products lack three elements required by the asserted claims: a "sequence identical to a first and second sequencing primers," "adaptor primers" and the "sequence identical to first and second sequencing." (*See* D.I. 497 at 8-17).

[4] As with the '597 patent, the jury found that Defendants directly infringed and also induced and contributed to infringement from their customers' use of the '810 Accused Products, and the arguments Defendants raise as to indirect infringement address only the underlying act of direct infringement.

First, the asserted claims of the '810 patent require the universal oligo tail adaptor to have a sequence identical to a first and second sequencing primers. (*See* JX-001 ('810 patent), 75:44-67, 77:19-78:18, 78:22-23; D.I. 146 at 1). At trial, Plaintiffs identified P7 and Read 2 as the first and second sequencing primers. (Tr. at 468:15-19, 474:9-475:11 & 594:2-14). Defendants' sole contention with respect to this limitation is that Plaintiffs failed to prove that P7 was a "sequencing primer." (D.I. 497 at 8-11). "Sequencing primer" was not a term the parties sought to have construed. (*See* D.I. 123). Therefore, the jury was free to rely on the plain and ordinary meaning of the term in deciding infringement. *See ePlus, Inc. v. Lawson Software, Inc.,* 700 F.3d 509, 520 (Fed. Cir. 2012). Both parties agree that P7 is a primer that "anneals fragments to a flow cell," a process called cluster generation. (*See* D.I. 497 at 8, D.I. 500 at 9 (citing Tr. at 595:19-596:16)). Dr. Lennon testified that "people of ordinary skill, understand" cluster generation to be "part of the sequencing process." (Tr. at 473:18-474:8). In addition, Dr. Lennon stated that this understanding was evidenced by one of Qiagen's own documents. (*See id.*). Although Defendants' expert testified that he did not think P7 was a "sequencing primer" (Tr. at 911:1-912:19), the jury was entitled to assess credibility and believe Plaintiffs' expert over that of Defendants. Therefore, the Court sees no reason to disturb the jury's verdict.

Second, the claims require a second adaptor primer ("SAP") with a "portion identical to a first sequencing primer." (*See* JX-001 ('810 patent), 75:44-67, 77:19-78:18, 78:22-23; D.I. 146 at 2). Qiagen argues that the jury had a legally insufficient basis to find that (a) P7 is the first sequencing primer and (b) the SAP has a sequence identical to a "portion" of P7. (*See* D.I. 497 at 11-12). Defendants' first argument fails for the reasons noted above. As to the second argument, the jury heard testimony that all 24 nucleotides of the SAP are identical to all 24 nucleotides of P7. (Tr. at 915:15-19). Defendants do not dispute this testimony, but rather argue that it was

improper for the jury to find that identical "to a portion" may include identical to the whole. (*See* D.I. 497 at 11-12). As Defendants note in the next section of their brief, however, the '810 specification states that "[a] portion can comprise all or only a subset of the nucleotides comprised by the molecule." (JX-001 ('810 patent), 9:1-5). Thus, the jury was entitled to credit Dr. Lennon's testimony that the SAP "has a sequence identical to a portion of the first sequencing primer." (Tr. at 481:18-21).

Third, Qiagen contends that "no reasonable jury could have concluded that the [second target-specific primer ("STSP")] has [a] sequence identical to a second sequencing primer," as required by the asserted claims. (D.I. 497 at 13). As Plaintiffs point out, however, the jury heard evidence that the SIP (the accused STSP) has a 19-base sequence that is identical to 19 of the 34 bases in Read 2 (the second sequencing primer). (D.I. 500 at 11 (citing Tr. at 610:14-613:1 & 916:12-24)). The jury was not precluded from finding that "identical" may include identical to a portion, and therefore was allowed to find for Plaintiff. *See ePlus, Inc. v. Lawson Software, Inc.,* 700 F.3d 509, 520 (Fed. Cir. 2012) ("In the absence of . . . a construction, however, the jury was free to rely on the plain and ordinary meaning of the term . . . ."). !

Finally, Defendants challenge the jury's finding that the SIP infringes the second target-specific primer limitation under the doctrine of equivalents. (*See* D.I. 497 at 13-17). An accused device that does not literally infringe may still infringe under the doctrine of equivalents "if there is 'equivalence' between the elements of the accused product or process and the claimed elements of the patented invention." *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997). Analysis under the doctrine of equivalents follows one of two tests endorsed by the Supreme Court – the insubstantial differences test or function-way-result test – both of which are performed on an element-by-element basis. Both parties use the function-way-result framework

in their post-trial briefs. (*See* D.I. 497 at 13, D.I. 500 at 12). The function-way-result test evaluates whether the element in the accused product performs substantially the same function, in substantially the same way, to achieve substantially the same result as the claimed element. *Warner-Jenkinson,* 520 U.S. at 39-40.

Defendants argue that Plaintiffs put forth insufficient evidence to meet this test. Regarding the first element, Defendants contend that "the function of a target-specific primer in the '810 patent is to anneal to and mediate amplification of [the] target nucleic acid" and thus "enrich[] the target sequence." (D.I. 497 at 13-14). They argue that the SIP does not perform substantially the same function because it (a) "bind[s] to [the] common tail sequence added by the GSP" and (b) enriches the target sequence only "when paired with the adaptor primer." (*Id.*). Defendants' arguments rely on the incorrect assumption that the jury was required to credit Defendants' expert's testimony of the STSP's "function" over that of Dr. Lennon, Plaintiffs' expert. Dr. Lennon identified three functions of the STSP that the SIP performs: "[1] amplifying the amplification product of Step 2, [2] producing an amplification product that is capable of being sequenced, and also [3] reducing undesirable amplification products by being paired with the second adaptor primer." (Tr. at 487:21-488:15). The jury was entitled to credit this testimony.

With respect to the second element, Defendants argue that the SIP does not perform in substantially the same way because (a) it does not "bind to [the] known target nucleotide sequence" and (b) it is not "nested with respect to the first-target-specific primer." (D.I. 497 at 14). Again, Defendants fail to show why the jury was required to credit Defendants' narrow interpretation of "substantially the same way" over that of Plaintiffs. Dr. Lennon testified that the SIP performs the functions he identified in "the same way," by, for example, amplifying "the product of the first

amplification reaction by pairing with a nested opposing primer." (Tr. at 488:2-15). The jury was free to make credibility determinations or to accept Plaintiffs' expert testimony.

Defendants also contend that the '810 patent "specifically teaches not to use hemi-nested primers." (D.I. 497 at 14). Therefore, they argue that it was improper for the jury to find that the accused SIP works in substantially the same way as the claimed STSP because the SIP is not nested with respect to the first target-specific primer, and thus their products use a hemi-nested method. (*See id.*). Per the Court's construction, a "nested" primer is one that "anneal[s] to a nucleic acid sequence 3' downstream and in the same direction as" the other primer. (D.I. 146 at 2). At trial, experts explained that primers are said to be "hemi-nested" when "the primers on one side are nested, and the primers on the other side are not." (*E.g.*, Tr. at 219:20-22). As Plaintiffs explain, however, "there are two types of hemi-nested methods – those in which only the adaptor primers are nested, and those in which only the target specific primers are nested." (D.I. 500 at 13). The jury heard evidence from at least three witnesses that the '810 patent discourages only one of the hemi-nested methods: methods in which the target-specific primers are nested and adaptor primers are not nested. (Tr. at 220:4-24, 538:4-7 & 779:10-14). Qiagen does not dispute that its products use the opposite approach: non-nested target-specific primers and nested adaptor primers. (*See* D.I 499 at 14; *see also* Tr. at 779:10-18; D.I. 500 at 14). As Plaintiffs point out, the '810 patent in fact "expressly discloses" the use of nested adaptor primers. (D.I. 500 at 14 (citing JX-001 ('810 patent), 17:43-45) ("The use of two adaptor primers, as described herein [*i.e.*, nested adaptor primers] can reduce, and in some embodiments eliminate, these problems.")). The jury, therefore, had an ample basis for rejecting Defendants' argument and determining that the SIP worked in substantially the same way as the claimed invention.

With respect to the third element, Defendants assert that no reasonable jury could find that the SIP achieves substantially the same result as the STSP because the result of Qiagen's process is "simply to copy everything that was amplified in the first round of PCR rather than further enriching for the target nucleic acid of interest." (D.I. 497 at 15). Again, Defendants' argument asks the Court to disregard Plaintiffs' proffered evidence. At trial, Dr. Lennon explained that the SIP and STSP achieve substantially the same result with respect to the three functions he identified. (Tr. at 488:16-489:7). This evidence was unrebutted at trial and Defendants do not attempt to rebut it in their post-trial briefs. (*See* D.I 500 at 16, D.I. 497 at 15-17 & D.I. 514 at 7). Rather, Defendants merely repeat their own expert's opinion on the matter. In the face of conflicting testimony about whether Qiagen's products perform substantially the same function, in substantially the same way, to achieve substantially the same result, the jury was entitled to credit Plaintiffs' evidence.

In sum, substantial evidence supports the jury's finding that Defendants infringed the '810 patent. Therefore, the Court will deny Defendants' motion for judgment as a matter of law on infringement of the '810 patent.

2. Patent Validity

An issued patent is presumed valid. *See* 35 U.S.C. § 282. To overcome this presumption, a party must show by clear and convincing evidence that the patent is invalid. *See Hewlett–Packard Co. v. Bausch & Lomb, Inc.,* 909 F.2d 1464, 1467 (Fed. Cir. 1990). Defendants challenged the validity of the '810 patent and '597 patent at trial on multiple grounds. (*See* D.I. 465 at 5-7). Defendants now argue that no reasonable jury could have found that Defendants failed to meet their burden with respect to two of those grounds: written description and definiteness. For the reasons set forth below, the Court disagrees.

a. Written Description

For a patent to be valid, its specification must contain a written description that "clearly allow[s] persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed." *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*). "In other words, the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Id.* !

Starting with the '810 patent, Defendants contend that although the patent "covers a non-nested STSP," a "POSA reading the '810 specification would not understand the '810 inventors were in possession of such an invention." (D.I. 497 at 17). Defendants point to testimony that the patent only explicitly includes examples in which the STSP was nested. (D.I. 497 at 17 (citing Tr. at 953:16-23 & 211:14-17)). Plaintiffs, however, point to testimony that identified support for non-nested STSP's in the specification. (Tr. at 1126:17-1127:15 ("[T]here is a written description . . . in the body of the patents, description text, that describes the workflow in a way that's not nested.")). The jury was entitled to credit Plaintiffs' evidence.

In addition, Defendants assert that inventor Dr. Iafrate claimed that "he and the other inventors had tried" the process with non-nested target-specific primers "but it did not work." (D.I. 514 at 9). Defendants overstate that evidence. At trial, Dr. Iafrate testified that he had worked on the non-nested approach and "[i]t worked," only "the nested approach worked better." (Tr. at 215:12-18). As Plaintiffs state, however, "the claims do *not* require the STSP to achieve an on-target rate or level of specificity." (D.I. 500 at 21). Thus, Dr. Iafrate's testimony does not support Defendants' contention that '810 fails the written description requirement. The jury had sufficient basis for finding that Defendants failed to meet their burden.

Turning to the '597 patent, Defendants argue that "a POSA reading the [patent] would not understand the inventors possessed an invention that ligated a universal adaptor onto the sequence of interest and called a primer that anneals to the universal sequence, a target-specific primer." (D.I. 497 at 18). As Plaintiffs note, Defendants fail to point to any relevant testimony in support of this contention. (*See* D.I. 500 at 21-22). Rather, Defendants cite Dr. Metzker's testimony regarding his noninfringement theories which do not "even purport[] to apply the relevant legal standard." (D.I. 500 at 21-22 & D.I. 497 at 18-19). This is not clear and convincing evidence. Defendants have thus given no basis on which the Court may grant judgment as a matter of law with respect to their written description claims.

b. Indefiniteness

Patent claims must be "sufficiently definite." *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002). "[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Definiteness "is amenable to resolution by the jury where the issues are factual in nature." *BJ Servs. Co. v. Halliburton Energy Servs., Inc.*, 338 F.3d 1368, 1372 (Fed. Cir. 2003); *see also Bombardier Recreational Prods. Inc. v. Arctic Cat Inc.,* 785 F. App'x 858, 867 (Fed. Cir. 2019) ("Because the jury found the claims indefinite, we presume that it resolved the underlying factual issues relating to the construction of [the disputed term] in [the accused infringer's] favor.").

Starting with the '810 patent, Defendants argue that the '810 claims are indefinite "because there is no description in the specification of what constitutes a sequence in the adaptor primers being identical to a portion of the sequencing primers." (D.I. 497 at 19). That is, "the patent does

not inform a POSA if a 'portion' means one, two, three, four, etc. nucleotides." (*Id.*). Defendants' entire argument rests on the following eight lines cited from the trial transcript:

> Q: And what is your opinion here?
>
> A: This is a different argument. This means it's indefinite. It means – the Court has construed two terms, universal oligonucleotide tail adaptor that has sequences identical to a first and second sequencing primer. It's also construed a second target-specific primer that also has sequences identical to a second sequencing primer. The specification doesn't help you whether these two second sequencing primers are the same of if they are different.

(Tr. at 954: 15-23). This excerpt fails even to mention the word "portion"[5] and is not clear and convincing evidence that the patent fails to inform a POSA, with reasonable certainty, about the scope of the invention as to what a portion of the sequencing primers means.[6] Therefore, the jury was entitled to find for Plaintiffs on the issue of indefiniteness.

Turning to the '597 patent, Defendants contend that "a POSA would have no idea which ' . . . double stranded target nucleic acid' is being referred to throughout claim 1 element b." (D.I.

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[5] As Plaintiffs note, this testimony appears to address Defendants' other argument regarding indefiniteness (*i.e.*, regarding whether the second sequencing primer in the STSP and in the universal oligonucleotide tail adaptor must be the same primer). (*See* D.I. 500 at 22).

[6] Plaintiffs argue that Qiagen has waived this issue as this theory of indefiniteness was "never presented to the jury." (D.I. 500 at 22). Although Defendants dedicated a brief sentence to this theory (*i.e.*, that the word "portion" is indefinite) in their Rule 50(a) motion, Plaintiffs are correct in stating, "the only indefiniteness argument that Dr. Metzker presented to the jury involved a different theory – namely, whether the 'second sequencing primer' in the STSP and in the universal oligonucleotide tail adaptor must be the same primer." (Tr. at 1161:5-9; D.I. 500 at 22 (citing Tr. at 954:14-23)). Defendants counter that the question of indefiniteness is "ultimately a question of law for the Court to decide." (D.I. 514 at 10). If the Court should decide this question as a matter of law on the record before it, the Court finds in favor of Plaintiffs because (as discussed above) Defendants have failed to meet their burden of showing definiteness by any – let alone clear and convincing – evidence. Thus, the Court declines to reach the question of whether Defendants waived this theory.

497 at 20). Defendants repeat their arguments regarding non-infringement of the '597 patent (*i.e.*, that there is a lack of antecedent basis for "the" DSTNA in claim 1 element b). The Court dealt with these arguments above, and Defendants cite to no new testimony in support of their indefiniteness claim. (*See supra* § III.A.1.a). As noted above, Plaintiffs offered testimony that "a person of ordinary skill in the art would" understand what is being referred to because "[i]t's like reading a recipe" in which the order of the ingredients is interchangeable. (Tr. at 1135:2-15). The jury, therefore, had legally sufficient basis to find that Defendants failed to meet their burden in proving either patent invalid for indefiniteness. *See Energizer Holdings, Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006) ("[D]espite the absence of explicit antecedent basis, '[i]f the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite.'").

In sum, the Court sees no reason to disturb the jury's findings that the '810 and '597 patents are not invalid.

3. Willfulness

A determination of willfulness requires a finding of "deliberate or intentional" infringement. *SRI Int'l, Inc. v. Cisco Sys., Inc.*, 14 F.4th 1323, 1330 (Fed. Cir. 2021). Plaintiffs must show that "the accused infringer knew of the patent-in-suit, and knowingly or intentionally infringed the patent after acquiring that knowledge." *Jackson v. Seaspine Holdings Corp.*, No. CV 20-1784-RGA, 2022 WL 610703, at *7 (D. Del. Feb. 14, 2022) (citing *Eko Brands, LLC v. Adrian Rivera Maynez Enters., Inc.*, 946 F.3d 1367, 1378-79 (Fed. Cir. 2020)). The jury found that Defendants willfully infringed both the '597 and '810 patents. (*See* D.I. 465 at 8). Defendants ask the Court to grant a new trial on the jury's willfulness finding. (D.I. 497 at 20). For the reasons set forth below, the Court denies Defendants' request.

Defendants first argue that a new trial on willfulness is warranted because there was "insufficient evidence to establish that infringement was willful." (*Id.* at 21.). The Court disagrees. First, Qiagen itself admits that Dr. Lader, a vice president of research and development at Qiagen, had been aware of Plaintiffs' patents since 2015 and reviewed the '810 patent in 2018 regarding its relevance to Qiagen products and the '597 patent later. (D.I. 497 at 20-21 & D.I. 500 at 19). Both he and Dr. Wang, senior director for research and development at Qiagen, "carefully studied" Plaintiffs' patents. (D.I. 497 at 20). In addition, Plaintiffs point to Dr. Lader's admission that Qiagen maintained a "patent watch list" for other companies but chose not to include Archer on the list. (D.I. 500 at 19 (citing Tr. at 681:15-683:21)). This is sufficient evidence to support the jury's finding that Defendants (a) had knowledge of the patents and (b) knowledge of infringement. Dr. Lader's assertion that he did not "believe" Qiagen infringed either patent does not preclude a finding of willfulness. (*See* D.I. 497 at 20-21 (citing Tr. at 691:7-692:20 & 701:4-10) ("I believe Qiagen's products do not infringe the '597 patent . . . I found the claims to be rather confusing, but, yes, I reached that conclusion.")). The jury was entitled to assess credibility and infer willfulness from the evidence presented, particularly given the fact that Dr. Lader admitted he was "not a patent expert." (Tr. at 701:19-20). This is thus not a case "where the verdict, on the record, cries out to be overturned." *Williamson*, 926 F.2d at 1353.

In addition, Defendants argue a new trial on willfulness is warranted because "Plaintiffs' counsel poisoned the well by making legally impermissible arguments" before the jury when counsel referenced Defendants' alleged failure to receive a freedom to operate opinion from in-house counsel.[7] (D.I. 497 at 21). First, as noted above, the jury heard substantial other evidence

[7] Defendants cite three instances in which Plaintiffs referenced Qiagen's lack of a freedom to operate ("FTO") at trial. (Tr. at 864:15-865:8, 1244:1-4 & 1245:14-1246:5). Plaintiffs counter that, in all three instances, Plaintiffs were attempting to mitigate Qiagen's

on which it could properly base its finding. Defendants point to nothing that suggests the verdict was the result of improper prejudice. Second, as Plaintiffs note, "the Court gave Qiagen the choice between a curative instruction and an opportunity to address the purportedly prejudicial statements in closing arguments." (D.I. 500 at 18 (citing Tr. at 1266:1-4)). Defendants opted to address the issue in closing and then chose not to do so. (Tr. at 1266:5-8). Having refused to take either opportunity to repair any damage, Defendants cannot now argue that they believe the statements so prejudicial to have improperly influenced the jury verdict.

Given the evidence in support of the jury's finding of willfulness, the Court denies Defendants' motion for new trial on willfulness.

"improper insinuation that Qiagen had received an exculpatory opinion." (D.I. 500 at 18). The "improper insinuation" to which Plaintiffs refer is excerpted below:

> Q: [What does Qiagen do] when it thinks it's using somebody else's technology?
>
> A: What QIAGEN does when it thinks it's – first of all, we have – I mean, I would say, a pretty good IP department, intellectual, property department, and these people are interacting a lot with the R&D folks and they are discussing about patents or potential infringement, if there is any. We also very often use external counsel, so we try to do our best to make sure that we have the rights to sell the products we're selling.

(Tr. at 809:8-17). Defendants argue that Plaintiffs' references to the FTO improperly asks the jury to make an adverse inference based on the failure to provide an opinion of counsel in violation of *Knorr-Bremse*. (D.I. 497 at 21 (citing *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1344 (Fed. Cir. 2004))). Plaintiffs counter that such references were permissible because Defendants "opened the door" by implying they had received an FTO in the exchange cited above (and thus, *Knorr Bremse* is inapplicable). (D.I. 500 at 18) (citing *Hologic, Inc. v. Minerva Surgical, Inc.*, 2018 WL 3348998, at *2 (D. Del. July 9, 2018)). The Court finds that, regardless of whether Plaintiffs' statements violated *Knorr-Bremse*, Defendants are not entitled to a new trial. Therefore, the Court declines to revisit whether such statements were improper in light of *Knorr-Bremse* and Defendants' own testimony cited above.

4. Damages

The jury awarded Plaintiffs $841,756 in lost profits in connection with Defendants' RNA-related products sold in the Unites States, $1,593,762 as a reasonable royalty for sales of DNA-related products in the Unites States and $2,240,303 as a reasonable royalty on products sold to customers outside the United States. (*See* D.I. 465 at 8). Defendants challenge the jury award of lost profits and foreign damages and seek remittitur of the royalty for U.S. sales.

a. Lost Profits

To be entitled to lost profits, Plaintiffs must "show a reasonable probability that, but for the infringement, [they] would have made the sales made by" Qiagen. *Presidio Components, Inc. v. Am. Tech. Ceramics*, 875 F.3d 1369, 1380 (Fed. Cir. 2017). At trial, Plaintiffs sought to establish lost profits using the *Panduit* factors. (Tr. at 721:24-731:22). "The Panduit test requires the patentee to show: (1) 'demand for the patented product'; (2) 'absence of acceptable noninfringing substitutes'; (3) 'manufacturing and marketing capability to exploit the demand'; and (4) 'the amount of profit that ... would have [been] made.'" *Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1240-41 (Fed. Cir. 2017) (quoting *Panduit Corp. v. Stahlin Brothers Fibre Works, Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978)).

Defendants challenge the lost profits award, arguing that (a) there was insufficient evidence for the jury to find an absence of non-infringing alternatives, (b) there was no evidence that "any customer purchased [Defendants'] RNA panels because of the" infringing technology and (c) Plaintiffs presented no market share analysis. For the reasons below, the Court denies Defendants' motion.

First, Defendants contend that Plaintiffs failed to show the absence of non-infringing alternatives because some evidence showed that Archer had "multiple market competitors." (*See* D.I. 497 at 22). As Plaintiffs note, however, "[m]ere existence of a competing device does not

make that device an acceptable substitute." *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.,* 702 F.3d 1351, 1361 (Fed. Cir. 2012) (quoting *TWM Mfg. Co. v. Dura Corp.,* 789 F.2d 895, 901 (Fed. Cir. 1986)). Rather, whether a competing device should be considered an acceptable substitute is a question of fact for the jury. *See Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics*, Inc., 976 F.2d 1559, 1577 (Fed. Cir. 1992). Here, the jury heard testimony from numerous witnesses that the supposed competing products were "not viable options," used technology that was "a little bit ancient," could lead to patients being "wrongfully misdiagnosed," did not work with RNA at all, or were not "competitive." (Tr. at 510:25-512:4, 356:13-357:13, 353:18-22, 360:17-362:3, 709:7-21 & 712:20-713:11). Much of the evidence Defendants claim undermines the jury's finding pertains to Illumina's RNA products. (*See* D.I. 497 at 22-23 (citing Tr. 1-81:7-18, 383:11-384:7 & 388:12-389:2)). The jury, however, heard testimony that Illumina's products were inferior and thus not an acceptable substitute. (*See, e.g.*, Tr. at 356:22-357:13 (explaining that Illumina requires larger sample sizes from patients and thus leads to a more "traumatic" experience and that the technology used was "a little bit ancient")). In addition, much of the evidence Defendants cite in support of their argument refers to Plaintiffs' competition more broadly (rather than in the market for which lost profits was awarded, *i.e.*, RNA products in the United States). (*See* D.I. 497 at 22 (citing DX-327.145 (referring to Archer's competition in "life sciences more broadly") and Tr. at 331:1-1, 396:12-397:1, 705:20-25, 712:3-11 & 1020:12-1030:17 (discussing library preparation in general))). Based on this evidence, the jury could reasonably have found that Plaintiffs met their burden in proving the absence of non-infringing alternatives.

Second, Defendants argue that Plaintiffs are not entitled to lost profits because they "presented no evidence that any customer" purchased the infringing products because of the

patented technology. (D.I. 497 at 24). This argument fails as a matter of law. A patentee is not required to provide direct evidence that customers bought the infringing products because of the patented technology to be entitled to an award of lost profits. *See Panduit*, 575 F.2d at 1156 (establishing elements patentee is required to show for an award of lost profits). Regardless, Qiagen's witness testified that the patented "single primer extension" technology is "the underlying reason why [customers] work with us." (Tr. at 713:18-714:15).

Third, Defendants assert that Plaintiffs were required to put forth evidence of market share in order for the jury to properly award lost profits. The jury, however, awarded Plaintiffs lost profits for 100% of Defendants' RNA sales in the United States, thus implying a finding that the relevant market was a two-supplier market. In such a case, evidence of market share is irrelevant. *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1286 (Fed. Cir. 2017) ("The market share theory is irrelevant in this case because the jury made a factual finding . . . that the relevant emulator market for sales to Intel was a two-supplier market."). ‼

Defendants have failed to show that the jury's award of lost profits must be overturned.

b. Foreign Damages

Defendants argue that Plaintiffs were not entitled to royalties for products sold to purchasers outside of the United States because (a) allowing foreign damages when method claims are asserted and infringement is found under 35 U.S.C. 271(a) is contrary to the Supreme Court's decision in *WesternGeco LLC v. ION Geophysical Corp.*, 138 S. Ct. 2129 (2018) and (b) Plaintiffs presented insubstantial evidence that infringement in the United States was a substantial cause of the foreign sales.

First, at issue is the applicability of the Federal Circuit's holding in *Carnegie Mellon Univ. v. Marvell Technology Group, Ltd.*, 807 F.3d 1283 (2015) ("*CMU*"). This matter was hotly contested at trial. Plaintiffs argued that *CMU* allowed the jury to use sales made outside of the

United States to calculate damages for infringement in the United States if Archer could prove that (1) Defendants' infringement in the United States was a cause of the sale of that product and (2) Defendants made or sold the product within the United States. (*See* D.I 452 & D.I. 457). Defendants countered that doing so would "run[] contrary to longstanding precedent" that held that performing steps of a patented method abroad is not an act of infringement and thus a patentee has no right to damages for such uses. (D.I. 456 at 1-3). After briefing on the matter was completed, the Court issued an order agreeing to a modified version of Plaintiffs' proposed jury instructions on damages calculated based on sales to foreign customers. *ArcherDX, LLC v. QIAGEN Scis., LLC*, No. CV 18-1019 (MN), 2021 WL 3857460 (D. Del. Aug. 30, 2021). The Court reasoned,

> The issue here . . . is not whether the foreign uses of the patented methods are infringing – they are not and Plaintiffs concede that. The question is whether the sales of products that use the methods to foreign users can be used to measure damages for acts of infringement in the United States. United States patent law allows "damages adequate to compensate for the infringement." Here, the infringement is asserted under § 271(a), which, for the method claims at issue, makes it an act of infringement to use the claimed methods in the United States. The claims for induced infringement under § 271(b) and contributory infringement under § 271(c) also require direct infringement under § 271(a). And, as I said, that infringement must be performance of the method claim in the United States.
>
> In *Carnegie Mellon University v. Marvell Technology Group, Ltd.*, 807 F.3d 1283 (Fed. Cir. 2015) [("CMU")], the Federal Circuit addressed calculation of damages for infringement of a method claim that relied on the sales of products that perform that method. Recognizing the presumption against extraterritoriality, the *CMU* court nevertheless concluded that:
>
> > 'Where a physical product is being employed to measure damages for the infringing use of patented methods, . . . territoriality is satisfied when and only when any one of those domestic actions for that unit (e.g., sale) is proved to be present, even if others of

> the listed activities for that unit (e.g., making, using) take place abroad. Significantly, once one extends the extraterritoriality principle to confining how damages are calculated, it makes no sense to insist that the action respecting the product being used for measurement itself be an infringing action. Thus, here the claim is a method claim, but the damages-measuring product practices the method in its normal intended use.'
>
> . . . [Therefore,] *CMU* makes clear that it is addressing damages for infringement – that is, damages for actions in the United States – and is not expanding the statutory requirement for infringement.

Id. at *1-2 (internal citations removed). The jury was thus instructed that it could award use sales of products that practice the patented method outside the United States to measure damages if "(1) QIAGEN's infringement in the Unites States was a substantial[8] cause of the sale of that product, and (2) QIAGEN made or sold the product within the United States." (Tr. at 1207:9-15).

Now, Defendants argue that the Supreme Court's decision in *WesternGeco* implicitly overruled *CMU*. (*See* D.I. 497 at 26). The Court disagrees. In *WesternGeco*, the Court held that a patentee was entitled to damages for sales made abroad when infringement was found under 35 U.S.C. § 271(f)(2). *WesternGeco*, 138 S. Ct. at 2137-39. The Court reasoned that "the conduct relevant to the statutory focus in [*WesternGeco*] is domestic." *Id.* at 2137. That is, infringement under § 271(f)(2) regulated "the domestic act of 'suppl[ying] in or from the United States" components of patented inventions for combination abroad. *Id.* at 2138 (quoting 35 U.S.C.

[8] The Court amended Plaintiffs' proffered instructions by requiring a "substantial" causal connection. As noted in the Court's prior order, "[a]lthough *CMU* does not refer to a 'substantial' causal connection, the Court understands that there must be more than a tangential relationship between the infringement asserted and the volume of sales." *ArcherDX,* 2021 WL 3857460 at *2 n.8 (citing *WesternGeco LLC*, 837 F.3d at 1368 (Wallach, J., dissenting) (noting that "where the volume of non-infringing sales is independent of the extent of United States infringement, those sales should not be used as a measure of damages flowing from the domestic infringement")).

271(f)(2)). Therefore, lost-profits damages for sales made abroad were properly awarded as "a domestic application of § 284." *Id.* That holding is not inconsistent with *CMU* and this Court's prior application of *CMU* to the case before it. Although in *CMU* and the present case, infringement was found under § 271(a), "the conduct relevant to the statutory focus . . . is domestic," *i.e.,* use in the United States. *See CMU*, 807 F.3d at 1306-07; *WesternGeco*, 138 S. Ct. at 2137. Therefore, by allowing the jury to calculate damages for domestic infringement by using sales made abroad related to that infringement, the Court is not implicitly finding that infringement occurred abroad but rather is allowing the patentee to recover fully for harm committed in the United States.[9]

Second, Defendants argue that "[e]ven under Plaintiffs' interpretation of [*CMU*], Plaintiffs failed to present substantial evidence to support damages for sales outside the U.S." (D.I. 497 at 28). The Court disagrees. As noted in the Court's prior order, "[i]n *CMU*, the Federal Circuit noted that the products 'practice[] the method in its normal intended use' and concluded that causation to domestic infringing uses was established given the design, simulation, and testing of the chips in California involved infringing uses and caused the worldwide sales." *ArcherDX,* 2021 WL 3857460, at *1 n.6 (citing *CMU*, 807 F.3d at 1306-07 ("all of Marvell's sales are strongly enough tied to its domestic infringement as a causation matter")). Here, Plaintiffs put forth evidence that "customers in this industry require data providing that products work;" "customers buy Qiagen's products for the infringing technology;" "generating data to prove that infringing technology works required Qiagen to infringe the asserted patents;" and "Qiagen's testing (*i.e.*,

[9] That being said, the Court takes Defendants' point that to some extent *CMU* is difficult to reconcile with other governing law. *See ArcherDX*, 2021 WL 3857460, at *2. Indeed, at trial, the Court struggled with this issue. Absent further direction from the Federal Circuit, however, the Court declines to amend its previous holding.

infringement) of the infringing products occurred in [the] U.S." (D.I. 500 at 29 (citing Tr. at 358:2-359:20, 713:18-714:15, 453:1-508:1 & 679:8-24)). The jury could thus reasonably infer from this evidence that Qiagen's domestic infringement (use of the accused products) was a substantial cause of the sale of products abroad.

c. Remittitur

Defendants seek remittitur of the jury's award of $1,593,762 in royalties for sales of DNA-related products in the United States on the basis that the award is higher than any estimate provided by the parties' experts and appears to be the result of a mistake on the part of the jury. (D.I. 497 at 29-30). Defendants point out that both the lost profits award and the royalty award for foreign sales match Plaintiffs' expert's estimates to the dollar. (D.I. 497 at 30 (citing Tr. at 732:19 & 743:13-21)). The $1,593,762 U.S. royalty award, however, is much higher than the estimate provided by Plaintiffs' expert, and, in fact is equivalent to the expert's suggested award for lost profits ($841,756) *plus* U.S. royalties ($752,006). (Tr. at 743:15-21). Defendants thus request the Court remit the award to the highest amount presented at trial: $752,006.

Plaintiffs agree that "the jury intended to award Plaintiffs a 7% royalty for infringing DNA-related products in the United States." (D.I. 500 at 30). Plaintiffs, however, contend that Qiagen waived its objection by failing to object to the verdict before the jury was excused. (*See id.*). In support of this argument, Plaintiffs cite *Frank C. Pollara Grp., LLC v. Ocean View Inv. Holding, LLC*, 784 F.3d 177, 190-91 (3d Cir. 2015). In *Pollara*, however, the court held, "if a party fails to object to an inconsistency in a general verdict before the jury is excused, that party waives any objection in that regard." *Id.* In *Pollara*, the issue was that the verdict was facially inconsistent. *Id.* ("Appellants . . . complain that the jury's verdict was inconsistent because its finding of intentional misrepresentation by Cheng precludes a finding of negligent misrepresentation by OMEI."). Here, Defendants argue that remittitur is appropriate not because of an inconsistent

verdict but because the verdict is unsupported by the evidence and the result of mistake. Plaintiffs have not cited to any case law in which the rule in *Pollara* is applied to cases like the one before the Court. *Cf. Delaware & Hudson Ry. Co., Inc. v. Knoedler Mfrs., Inc.*, 805 F. App'x 149, 152 (3d Cir. 2020) (applying *Pollara* in the context of a claim of inconsistent verdict); *EMC Corp. v. Zerto, Inc.*, No. CV 12-956(GMS), 2016 WL 1291757, at *6 (D. Del. Mar. 31, 2016), *aff'd*, 691 F. App'x 623 (Fed. Cir. 2017) (same). !

There simply is no evidentiary basis to support the $1,593,762 U.S. royalty award. And given that both parties agree the jury award was the result of a mistake, the Court will grant remittitur of the jury's award for U.S. royalties to the amount estimated by Plaintiffs' witness (the highest amount presented to the jury): $752,006. *See Smith v. Katz*, 696 F. App'x 582, 591 (3d Cir. 2017) ("[T]he remittitur is well established as a device employed when the trial judge finds that a decision of the jury is clearly unsupported and/or excessive.") (quoting *Cortez v. Trans Union, LLC*, 617 F.3d 688, 716 (3d Cir. 2010)); *see also Belardinelli v. Carroll*, 773 F. Supp. 657, 659 (D. Del. 1991) (granting remittitur because the "awards are not rationally related to the evidence and the evidence suggests that the jury may have mistakenly believed that compensation was sought for the decedent's death"); *Lewis v. United States*, No. 02-2958-STA-EGB, 2014 WL 12828838, at *3-4 (W.D. Tenn. Sept. 26, 2014) (granting remittitur due to jury's mistake in adding estimated damages shown at trial). !!

Plaintiffs may either accept the remittitur or receive a new trial on these damages. *See Cortez v. Trans Union, LLC*, 617 F.3d 688, 716 (3d Cir. 2010) ("[T]he court must offer a new trial as an alternative to a reduction in the award" when remittitur is due to insufficient evidence.). !

B. Plaintiffs' Motions

Before the Court are Plaintiffs' motions for injunction, ongoing royalty, enhanced damages, supplemental damages and pre- and post-judgment interest.

1. Injunction

Plaintiffs ask the Court to permanently enjoin Defendants from "offering [infringing] products and services approved for clinical diagnosis by a regulatory body." (D.I. 496 at 1-2).

A permanent injunction does not automatically "issue once infringement and validity have been adjudged." *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 393-94 (2006). Rather, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction. *Id.* at 391; *see also Apple, Inc. v. Samsung Elecs. Co.*, 695 F.3d 1370, 1374 (Fed. Cir. 2012).

In support of their arguments for a permanent injunction, Plaintiffs rely on evidence entered during trial as well as new evidence in the form of several declarations – one from an expert, Dr. Maria Fe Paz, who previously submitted an expert report, but who did not testify at trial, and two from Invitae employees.[10] (*See* D.I. 496 at 1-12 & D.I. 496, Ex. A-C; *see also* D.I. 501 at 17). Plaintiffs relied heavily on these declarations to support their arguments on direct competition, lost market share and the adequacy of monetary damages to compensate them. In response, Defendants attack the assertions and opinions in the declarations and request an evidentiary hearing on the injunction issue. (*See* D.I. 501 at 17). The Court agrees that a hearing at which witnesses can be cross-examined and their opinions tested would be helpful in making the credibility determinations

[10] In October of 2020, Invitae acquired Archer. (D.I. 496, Ex. B ¶ 1).

necessary to decide whether injunctive relief should issue. Thus, the Court will deny Plaintiffs' motion for an injunction subject to renewal after a hearing.

2. Ongoing Royalties

Plaintiffs request ongoing royalties for all infringing products not enjoined of 10% for sales of infringing DNA-related products and 15.5% for sales of infringing RNA-related products. (D.I. 496 at 14). Defendants ask the Court to defer its decision on whether to award an ongoing royalty until after appeal, or, in the case that the Court decides to award a royalty to do so at the rate applied by the jury. (D.I. 501 at 18).

It is within the Court's equitable discretion to determine whether an ongoing royalty need be imposed. *See Paice LLC v. Toyota Motor Corp.*, 504 F.3d 1293, 1314-15 (Fed. Cir. 2007). Although an ongoing royalty is not automatic, "the Federal Circuit has indicated that a prevailing patentee should receive compensation for any continuing infringement." *Apple, Inc. v. Samsung Elecs. Co.*, No. 12-CV-00630-LHK, 2014 WL 6687122, at *7 (N.D. Cal. Nov. 25, 2014) (citing *Telcordia Techs., Inc. v. Cisco Sys., Inc.,* 612 F.3d 1365, 1379 (Fed.Cir.2010)). Defendants dedicate just four words to arguing that an ongoing royalty would be inappropriate in this case. (*See* D.I. 501 at 18 ("[I]t should be denied.")). Rather, Defendants argue that the decision should be deferred until after any appeal is concluded. The Federal Circuit, however, has indicated that deferral of such a decision would render the judgment not "final" and thus not fit for appeal. *Warsaw Orthopedic, Inc. v. NuVasive, Inc.*, 515 F. App'x 882, 882 (Fed. Cir. 2012) ("[E]ven assuming Rule 54(b) would give this court jurisdiction over a claim that is 'final except for an accounting' within the meaning of 28 U.S.C. § 1292(c)(2), the case is not 'final' because the district court has not yet determined ongoing royalties. An ongoing royalty is not the same as an accounting for damages."); *Arctic Cat Inc. v. Bombardier Recreational Prod. Inc.*, No. 2016-2556, 2016 WL 11726241, at *1 (Fed. Cir. 2016) ("[T]his case is not 'final' for purposes of section

1292(c)(2) until the district court renders a final determination on the ongoing royalties issue."). Therefore, the Court will not defer the decision. Defendants have provided no substantive reasons for why an ongoing royalty would be inappropriate in this case, thus the Court will use its equitable discretion to grant an ongoing royalty.

In determining the ongoing royalty rate, the Court must consider: (i) the "change in the parties' bargaining positions, and the resulting change in economic circumstances, resulting from the determination of liability,"; (ii) "changed economic circumstances, such as changes related to the market for the patented products,"; and (iii) any other "post-verdict factor" that would impact "what a hypothetical negotiation would look like after the prior infringement verdict." *XY, LLC v. Trans Ova Genetics, L.C.*, 890 F.3d 1282, 1297 (Fed. Cir. 2018). "Generally, the jury's damages award is a starting point for evaluating ongoing royalties." *Apple, Inc.*, 2014 WL 6687122, at *14 (citing *Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc.*, 670 F.3d 1171, 1193 (Fed. Cir. 2012), *vacated on other grounds*, 467 F. App'x 747. In addition, the Court may consider the *Georgia-Pacific* factors. *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1370 (Fed. Cir. 2017) (citing *Georgia–Pac. Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970)).

The jury awarded Plaintiffs a royalty of 7% for sales of DNA-related products in the United States and used 7% to calculate damages for the infringement that led to sale of products abroad. With respect to the DNA-related products, Plaintiffs argue that, post-verdict, the royalty should be enhanced because "(1) the significant value of additional consideration paid by Archer to MGH . . .; (2) the vast difference in the stages of the technology . . .; and (3) the jury's finding that Qiagen willfully infringed." (D.I. 496 at 16-17). In addition, Plaintiffs argue that the following *Georgia-Pacific* factors weigh in favor of enhancement: "Archer's unwillingness to license the

Infringed Patents (Factor 4); the parties' post-verdict commercial relationship (Factor 5); the profitability and commercial success of the products using the patented technology (Factors 8, 11); the benefits of the Infringed patents (Factors 9, 10); and the contribution of the patented features to the overall product (Factor 13)." (*Id.*).

The Court is not persuaded that the factors Plaintiffs point to indicate that they would be able to secure a higher royalty rate than the rate determined by the jury. First, the jury considered all of the factors noted by Plaintiffs in making its royalty determination. (*See* D.I. 462 at 49, D.I. 496, Ex. E ⁋⁋ 28-32). At trial, Plaintiffs' expert argued that these exact factors were why the jury should enhance the 4.5% rate (provided as a starting point based on the Archer/MGH license) to 7%. (*See* D.I. 496, Ex. E ⁋⁋ 28-32.). The jury awarded Plaintiffs 7% and thus appears to have taken these factors into account. Although Plaintiff would be in a stronger bargaining position post-verdict[11], Plaintiffs point to no other circumstances that indicate they would be able to negotiate a rate higher than the already-enhanced rate determined by the jury.

With respect to the RNA-related products, Plaintiffs argue that the jury's award of a 7% royalty rate should be enhanced to 15.5% given the jury's award of lost profits. (*See* D.I. 496 at 17-18). Plaintiffs, however, cite to no law that indicates an award of lost profits requires the Court to enhance the royalty rate. Plaintiffs point to no other factors other than the lost profits award to

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[11] The Federal Circuit has stated that in determining an ongoing royalty rate, "[o]nce a judgment of validity and infringement has been entered . . . the calculus is markedly different [from the jury's calculus] because different economic factors are involved." *Amado v. Microsoft Corp.*, 517 F.3d 1353, 1362 (Fed. Cir. 2008). As other courts have noted, however, the logic behind this view in unclear given that the jury is required to award a rate negotiated by willing licensors and licensees who considered the patent(s) valid and infringed. *See, e.g.*, *Vectura Ltd. v. GlaxoSmithKline LLC*, No. CV 16-638-RGA, 2019 WL 4346502, at *7 n. 10 (D. Del. Sept. 12, 2019); *see also Apple, Inc. v. Samsung Elecs. Co.*, No. 12-CV-00630-LHK, 2014 WL 6687122, at *2 (N.D. Cal. Nov. 25, 2014). ‼

support their contention that the rate should be higher than 7%. Therefore, the Court sees no reason to disturb the jury's finding.

The Court will thus grant Plaintiffs' request for ongoing royalties at a 7% rate for both RNA- and DNA-related products.

3. Enhanced Damages

Plaintiffs request that the Court award enhanced damages under 35 U.S.C. § 284. (D.I. 496 at 20). Whether to award enhanced damages is committed to the Court's discretion. *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 579 U.S. 93, 103 (2016). Enhanced damages are "designed as a 'punitive' or 'vindictive' sanction" that is "generally reserved for egregious cases of culpable behavior." *Id.* at 103-04. "The sort of conduct warranting enhanced damages has been variously described in our cases as willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or – indeed – characteristic of a pirate." *Id.* Enhanced damages should not be awarded in "garden-variety cases." *Id.* at 109. "A jury's finding of willful infringement is a prerequisite to enhancement of damages but is not by itself sufficient." *Nox Med. Ehf v. Natus Neurology Inc.*, No. 1:15-CV-00709-RGA, 2018 WL 6427686, at *1 (D. Del. Dec. 7, 2018) (citing *Halo*, 579 U.S. at 103-04).

As an initial matter, the Court does not find that this case involves conduct suggesting willful, wanton, malicious or other nefarious behavior on the part of Defendants. Plaintiffs sued Defendants on the '810 patent just one day after it issued in 2018 and they sued Defendants on the '597 patent after this litigation had begun. (*See* D.I. 1, D.I. 130; *see also* Tr. at 692:1-19). This was a hard-fought litigation and although Plaintiffs ultimately prevailed before the jury, the issues were close. And indeed, Defendants prevailed at summary judgment as to literal infringement of the '810 patent. (*See* D.I. 447).

That being said, Plaintiffs argue that applying the factors articulated in *Read Corp. v. Portec, Inc.*, 970 F.2d 816 (Fed. Cir. 1992) favors an award of enhanced damages in the present case. Although not required, courts may turn to the *Read* factors to guide their analysis. *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 875 F.3d 1369, 1382 (Fed. Cir. 2017). The *Read* factors are: "(1) whether the infringer deliberately copied the ideas or design of another; (2) whether the infringer, when he knew of the other's patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed"; (3) "the infringer's behavior as a party to the litigation"; (4) "defendant's size and financial condition"; (5) "closeness of the case"; (6) "duration of defendant's misconduct"; (7) "remedial action by the defendant"; (8) "defendant's motivation for harm"; and (9) "whether defendant attempted to conceal its misconduct." *Liquid Dynamics Corp. v. Vaughan Co*., 449 F.3d 1209,1225 (Fed. Cir. 2006) (citing *Read*, 970 F.2d at 826-27).

Plaintiffs primarily rely on the first factor. That is, "Defendant had direct access to, and deliberately copied, Plaintiffs groundbreaking technology." (D.I. 496 at 21). The evidence Plaintiffs point to, however, is circumstantial at best and merely shows that Defendants had the opportunity to copy certain technology. (*See. id.* at 22-24 (citing evidence that Defendants had access to and tested Plaintiffs' technology)). Therefore, this factor is, at most, neutral.

Plaintiffs argue that the second factor weighs in favor of awarding enhanced damages because Qiagen knew of the patents and possible infringement yet "ignored these red flags." (*See* D.I. 496 at 24-25). Defendants counter by pointing to testimony that those who reviewed the patents "did not believe [they] were infringed." (D.I. 501 at 27). In the face of conflicting evidence, the Court finds this factor neutral.

Regarding factors three, six, seven, eight and nine, Plaintiffs fail to cite any evidence of "egregious conduct" on the part of Defendants that rises to the level of "malicious" behavior required to support an award of enhanced damages. These factors thus weigh against Plaintiffs.

Turning to the fourth factor, Plaintiffs note that "[t]rebling the jury's award is less than 0.1% of Qiagen's 2020 net sales of $1.87 billion." (D.I. 496 at 27). This factor thus weighs in favor of enhancing damages. *See nCUBE Corp. v. SeaChange Int'l, Inc.*, 313 F. Supp. 2d 361, 390 (D. Del. 2004), *aff'd*, 436 F.3d 1317 (Fed. Cir. 2006) (finding this factor to weigh in favor of enhanced damages because defendant would "not be materially impacted by an award of enhanced damages"). !

Turning to the fifth factor, as Defendants point out, this was a close case. Defendants successfully argued for summary judgment that the '810 patent was not literally infringed. (*See* D.I. 447). In addition, Defendants put forth valid arguments regarding other infringement and invalidity theories at trial. This factor weighs heavily against Plaintiffs.

In sum, the fourth factor (defendant's size and financial condition) is the only one that clearly weighs in favor of granting enhanced damages. The fifth factor strongly weighs against enhancing the damages and the others are largely neutral or unsupported by evidence. Given the lack of evidence of any egregious conduct on the part of Defendants, the Court is not persuaded that this is a case that warrants enhanced damages.

4. Supplemental Damages

Plaintiffs request supplemental damages for sales that occurred before the verdict but were not reflected in the last accounting. (D.I. 496 at 18). At trial, the parties presented damages calculations through December 31, 2020. During the pretrial conference, the Court ruled that an accounting would be performed for damages incurred between January 1, 2021 and the date of the jury's verdict. (D.I. 520 (Aug 16, 2021 Pretrial Conference Tr.) at 90). Defendants produced the

required financial data on September 3, 2021 and October 22, 2021. (*See* D.I. 496 at 19). Applying the jury award to Qiagen's data, Plaintiffs request the following amounts: $308,395 as lost profits for sales of infringing RNA-related products in the United States, $194,690[12] as a reasonable royalty on sales of infringing DNA-related products in the United States and $722,928 as a reasonable royalty for sales abroad. (*Id.*)

Defendants do not dispute this request nor the amounts. (*See* D.I. 501 at 21). Therefore, the Court will grant Plaintiffs' request for supplemental damages.

5. Pre- and Post-Judgment Interest

Plaintiffs request prejudgment interest of $225,296 for all damages through the date of judgment using the U.S. prime rate. (D.I. 496 at 19). Defendants do not contest the award of prejudgment interest or Plaintiffs' calculation. Rather, Defendants' request that the Court apply the Treasury bill rate rather than prime rate. (*See* D.I. 501 at 21). For the reasons set forth below, the Court will grant Plaintiffs' request and apply the prime rate.

Prejudgment interest is awarded to restore a plaintiff to the position it would have been in had there been no wrongdoing. *See General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 655-56 (1983); *see also Delaware River & Bay Auth. v. Kopacz*, 584 F.3d 622, 634 (3d Cir. 2009) (prejudgment interest awards "must be compensatory rather than punitive"). "The matter of prejudgment interest is left to the discretion of the district court." *Taxman v. Bd. of Educ. of Twp. of Piscataway*, 91 F.3d 1547, 1566 (3d Cir. 1996). This broad discretion, of course, extends to a determination of the appropriate interest rate to apply. *See, e.g.*, *Sun Ship, Inc. v. Matson Navigation Co.*, 785 F.2d 59, 63 (3d Cir. 1986) ("In federal question cases, the rate of prejudgment

[12] Plaintiffs use what parties agree was the jury's intended royalty of $752,006. (D.I. 496, Ex. E ¶ 15).

interest is committed to the discretion of the district court."); *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545 (Fed. Cir. 1991).

The Court will assess prejudgment interest compounded quarterly at the prime rate. *See, e.g.*, *In re Frescati Shipping Co.*, 886 F.3d 291, 315 (3d Cir. 2018) (district court within its discretion to award prejudgment interest either at the prime rate or post-judgment rate prescribed by 28 U.S.C. § 1961(a)); *see also Taxman*, 91 F.3d at 1566 ("The adjusted prime rate, established periodically by the Secretary of the Treasury and codified in 26 U.S.C. § 6621, has been used regularly by district courts to calculate prejudgment interest."); *see also Amgen Inc. v. Hospira, Inc.*, 336 F. Supp. 3d 333, 364 (D. Del. 2018) (for patent damages, awarding prejudgment interest at the prime rate compounded quarterly), *aff'd*, 944 F.3d 1327 (Fed. Cir. 2019). The prime rate is by far the most common practice in the District of Delaware. *See, e.g.*, *Bayer v. Baxalta*, No. 16-1122-RGA, 2019 WL 4016235, at *7 (D. Del. Aug. 26, 2019); *Idenix Pharm. LLC v. Gilead Scis., Inc.*, 271 F. Supp. 3d 694, 705 (D. Del. 2017); *Comcast IP Holdings I, LLC v. Sprint Commc'ns Co.*, No. 12-0205-RGA, 2015 WL 4730899, at *10 (D. Del. Aug. 10, 2015); *Ateliers de la Haute-Garonne v. Broetje Automation-USA Inc.*, 85 F. Supp. 3d 768, 783 (D. Del. 2015); *Dow Chem. Co. v. Nova Chems. Corp.*, No. 05-737-LPS, 2014 WL 1285508, at *11 (D. Del. Mar. 28, 2014); *XpertUniverse, Inc. v. Cisco Sys., Inc.*, No. 09-157-RGA, 2013 WL 6118447, at *11 (D. Del. Nov. 20, 2013).

Defendants assert that the Court should apply the Treasury bill rate because Plaintiffs "have not put forward any evidence of its borrowing rates at the relevant time." (D.I. 501 at 21-22). It is not necessary, however, for Plaintiffs to "demonstrate that it borrowed at the prime rate in order to be entitled to prejudgment interest at that rate." *Baxalta*, 2019 WL 4016235, at *7 (quoting *Uniroyal*, 939 F.2d at 1545); *see also In re Frescati Shipping Co.*, 886 F.3d at 314 ("[H]ad the

District Court chosen to use the prime rate, it would not have abused its discretion even without extensive proof of borrowing costs."); *Idenix*, 271 F. Supp. 3d at 705 (citing *XpertUniverse*, 2013 WL 6118447, at *11). Therefore, the Court is not persuaded that the Treasury bill rate should be applied in this case.

In sum, the judgment shall be amended to include prejudgment interest compounded quarterly at the prime rate for the $841,756 in lost profits in connection with Defendants' RNA-related products sold in the Unites States, $752,006[13] in royalties for sales of DNA-related products in the Unites States and $2,240,303 in royalties for sales abroad.

In addition, Plaintiffs request post-judgment interest in the amount of $10.14 per day.[14] Post-judgment interest is mandatory for damages awarded in civil cases. *See* 28 U.S.C. § 1961(a) ("Interest shall be allowed on any money judgment in a civil case recovered in a district court."). Consistent with § 1961(a), the rate proposed by Plaintiffs is the weekly average one-year constant maturity Treasury yield for the week preceding entry of judgment (*i.e.*, 0.07%). (*See* D.I. 496 at 20). Defendants do not dispute that Plaintiffs are entitled to post-judgment interest or that the rate used by Plaintiffs is proper. Therefore, Plaintiffs shall be awarded post-judgment interest calculated using that rate and starting from the date judgment on the jury verdict was entered (*i.e.*, August 27, 2021). Post-judgment interest shall be awarded for the entire amount included in the

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13 Plaintiffs use what both parties agree was the jury's intended royalty of $752,006. (*See* D.I. 496, Ex. E ⁋⁋18-20 (citing Schedule 4.1D)). The Court will grant Defendants' remittitur regarding this award and thus uses the same amount in its award of pre- and post-judgment interest.

14 Plaintiffs apply the weekly average one-year constant maturity Treasury yield for the week preceding entry of judgment, which was 0.07%. (D.I. 496 at 20). This corresponds to a daily interest rate of 0.00019% and results in $4.21 on damages for sales of infringing products sold to customers for use in the United States and $5.93 on damages for sales of infringing products sold to customers for use abroad. (*Id.*).

judgment, including prejudgment interest. *See Skretvedt v. E.I. DuPont de Nemours*, 372 F.3d 193, 217 (3d Cir. 2004). To be clear, however, post-judgment interest on the prejudgment interest award does not begin to accrue until the amended judgment quantifying the prejudgment interest is entered. *See Travelers Cas. & Sur. Co. v. Ins. Co. of N. Am.*, 609 F.3d 143, 175 (3d Cir. 2010) ("[P]ost-judgment interest on Travelers' award of prejudgment interest did not begin to run until the December 5, 2007 order was entered quantifying the amount in prejudgment interest owed to Travelers.").

In sum, the Court will grant Plaintiffs' request for pre- and post-judgment interest.

IV. CONCLUSION

For the foregoing reasons, Defendants' renewed motion for judgment as a matter of law or in the alternative, motion for a new trial or altered judgment (D.I. 495) is DENIED, Defendants' motion for remittitur is GRANTED, Plaintiffs' motion for enhanced damages (D.I. 494) is DENIED, motion for an injunction is DENIED with leave to renew after an evidentiary hearing, motion for ongoing royalty is GRANTED-IN-PART, motion for supplemental damages is GRANTED and motion for pre- and post-judgment interest is GRANTED. An appropriate order will follow.