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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SANOFI-AVENTIS U.S. LLC, GENZYME CORP., and REGENERON PHARMACEUTICALS, INC.,
Petitioner,

v.

IMMUNEX CORPORATION,
Patent Owner.

Case IPR2017-01129
Patent 8,679,487 B2

Before JAMES T. MOORE, GRACE KARAFFA OBERMANN, and TINA E. HULSE, *Administrative Patent Judges*.

HULSE, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Sanofi-Aventis U.S. LLC, Genzyme Corp., and Regeneron Pharmaceuticals, Inc. (collectively, "Petitioner") filed a Petition requesting an *inter partes* review of claims 1–17 of U.S. Patent No. 8,679,487 B2 (Ex. 1001, "the '487 patent"). Paper 1 ("Pet."). Immunex Corporation ("Patent Owner") filed a Preliminary Response to the Petition. Paper 14 ("Prelim. Resp.").

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted "unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). Upon considering the Petition and Preliminary Response, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing the unpatentability of claims 1–17 of the '487 patent. Accordingly, we decline to institute an *inter partes* review of those claims.

A. Related Proceedings

Patent Owner has asserted the '487 patent against Petitioner in a pending lawsuit styled *Immunex Corp. v. Sanofi*, No. 2:17-cv-02613 (C.D. Cal.). Paper 18, 2; Paper 17, 3.

Four months after filing the instant Petition, Petitioner filed petitions for *inter partes* review of the '487 patent on different grounds in IPR2017-01879 and IPR2017-01884. Paper 18, 2; Paper 17, 2.

Patent Owner also identifies certain applications and patents that "claim or may claim the benefit of the priority of the filing date of [the '487 patent]." Paper 17, 1–2.

B. The ’487 Patent

The ’487 patent relates to compositions and methods for treating certain conditions induced by interleukin-4 (IL-4) by administering an IL-4 antagonist to a patient with such a condition. Ex. 1001, 3:9–14. IL-4 has a broad spectrum of biological activities, including growth of co-stimulation of T cells, mast cells, granulocytes, magakaryocytes, and erythrocytes. *Id.* at 1:29–36. IL-4 binds to specific cell surface receptors called interleukin-4 receptors (IL-4R). *Id.* at 1:49–51. Binding of IL-4 to IL-4R results in transduction of a biological signal to cells such as various immune effector cells. *Id.* IL-4 has been implicated in a number of disorders, including allergy and asthma. *Id.* at 2:1–2, 4:11–31.

Different IL-4 antagonists may act at different sites or by different mechanisms of action. *Id.* at 10:47–48. According to the ’487 patent, examples include antagonists that interfere with binding of IL-4 to cell surface receptors or that inhibit signal transduction. *Id.* at 10:48–50. The site of action may be intracellular, on a cell surface, or extracellular. *Id.* at 10:50–53. Antagonists may bind to either IL-4 or to the receptor. *Id.* at 10:53–54. Examples of IL-4 antagonists include IL-4 receptors, antibodies that bind to IL-4 or IL-4R, other IL-4 binding molecules, and IL-4 muteins. *Id.* at 10:36–38.

Blocking antibodies that interfere with the binding of IL-4 to IL-4R may be raised against either IL-4 or IL-4R. *Id.* at 18:40–43. The antibodies can be screened in conventional assays for their ability to interfere with binding of IL-4 to IL-4R. *Id.* at 18:40–45. Because it has been found that IL-4R is a component of certain multi-subunit IL-13 receptor complexes, some antibodies raised against IL-4R may interfere with the binding of IL-13 to those complexes. *Id.* at 18:50–57. Those antibodies may inhibit both

IL-4 induced biological activity and IL-13 induced activity and therefore may be used in treating conditions induced by either or both cytokines. *Id.* at 18:58–62. Such conditions include IgE-mediated conditions, asthma, allergic conditions, allergic rhinitis, and dermatitis. *Id.* at 18:62–65.

The '487 patent identifies examples of IL-4R human monoclonal antibodies (MAbs) produced by immunizing transgenic mice. The examples are designated MAbs 6-2, 12B5, 63, 1B7, 5A1, and 27A1. *Id.* at 21:6–11. MAbs 12B5, 63, and 1B7 are preferred fully human antibodies capable of inhibiting activity of both IL-4 and IL-13. *Id.* at 21:11–15.

The '487 patent presents the encoded amino acid sequence of the variable region of the light chain MAb 12B5 in SEQ ID NO:10, and of the variable region of the heavy chain in SEQ ID NO:12. *Id.* at 22:36–41.

C. Illustrative Claim

Petitioner challenges claims 1–17 of the '487 patent, of which claim 1 is the only independent claim. Claim 1 is illustrative and is reproduced below:

> 1. An isolated human antibody that competes with a reference antibody for binding to human IL-4 interleukin-4 (IL-4) receptor, wherein the light chain of said reference antibody comprises the amino acid sequence of SEQ ID NO:10 and the heavy chain of said reference antibody comprises the amino acid sequence of SEQ ID NO:12.

Ex. 1001, 77:26–31.

D. The Asserted Ground of Unpatentability

Petitioner contends that claims 1–17 of the '487 patent are unpatentable as anticipated by Stevens.[1] Petitioner also relies on the

[1] Stevens et al., US 2008/0160035 A1, published July 3, 2008 ("Stevens," Ex. 1006).

Declarations of Gerard Zurawski, Ph.D. (Ex. 1004) and William H. Robinson, Ph.D., M.D. (Ex. 1012).

II. ANALYSIS

A. Person of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art would have had at least a Ph.D. or an M.D. with research experience in immunology, biochemistry, cell biology, molecular biology, or a related field or at least 2–3 years of professional experience in one or more of those fields. Pet. 18–19. According to Petitioner, such a person would have had an understanding of "how one generates antibodies to a chosen antigen from animals (*e.g.*, mice), and how one isolates human antibodies by generating human antibodies directly from transgenic animals or transforming animal antibodies into human antibodies." *Id.* at 19 (citing Ex. 1004 ¶ 21, Ex. 1012 ¶ 26). Patent Owner does not address the level of ordinary skill in the art in its Preliminary Response.

On this record, we adopt Petitioner's uncontested definition of the level of ordinary skill in the art. We further note that the prior art itself demonstrates the level of skill in the art at the time of the invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that specific findings regarding ordinary skill level are not required "where the prior art itself reflects an appropriate level and a need for testimony is not shown") (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

B. Claim Construction

In an *inter partes* review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 100(b);

Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2142 (2016) (affirming applicability of broadest reasonable construction standard to *inter partes* review proceedings). Under that standard, and absent any special definitions, we generally give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

We determine that it is unnecessary to expressly construe any claim terms for purposes of this Decision. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) ("[C]laim terms need only be construed 'to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Anticipation by Stevens

Petitioner asserts that claims 1–17 of the '487 patent are anticipated by Stevens. Pet. 26–67. Patent Owner opposes Petitioner's assertion. Prelim. Resp. 9–57. On this record, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing the challenged claims are anticipated by Stevens.

Stevens is a U.S. patent application owned by Petitioner entitled, "High Affinity Human Antibodies to Human IL-4 Receptor." Ex. 1006, (54). Published on July 3, 2008, Stevens relates to an isolated human antibody that binds to human interleukin-4 receptor alpha (hIL-4Rα). *Id.*, (43), Abstract.

A threshold issue with respect to Petitioner's anticipation challenge is whether Stevens constitutes prior art. Stevens is not prior art under pre-AIA 35 U.S.C. § 102 if the challenged claims of the '487 patent are entitled to the benefit of priority of the filing date of a previous application that was filed before Stevens's July 3, 2008, publication date. Whether the challenged claims of the '487 patent are entitled to the priority date of an earlier-filed application is governed by pre-AIA 35 U.S.C. § 120, which states:

> An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States . . . which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application[.]

Having considered the arguments and evidence, we determine Petitioner has not shown a reasonable likelihood of prevailing on its assertion that the '487 patent claims are not entitled to the priority date of an earlier-filed application that predates Stevens.

1. The Examiner's Prior Determination of Priority During Prosecution of the '487 Patent

The '487 patent arose from the fifth patent application ("the '487 patent application") in a series of continuation and divisional applications. Specifically, the '487 patent issued from a continuation application in the following series of applications:

Application No.	**Application Type**	**Filing Date**
12/291,702	Continuation	Nov. 13, 2008
11/588,696	Division	Oct. 27, 2006
10/324,493	Continuation	Dec. 19, 2002
09/847,816	Original	May 1, 2001

Ex. 1001, (60).

During prosecution of the ’487 patent application, the examiner expressly considered the earlier-filed applications and determined the pending ’487 patent application claims were supported by the disclosure of the earliest-filed application, U.S. Application No. 09/847,816 (“the ’816 application”). As such, the examiner accorded those claims an effective filing date of May 1, 2001, for purposes of prior art. Ex. 1002, 116. Specifically, the examiner stated:

> Based on the information given by Applicants and an inspection of the patent applications, the Examiner has concluded that the subject matter defined in claims 1-16 and 34-35 is supported by the disclosure in U.S. Application Serial No. 09/847,816 filed on 01 May 2001, because, this application discloses antibodies that bind to IL-4 receptor, wherein said antibodies comprise the light chain of SEQ ID NO:10 and heavy chain of SEQ ID NO:12. Therefore, claims 1-16 and 34-35 are afforded an effective filing date of 05/01/2001 for purposes of art.

Id.

As noted by Patent Owner, the then-pending claims considered by the examiner are nearly identical to the issued claims of the ’487 patent. *Compare* Ex. 1001, claims 1–17 *with* Ex. 1002, 125–28 (claims 1–10, 12–16, 34, 35); *see also* Prelim. Resp. 11–13 (citing Ex. 1001, claim 1; Ex. 1002, 125). Patent Owner provides a comparison of pending claim 1 as of February 3, 2011, and issued claim 1 of the ’487 patent, reproduced below:

Pending claim 1 on Feb. 3, 2011	Issued Claim 1
1. An isolated antibody that competes with a reference antibody for binding to human IL-4 receptor,	1. An isolated human antibody that competes with a reference antibody for binding to human IL-4 interleukin-4 (IL-4) receptor,
wherein the light chain of said reference antibody comprises the amino acid sequence of SEQ ID NO: 10	wherein the light chain of said reference antibody comprises the amino acid sequence of SEQ ID NO: 10
and the heavy chain of said reference antibody comprises the amino acid sequence of SEQ ID NO: 12	and the heavy chain of said reference antibody comprises the amino acid sequence of SEQ ID NO:12.

Prelim. Resp. 11 (citing Ex. 1001, claim 1; Ex. 1002, 125 (underline indicating text added during prosecution)). As shown in the comparison above, the only two differences between the original claims and the issued claims are the addition of the terms "human" and "interleukin-4 (IL-4)" to the issued claims.

Petitioner relies on *In re NTP*, 654 F.3d 1268 (Fed. Cir. 2011), for the proposition that "[a] patent's claims are not entitled to an earlier priority date merely because the patentee claims priority. Rather, for a patent's claims to be entitled to an earlier priority date, the patentee must demonstrate that the claims meet the requirements of 35 U.S.C. § 120." Pet. 27 (citing *In re NTP*, 654 F.3d at 1276). But in *NTP*, there was no evidence that the examiner "actually considered" the priority issue. 654 F.3d at 1279. Similarly, in *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299 (Fed. Cir. 2008), the court noted that "the PTO did not, at any point, make any determination with regard to the priority date of the various claims of the asserted patents." *Id.* at 1304. In both *NTP* and *PowerOasis*, the Federal Circuit placed the burden

on the patent owner "to come forward with evidence to prove entitlement to claim priority to an earlier filing date." *PowerOasis*, 522 F.3d at 1305–06.

The *PowerOasis* court distinguished its facts with that of *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 772 F.2d 1570 (Fed. Cir. 1985), where the PTO and the Board of Patent Appeals and Interferences had previously made a priority determination. *PowerOasis*, 522 F.3d at 1303–04 ("In *Ralston*, both the U.S. Patent and Trademark Office (PTO) and the Board of Patent Appeals and Interferences (Board) made a priority determination. *Ralston Purina Co. v. Far–Mar–Co., Inc.*, 586 F.Supp. 1176, 1189, 1212 (D.Kan.1984). . . . The district court in *Ralston* properly accorded deference to the Board's decision on priority. *See id.* at 1213.").

Accordingly, the Federal Circuit held the party asserting invalidity properly bore the burden of proof as to whether the claims in a patent application were not entitled to the priority date of a parent application. *Id.* at 1304.

Here, the Office has expressly considered the priority of the challenged claims during prosecution and determined the earliest effective filing date to which they are entitled is the filing date of the '816 application. The Petition, however, is silent as to the Office's prior determination and the effect of that determination on Petitioner's challenge. We, on the other hand, have taken note of the Office's prior determination and, for the reasons that follow, find the Petition insufficient to persuade us to institute trial to reconsider that determination.

2. Petitioner's Priority Challenge[2]

Petitioner argues that the challenged claims are not entitled to an earlier effective filing date because the claims are not supported or enabled by the disclosure of the '816 application. Pet. 31–56. Petitioner asserts that the challenged claims cover a "broad genus of isolated human antibodies defined solely by their function of competing with a reference antibody for binding to hIL-4R." *Id.* at 31. Relying heavily on *AbbVie Deutschland GmbH & Co. v. Janssen Biotech, Inc.*, 759 F.3d 1285 (Fed. Cir. 2014), Petitioner argues the challenged claims are broad, and the '816 application does not support the challenged claims because it "fails to describe a single isolated human antibody species that falls within that genus, let alone common structural features that would allow a POSITA to visualize or recognize all covered species." Pet. 31; *see also id.* at 34–43. Specifically, Petitioner argues that the '816 application fails to describe a single antibody that competes with a "reference antibody" or MAb 12B5, as required by the claims. *Id.* at 35.

Patent Owner responds by first noting Petitioner's failure to construe "antibody" is inconsistent with Petitioner's position in district court. Prelim. Resp. 15–22. Patent Owner informs us that Sanofi has represented to two different district courts that the term "antibody" in the challenged claims "must be construed in accordance with 35 U.S.C. § 112 ¶ 6" and that,

[2] Patent Owner argues that because each application in the chain of applications shares the same specification as the '487 patent, Petitioner's priority challenge is an improper patentability challenge based on 35 U.S.C. § 112. Prelim. Resp. 8–9. Because, as discussed further below, we determine Petitioner has not shown a reasonable likelihood of prevailing on its challenge, we need not reach this issue for purposes of our Decision.

"[p]roperly construed, none of the claims of the '487 Patent cover matter beyond the structures specifically disclosed in the specification, *i.e.*, the sequences of [M]Abs 6-2, 12B5, 27A1, 5A1, 63, or 1B7, the only structures conceivably capable of performing the 'compet[ing]' function, or their equivalents." *Id.* at 17; Ex. 2001 ¶¶ 30–31; Ex. 2002 ¶¶ 66–67 (counterclaims).

We are troubled by Petitioner's failure to inform us of its contention before the district court that the claims should be construed under 35 U.S.C. § 112 ¶ 6. As the Federal Circuit has held, "no distinction is made in [§ 112] paragraph six between prosecution in the PTO and enforcement in the courts . . . . [P]aragraph six applies . . . whether as part of a patentability determination in the PTO or as part of a validity or infringement determination in a court." *In re Donaldson Co.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994) (en banc); *see also Facebook, Inc. v. Sound View Innovations, LLC*, Cases IPR2017-00998 and IPR2017-01002, slip op. 14–18 (PTAB Sept. 5, 2017) (Paper 13) (finding "troubling" Petitioner's failure to inform the Board that it was arguing 35 U.S.C. §112 ¶ 6 applies to challenged claim in district court).

That the broadest reasonable interpretation applies to construing claims in *inter partes* review proceedings does not justify taking a different position with respect to § 112 ¶ 6 before the district court. Thus, Petitioner's failure to expressly construe the term "antibody" calls into question the Petition's compliance with 37 C.F.R. § 42.104(b)(3), which requires that the Petition identify "[h]ow the challenged claim is to be construed," particularly with respect to § 112 ¶ 6.

Nevertheless, even assuming the scope of the claims is broad, as Petitioner contends, we are not persuaded Petitioner has met its burden to

show a reasonable likelihood of prevailing on its challenge. The '816 application expressly states that "[p]articular monoclonal antibodies of the invention are selected from the group consisting of . . . a MAb that competes with 12B5 for binding to a cell that expresses human IL-4R." Ex. 1008, 29:16–18.[3] According to the '816 application, 12B5 is a fully human IgG1 antibody. *Id.* at 53:31. The '816 application states that "[a]ntibodies of other subclasses, such as IgG4 or IgM monoclonal antibodies, may be derived from 12B5. Techniques for altering (switching) the subclass/isotype of an antibody are known." *Id.* at 53:31–33.

Moreover, as Patent Owner notes, the '816 application incorporates by reference various U.S. patents for examples of how to prepare various types of monoclonal antibodies and examples of competition assays. Prelim. Resp. 28–29, 32–33; *see, e.g.*, Ex. 1008, 27:3–4 ("Examples of techniques for production and use of such transgenic animals are described in U.S. Patents 5,814,318, 5,569,825, and 5,545,806, which are incorporated by reference herein."), 36:3–7 ("Examples of procedures for preparing antibodies directed against human IL-4 (including monoclonal antibodies), assays by which blocking antibodies are identified, and techniques for generating humanized or genetically engineered derivatives of anti-IL-4 antibodies, are described in U.S. Patents 5,041,381, 5,863,537, 5,928,904, and 5,676,940, which are hereby incorporated by reference. Further examples of antibodies that may be employed as IL-4 antagonists are described in WO 91/09059, also incorporated by reference herein.").

[3] Citations to Ex. 1008 are to the page numbers provided pursuant to 37 C.F.R. § 42.63(d)(2)(i).

Although Petitioner asserts the ’816 application fails to describe or enable the challenged claims, Petitioner fails to address the references expressly incorporated by reference in the ’816 application specification. Moreover, the list of references considered by Dr. Robinson does not include the patents incorporated by reference in the ’816 application, suggesting he did not consider the references, either. Ex. 1012 ¶ 28.

“Incorporation by reference provides a method for integrating material from various documents into a host document . . . by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein.” *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000). Thus, by failing to consider the patents incorporated by reference in the ’816 application, Petitioner and Dr. Robinson have failed to consider the full scope of the disclosure for purposes of written description and enablement. We, therefore, give Dr. Robinson’s opinion regarding priority little weight.

Having considered the arguments and evidence, we determine the Petition is deficient in view of: (1) the failure to consider the Office’s prior determination of priority; (2) the ambiguity of Petitioner’s position regarding whether 35 U.S.C. § 112 ¶ 6 applies to the construction of “antibody,” and (3) the failure of Petitioner’s expert to consider the full scope of the ’816 application disclosure in rendering his opinion on written description and enablement. Thus, under the circumstances of this case and without reaching whether the disclosure of the ’816 application satisfies § 112 ¶ 1, we are not persuaded that Petitioner has shown sufficiently that the challenged claims are not entitled to the benefit of the filing date of the ’816 application. As a result, we are not persuaded that Petitioner has shown

sufficiently that Stevens constitutes prior art or that it is reasonably likely to prevail at trial on its challenge based on that reference.

III. CONCLUSION

For the foregoing reasons, we conclude that Petitioner has not established a reasonable likelihood of prevailing on its assertion that claims 1–17 of the ’487 patent are unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied* as to all challenged claims of the ’487 patent, and no trial is instituted.

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