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Paper 9
Date: February 10, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PFENEX, INC.,
Petitioner

v.

GLAXOSMITHKLINE BIOLOGICALS SA,
Patent Owner

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IPR2019-01478
Patent 9,422,342 B2

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Before SHERIDAN K. SNEDDEN, JO-ANNE M. KOKOSKI, and RICHARD J. SMITH, *Administrative Patent Judges*.

KOKOSKI, *Administrative Patent Judge*.

# DECISION
Denying Institution of *Inter Partes* Review
*35 U.S.C. § 314*

# I. INTRODUCTION

Pfenex, Inc. ("Petitioner") filed a Petition to institute an *inter partes* review of claims 1, 2, 4–14, and 16–21 of U.S. Patent No. 9,422,345 B2 ("the '345 patent," Ex. 1001). Paper 3 ("Pet."). GlaxoSmithKline Biologicals SA ("Patent Owner") filed a Preliminary Response to the Petition. Paper 7 ("Prelim. Resp.").

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). For the reasons that follow, we exercise our discretion under 35 U.S.C. § 314(a) and deny institution of *inter partes* review.

## *A. Related Proceedings*

The parties indicate that the '345 patent is the subject of four other *inter partes* review proceedings: IPR2019-00230 ("the 230 IPR") and IPR2019-00241 ("the 241 IPR"), filed by Merck Sharp & Dohme Corp. ("Merck"); and IPR2019-01027 ("the 1027 IPR") and IPR2019-01028 ("the 1028 IPR"), filed by Petitioner. Pet. xiv; Paper 5, 1. Patent Owner further identifies several *inter partes* review proceedings involving patents related to the '345 patent. Paper 5, 1.

## *B. The '345 Patent*

The '345 patent, titled "Expression System," is directed to "the field of expression of bacterial toxins, in particular diphtheria toxins (including mutant forms of diphtheria toxin, such as CRM197)," and "provides novel polynucleotides and polypeptides which can be used or produced during the processes of the invention." Ex. 1001, 1:9–15. The '345 patent explains that "CRM197 is a non-toxic form of the diphtheria toxin," and "differs from

[diphtheria toxin] by a single base change in the structural gene . . . [leading] to a glycine to glutamine change of amino acid at position 52." *Id.* at 1:39–40, 1:44–48. CRM197 is a component in vaccines providing immunity against *Corynebacterium diphtheriae*, and has been used in vaccines as a safe and effective T-cell dependent carrier for saccharides. *Id.* at 1:52–54, 1:59–61. The '345 patent identifies SEQ ID NO:32 as the amino acid sequence of mature[1] CRM197. *Id.* at Fig. 9E.

The '345 patent further explains that the described polynucleotides comprise a 5′ signal sequence portion and a 3′ toxin portion wherein "(a) the 5′ signal sequence portion encodes a polypeptide having an amino acid sequence capable of directing transport of a heterologous protein to the bacterial periplasm and wherein the 5′ signal sequence is not derived from *C. diphtheria*;" and "(b) the 3′ toxin portion encodes a polypeptide having an amino acid sequence at least 90% identical to SEQ ID NO:32 or fragments thereof encoding at least 15 amino acids and/or at least one B or T cell epitope." *Id.* at 2:60–3:4. The '345 patent also describes various amino acid sequences of a signal peptide encoded by the 5′ signal portion. *Id.* at 3:7–19.

### *C. Challenged Claims*

Petitioner challenges claims 1, 2, 4–14, and 16–21 ("the challenged claims") of the '345 patent. Pet. 5. Claims 1 and 6 are independent. Claim 1 is representative of the challenged claims, and is reproduced below.

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[1] The '345 patent indicates that a "mature" bacterial toxin is one in which the signal peptide has been removed. Ex. 1001, 2:37–38, 16:10–13.

> 1. A polynucleotide comprising a 5′ signal sequence portion and 3′ toxin portion wherein:
>
> (a) the 3′ toxin portion encodes a mature bacterial toxin polypeptide having an amino acid sequence at least 90% identical to SEQ ID NO: 32; and
>
> (b) the 5′ signal sequence portion encodes a polypeptide having an amino acid sequence capable of directing transport of said bacterial toxin polypeptide to the bacterial periplasm when expressed in a bacterial host cell, and wherein the 5′ signal sequence is not derived from *C. diphtheria*.

Ex. 1001, 49:54–64.

*D. Prior Art and Asserted Grounds*

Petitioner challenges the patentability of claims 1, 2, 4–14, and 16–21 of the '345 patent on the following grounds:

| Claim(s) Challenged | 35 U.S.C. § | Reference(s) |
|---|---|---|
| 1, 19 | 102(b) | Collier-1[2] |
| 1, 2, 18, 19, 21 | 102(b) | Neville[3] |
| 2, 18 | 103 | Collier-1, Giannini-1[4] |
| 4–14, 16, 17, 20 | 103 | Collier-1, Huber[5] |

[2] US Patent No. 6,455,673 B1, issued Sept. 24, 2002 (Ex. 1005).
[3] US Patent App. Pub. No. US 2003/0157093 A1, published Aug. 21, 2003 (Ex. 1007).
[4] Giannini et al., *The Amino-Acid Sequence of Two Non-Toxic Mutants of Diphtheria Toxin: CRM45 and CRM197*, NUCLEIC ACIDS RESEARCH 12 (10) (1984) (Ex. 1011).
[5] Huber et al., *Use of Thioredoxin as a Reporter to Identify a Subset of Escherichia coli Signal Sequences That Promote Signal Recognition Particle-Dependent Translocation*, J. BACTERIOLOGY 197(9) (2005) (Ex. 1008).

| Claim(s) Challenged | 35 U.S.C. § | Reference(s) |
|---|---|---|
| 21 | 103 | Collier-1. state of the art as exemplified by Sambrook,[6] Horton,[7] and Heckman[8] |
| 4–14, 16, 17, 20 | 103 | Neville and Huber |

Petitioner relies on the Declaration of Joseph Oliver Falkinham, III (Ex. 1006) in support of its contentions. Patent Owner provides the Declaration of Dr. James E. Galen (Ex. 2001) with its Preliminary Response.

## II. ANALYSIS

### *A. Patent Owner's Request for Discretionary Denial of the Petition*

Patent Owner argues that institution should be denied under 35 U.S.C. § 314(a) and the Board's precedent in *General Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential). Prelim. Resp. 4–12. Institution of an *inter partes* review under 35 U.S.C. § 314(a) is discretionary. *See* 35 U.S.C. § 314(a) (stating "[t]he Director *may not* authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition" (emphasis added)); *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131, 2140

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[6] Sambrook et al., *Molecular Cloning, A Laboratory Manual,* 2nd ed. (Cold Spring Harbor Lab. Press, U.S.A., 1980) (Ex. 1029).
[7] Horton et al., *Gene Splicing by Overlap Extension*, METHODS IN EZYMOLOGY, 217, 270–79 (1993) (Ex. 1069).
[8] Heckman et al., *Gene Splicing and Mutagenesis by PCR-Driven Overlap Extension*, NATURE PROTOCOLS 2(4), 924–32 (2007) (Ex. 1070).

(2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); *SAS Inst. Inc. v. Iancu*, 138 S.Ct. 1348, 1356 (2018) ("[Section] 314(a) invests the Director with discretion on the question whether to institute review . . . ." (emphasis omitted)); *Harmonic Inv. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.").

In applying our discretion under § 314(a), the Board considers the following factors ("the *General Plastic* factors"):

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;
3. whether at the time of filing of the second petition the petitioner already received the patents owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition;
4. the length of time that elapsed between the time petitioner learned of the prior art asserted in the second petition and the filing of the second petition;
5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
6. the finite resources of the Board; and
7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

*General Plastic*, Paper 19 at 16.

In addition, the Consolidated Trial Practice Guide (Nov. 2019)[9] ("Consolidated TPG") instructs that "one petition should be sufficient to

[9] Available at: https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf

challenge the claims of a patent in most situations," although "there may be circumstances in which more than one petition may be necessary." Consolidated TPG 59. According to the Consolidated TPG, "[t]wo or more petitions filed against the same patent at or about the same time (e.g., before the first preliminary response by the patent owner) may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns." *Id.* (citing 35 U.S.C. § 316(b)).

The Consolidated TPG further instructs that,

> [t]o aid the Board in determining whether more than one petition is necessary, if a petitioner files two or more petitions challenging the same patent, then the petitioner should, in its petitions or in a separate paper filed with the petitions, identify: (1) a ranking of the petitions in the order in which it wishes the Board to consider the merits, if the Board uses its discretion to institute any of the petitions, and (2) a succinct explanation of the differences between the petitions, why the issues addressed by the differences are material, and why the Board should exercise its discretion to institute additional petitions if it identifies one petition that satisfies petitioner's burden under 35 U.S.C. § 314(a).

Consolidated TPG 59–60 (footnote omitted).

*1. Petitions Challenging the '345 Patent*

As noted above, the '345 patent was the subject of four previously-filed *inter partes* review petitions. Merck filed the 230 IPR and the 241 IPR (both challenging claims 1, 2, 4–14, and 16–21 of the '345 patent) on November 7, 2018, and the Board instituted trial in both proceedings on May 9, 2019. *Merck Sharp & Dohm Corp. v. GlaxoSmithKline Biologicals SA*, IPR2019-00230 and IPR2019-00241, Papers 1 and 8. On June 6, 2019, the Board granted the parties' joint motions to terminate the 230 IPR and the 241 IPR. *Id.* at Paper 14.

Petitioner filed the 1027 IPR and the 1028 IPR (both challenging claims 1, 2, 4, 6, 8, 12–14, 17–19, and 21 of the '345 patent) on May 6, 2019. *Pfenex Inc. v. GlaxoSmithKline Biologicals SA*, IPR2019-01027 and IPR2019-01028, Paper 2. On November 13, 2019, the Board instituted a trial in the 1028 IPR, and denied institution in the 1027 IPR. *Id.* at Paper 12.

Petitioner filed the instant Petition, which is substantively identical to Merck's petition in the 230 IPR, on August 9, 2019. Pet. 63–65. Along with the Petition, Petitioner filed its Explanation of Multiple Petitions Challenging Patent No. 9,422,345 and Ranking of Petitions ("Ranking Paper"). Paper 2.

*2. Analysis of the General Plastic Factors*

In determining whether to exercise our discretion to deny institution under § 314(a), we consider each of the *General Plastic* factors below.

*a. Factor 1: Previously Filed Petitions*

We first address "whether the same petitioner previously filed a petition directed to the same claims for the same patent." *General Plastic*, Paper 19 at 16. Patent Owner states that this Petition "seeks review of claims 1, 2, 4–14, and 16–21 of the '345 patent," which "substantially" overlaps the claims Petitioner challenged in the 1027 and 1028 IPRs. Prelim. Resp. 5. Patent Owner notes that "the only claims challenged in" the Petition that are "not challenged in Petitioner's two previous petitions are dependent claims 5, 7, 9–11, 16, and 20, all of which depend from already challenged independent claims." *Id.*

In its Ranking Paper, Petitioner does not provide any explanation or reasoning as to why it now needs to challenge claims that it did not include in the 1027 and 1028 IPRs. *See* Paper 2. There is no indication in the record

that Patent Owner asserted the additional claims against Petitioner in related litigation after the filing of the 1027 and 1028 IPRs. In light of the fact that the 1028 IPR proceeding addresses all of the independent claims from which the additionally-challenged claims in this Petition depend, and in the absence of a reason why it is necessary for Petitioner to challenge additional claims now, we find that the first *General Plastic* factor weighs in favor of denying institution.

*b. Factor 2: Knowledge of the Prior Art*

We next evaluate "whether at the time of filing of the first petition, the petitioner knew of the prior art asserted in the second petition or should have known of it." *General Plastic,* Paper 19 at 16. Patent Owner argues that, because this Petition is substantively the same as the petition in the 230 IPR, "Petitioner would have been well aware of the prior art references asserted in the instant petition [at] the latest by the time Merck's '230 petition was filed and became publicly available." Prelim. Resp. 6. Patent Owner further argues that "Petitioner also used multiple references submitted and discussed in the '230 IPR as either background or asserted prior art references" in the 1027 and 1028 IPR petitions, "demonstrating its awareness of ***all*** the materials presented in" the Petition "when it filed its two earlier petitions." *Id.*

In its Ranking Paper, Petitioner states that it "carefully considered" the timing when filing the 1027 and 1028 IPR petitions, so that those petitions were filed "before the institution decisions were issued in" the 230 and 241 IPRs. Paper 2, 5. Accordingly, we find that Petitioner knew of the prior art asserted here at the time it filed the 1027 and 1027 IPR petitions,

and determine that *General Plastic* factor 2 weighs in favor of invoking our discretion under § 314(a).

*c. Factor 3: Availability of Information from Earlier Proceedings*

Next, we consider "whether at the time of filing of the second petition, the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition." *General Plastic,* Paper 19 at 16. This factor is "directed to Petitioner's potential benefit from receiving and having the opportunity to study Patent Owner's Preliminary Response . . . prior to its filing of follow-on petitions." *Id.* at 17.

The instant Petition, which is substantively identical to Merck's petition in the 230 IPR, was filed on August 9, 2019. Pet. 63–65. Thus, Petitioner did not have Patent Owner's preliminary responses in the 1027 and 1028 IPRs, which were filed on August 16, 2019. *Pfenex Inc. v. GlaxoSmithKline Biologicals SA*, IPR2019-01027 and IPR2019-01028, Paper 8. The Board's institution decision in the 230 IPR, however, was filed on May 9, 2019. *Merck Sharp & Dohm Corp. v. GlaxoSmithKline Biologicals SA*, IPR2019-00230, Paper 1. Therefore, it was available at the time Petitioner filed the present Petition. Because the Petition is substantively the same as that filed in the 230 IPR, we agree with Patent Owner that "Petitioner benefitted from the roadmap provided in the Board's Decision on Institution" in the 230 IPR. Prelim. Resp. 8. Accordingly, we determine that this factor weighs in favor of exercising our discretion to deny institution.

*d. Factors 4 and 5: Delay in Filing Petition*

We next examine "the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition" (factor 4), and "whether the petitioner provides an adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent" (factor 5). *General Plastic*, Paper 19 at 16. With respect to factor 4, Patent Owner argues that after the 230 IPR petition was filed, "Petitioner waited for six months to file two more petitions against the same patent, and further waited another three months to file the instant petition." Prelim. Resp. 6. With respect to factor 5, Patent Owner argues that Petitioner "does not explain why it waited six months to file more petitions against the '345 patent after Merck had already filed two petitions against the same patent," and does not "provide any explanation or justification for its further delay to file the instant petition months after it filed the two earlier petitions and after the Merck IPRs were terminated, and only days before Patent Owner's Preliminary Responses were due in the first two proceedings." *Id.* at 10.

In its Ranking Paper, Petitioner states that the petitions in the 1027 and 1028 IPRs "rely on different prior art to demonstrate the unpatentability of the '345 claims," and that the Petition here "relies on the same prior art and same challenges presented by Merck, which the Board has already determined present a reasonable likelihood of success on the merits, but which have not been adjudicated on the merits." Paper 2, 4. Petitioner contends that it "should not be penalized for circumstances and events beyond its control," because it "could not have foreseen that Merck and [Patent Owner] would settle and terminate the '230 IPR." *Id.* at 5.

According to Petitioner, because it "has essentially copied both the Merck '230 Petition and the expert declaration supporting that petition, there is no prejudice to [Patent Owner], as [Petitioner] used neither [Patent Owner's] Preliminary Response or the Institution Decision in drafting the instant Petition," and, thus, Patent Owner "is in essentially the same position as it was to the challenges presented in the '230 petition as it was when it settled with Merck." *Id.* at 5.

As discussed above, we find that Petitioner knew about the prior art asserted in this Petition when it filed the petitions in the 1027 and 1028 IPRs. Petitioner's only excuse for its delay in filing this Petition is that Patent Owner "could not have foreseen" that the 230 IPR would settle and terminate. Paper 2, 5. Settlement and termination of an *inter partes* review proceeding, however, is neither unusual nor rare. Moreover, if Petitioner was interested in pursuing the same challenge as that presented in the 230 IPR, it could have requested joinder under 37 C.F.R. § 42.122(b), which provides that "[j]oinder may be requested by a patent owner or petitioner" and "must be filed, as a motion under § 42.22, no later than one month after the institution date of any *inter partes* review for which joinder is requested." That the 230 IPR settled after institution is not an adequate excuse for delay.

We are also not persuaded that the fact the Board previously determined that the challenges presented in the 230 IPR presented a reasonable likelihood of success justifies the additional burden of a second petition directed to the '345 patent, when a trial has already been instituted in the 1028 IPR. *See* Paper 2, 4. This is particularly true here, where Petitioner ranked the 1028 IPR petition and the 1027 IPR petition ahead of

the current Petition, indicating Petitioner's preference that we consider the merits of this Petition last. *Id.* at 3.

Accordingly, we determine that *General Plastic* factors 4 and 5 weigh in favor of exercising our discretion to deny institution.

*e. Factors 6 and 7: Board Resources and Statutory Deadlines*

Finally, we consider "the finite resources of the Board" (factor 6), and "the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review" (factor 7). *General Plastic*, Paper 19 at 16. These factors are efficiency considerations. *Id.* at 16–17, 21 ("multiple, staggered petition filings, . . . are an inefficient use of the *inter partes* review process and the Board's resources"); *see also* Consolidated TPG 55–56 (noting that the Director's discretion under § 314(a) is informed by 35 U.S.C. § 316(b), which requires "the efficient administration of the Office, and the ability of the Office to timely complete proceedings instituted under this chapter").

In general, having multiple petitions challenging the same patent, especially when not filed at or around the same time, as in this case, is inefficient and tends to waste resources. Here, the current Petition was filed six months after the filing of the petitions in the 1027 and 1028 IPRs. Patent Owner's Response in the 1028 IPR is currently due on February 12, 2020. IPR2019-01028, Paper 16. Coordination with the present case, even if instituted, would be impractical. Moreover, only instituting on a single petition seeking *inter partes* review of the '345 patent is consistent with the Consolidated TPG's discussion of multiple parallel petitions challenging the same patent. *See* Consolidated TPG 59–61. Accordingly, we determine that

*General Plastic* factors 6 and 7 weigh in favor of invoking our discretion under § 314(a).

*f. Balancing the General Plastic Factors*

Taking into account the facts and circumstances of this case, we find that all of the *General Plastic* factors weigh in favor of denying institution.

## III. CONCLUSION

In light of the circumstances of the present case, and for the reasons set forth above, we exercise discretion under 35 U.S.C. § 314(a) and decline to institute an *inter partes* review of the '345 patent.[10]

## IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that the Petition is *denied* and no *inter partes* review is instituted.

[10] Consequently, we do not reach the merits of Petitioner's challenges, nor do we reach the issue of whether the Petition should be denied under 35 U.S.C. § 325(d).

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