United States Court of Appeals for the Federal Circuit

IMMUNEX CORPORATION,
Appellant

v.

SANOFI-AVENTIS U.S. LLC, GENZYME CORPORATION, REGENERON PHARMACEUTICALS, INC.,
Cross-Appellants

ANDREI IANCU, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenor

2019-1749, 2019-1777

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2017-01879, IPR2017-01884.

Decided: October 13, 2020

ELDORA ELLISON, Sterne Kessler Goldstein & Fox, PLLC, Washington, DC, argued for appellant. Also represented by DAVID HOLMAN, DAVID WILLIAM ROADCAP, JON WRIGHT.

LAUREN FORNAROTTO, McKool Smith, P.C., New York, NY, argued for cross-appellants. Also represented by JOHN FRANKLIN GARVISH, II, MATTHEW CAMERON, GEOFFREY SMITH, JOEL LANCE THOLLANDER, Austin, TX; ERIC SORENSEN HANSEN, MIKE MCKOOL, Dallas, TX; NOAH SAMUEL FRANK, GEORGE W. HICKS, JR., NATHAN S. MAMMEN, Kirkland & Ellis LLP, Washington, DC.

FRANCES LYNCH, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for intervenor. Also represented by SARAH E. CRAVEN, THOMAS W. KRAUSE, FARHEENA YASMEEN RASHEED.

Before PROST, *Chief Judge*, REYNA and TARANTO, *Circuit Judges*.

PROST, *Chief Judge*.

This is a consolidated appeal from two Patent Trial and Appeal Board ("Board") decisions in inter partes reviews ("IPRs") of U.S. Patent No. 8,679,487 ("the '487 patent"), owned by Immunex Corp. ("Immunex"). Sanofi-Aventis U.S. LLC, Genzyme Corp., and Regeneron Pharmaceuticals, Inc. (collectively, "Sanofi") challenged the '487 patent, which covers isolated human antibodies that bind the human interleukin-4 receptor. The Board invalidated all challenged claims in one of the IPRs, No. IPR2017-01884. Immunex appeals, contesting the construction of the claim term "human antibodies." In the other IPR, No. IPR2017-01879, involving a subset of the same claims, the Board did not invalidate the patents for reasons of inventorship. Sanofi appeals, contesting the Board's inventorship determination. We consolidated the cases in the nature of an appeal and a cross-appeal. For the reasons below, we agree with the Board's claim construction in No. IPR2017-01884 (here, "the appeal"). Accordingly, we affirm that invalidity decision. Because this leaves valid no claims at issue in the

second IPR, we dismiss Sanofi's inventorship appeal from No. IPR2017-01879 (here, the "cross-appeal").

BACKGROUND

I

The '487 patent is directed to antibodies that bind to the human interleukin-4 ("IL-4") receptor, the resulting inhibition of which is significant for treating various inflammatory disorders, such as arthritis, dermatitis, and asthma. *See* '487 patent col. 3 ll. 15–31; J.A. 3–4.

Claim 1 reads:

> 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.

'487 patent (emphasis added). This appeal concerns what "human antibody" means in this patent.

First, the relevant science. Antibodies are proteins. Like all proteins, they are composed of numerous individual amino acids chained together in a particular sequence. Antibodies are roughly Y-shaped, made of four chains—two "heavy" and two "light." Each chain can be further divided into a "variable region" and a "constant region." And each variable region contains three relatively small "complementarity-determining regions" (CDRs) situated at the tips of the Y. The remainder of the variable regions are the "framework regions."

Particular antibody regions have particular biological implications. For instance, it is primarily the CDRs that give an antibody its ability to bind selectively to specific targets (i.e., antigens), despite making up just a sliver of its structure. *See* J.A. 1501, 7042–43. To that end, an

antibody's exact amino acid sequence determines what the antibody binds to, which affects the antibody's therapeutic usefulness. The amino acid sequence of an antibody also determines whether the human immune system recognizes and rejects it as "non-human." Amino acid sequences that are human in origin—that is, sequences "consistent with the amino acid sequences of antibodies produced naturally by the human immune system," *see* Appellant's Br. 4—can avoid triggering immune responses.

Early efforts at therapeutic antibody development started with mice. For example, researchers could inject a mouse with an antigen, the mouse would generate antibodies to the antigen, and those antibodies would be harvested. In that case, the entire amino acid sequence was murine (i.e., from mice). These antibodies, disappointingly, tended to plague patients with "undesirable and harmful immune reactions." *See* Appellant's Br. 7–8. Too much of each antibody was "mouse" in origin, to the consternation of the human immune system.

Through various techniques, the proportion of an antibody that is recognized as "mouse" can be decreased. In "chimeric" antibodies, for instance, the constant regions tend to be human in origin, and the variable regions, including the CDRs, tend to be nonhuman—making the antibodies' amino acid sequences *mostly* human in origin. Appellant's Br. 8–9. In "humanized" antibodies, *only* the CDRs are nonhuman—the antibodies' amino acid sequences, including the portions responsible for immune reaction, are *almost entirely* human in origin.[1] Further, fully human antibodies can be made in which even the CDRs are human in origin.

---

[1] One of Immunex's examples describes the amino acid sequences of a "chimeric" antibody as 66% human and a "humanized" antibody as 97% human. Appellant's Br. 8.

Here, some of the disclosed embodiments are "partially human" and some are "completely human." E.g., '487 patent col. 19 ll. 38–44, col. 21 ll. 6–14. Among the former, the specification's embodiments specifically include humanized and chimeric antibodies. *Id.* at col. 18 ll. 36–37, col. 19 ll. 21–37.

The claim construction dispute is this: in the context of this patent, must a "human antibody" be *entirely* human? Or may it also be "partially human," including "humanized"?

II

Amid infringement litigation, Sanofi filed three IPR petitions challenging claims 1–17 of the '487 patent. Two were instituted.

In one final written decision, the Board concluded that claims 1–17 were unpatentable as obvious over two references, Hart and Schering-Plough. *Sanofi-Aventis v. Immunex*, No. IPR2017-01884, Paper 96, 2019 WL 643041 (P.T.A.B. Feb. 14, 2019) ("*Final Written Decision*").

Hart describes a commercially available murine antibody that purportedly meets all the limitations of claim 1—except that it is fully murine, not human at all. *Final Written Decision*, 2019 WL 643041, at *7–8. But Schering-Plough teaches humanizing such murine antibodies by "grafting" their CDRs onto an otherwise fully human antibody. *Id.* Sanofi therefore argued that the claims were obvious in light of the humanized antibody that would result from this combination. Further, Sanofi argued in a second obviousness ground that the gap between "humanized" and "fully human" could be closed using the teachings of a third reference, Hoogenboom. J.A. 1095. The Board reached only the first ground, finding that the "humanized" antibody met its construction of "human antibody." *Final Written Decision*, 2019 WL 643041, at *9, *12. On appeal,

Immunex insists only that the Board erred in this construction.

In the second final written decision, the Board concluded that Sanofi had not shown by a preponderance of the evidence that claims 1–14, 16, and 17 were anticipated by one of Immunex's own publications. *Sanofi-Aventis v. Immunex*, No. IPR2017-01879, Paper 88 (P.T.A.B. Feb. 14, 2019). Sanofi appealed, contending that the Board erred in determining that the disclosure was not § 102(e) prior art "by another." We consolidated Immunex's appeal and Sanofi's appeal in the nature of an appeal and a cross-appeal, respectively. *See* Order (July 10, 2019), ECF No. 21.

We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

I

First, we consider the applicable claim construction standard in light of a post-briefing terminal disclaimer.

After appellate briefing was complete, Immunex filed with the Patent and Trademark Office ("PTO") a terminal disclaimer of its patent. The PTO promptly accepted it, and Immunex's patent therefore expired on May 26, 2020, just over two months before oral argument.

Immunex then filed a citation of supplemental authority under Federal Rule of Appellate Procedure 28(j), apprising us of (but not explaining the reason for) its terminal disclaimer and asking us to change the applicable claim construction standard. *See* Citation of Suppl. Authority (Apr. 10, 2020), ECF No. 66. Sanofi and the PTO insist that Immunex has waived the *Phillips* issue. We need not reach waiver, determining for the following reasons that the BRI standard applies.

Today, in all newly filed IPRs, the Board applies the *Phillips* district-court claim construction standard. 37 C.F.R § 42.100(b) (2020); *Phillips v. AWH Corp.*,

415 F.3d 1303 (Fed. Cir. 2005) (en banc).[2] But when Sanofi filed its IPRs, the Board applied this standard only to expired patents. To unexpired patents, it applied the broadest reasonable interpretation ("BRI") standard. 37 C.F.R. § 42.100(b) (2016); *In re CSB–Sys. Int'l, Inc.*, 832 F.3d 1135, 1341–42 (Fed. Cir. 2016). Immunex, with its letter, now urges us to apply *Phillips*, citing *Wasica Finance GmbH v. Continental Automotive Systems, Inc.*, 853 F.3d 1272, 1279 (Fed. Cir. 2017), and *In re CSB–System International*, 832 F.3d 1335. But unlike here, the patents in *Wasica* and *CSB* had expired before the Board's decision.

We have also applied the *Phillips* standard when a patent expired on appeal. *See* PTO Resp. Letter (Apr. 30, 2020), ECF No. 72 (citing *Apple Inc. v. Andrea Elecs. Corp.*, 949 F.3d 697, 707 (Fed. Cir. 2020)). But we do not read *Andrea Electronics* to mean that whenever a patent expires on appeal, at any time and for any reason, *Phillips* applies. In *Andrea Electronics*, the patent's term expired as expected. It was not cut short by a litigant's terminal disclaimer. And, importantly, the expected expiration happened before appellate briefing began. The parties knew this at the outset, as the expiration date was part of the record before the Board, and were able to fully brief the consequences. Not so here, where the patentee shortened the term abruptly after the parties had already fully briefed claim construction under the BRI standard.[3]

---

[2] *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (codified at 37 C.F.R. pt. 42). The new standard applies only to petitions filed on or after November 13, 2018.

[3] Further, Immunex did not request further briefing on the implications of a possible pivot to *Phillips*. And beyond noting that a district court has already more narrowly construed the claim term at issue (albeit not in a final

This court "shall review the decision from which an appeal is taken on the record before the Patent and Trademark Office." 35 U.S.C. § 144. Our predecessor court has refused to consider terminal disclaimers filed after the Board's decision. *In re Thorington*, 418 F.2d 528, 533–34 (CCPA 1969); *In re Heyl*, 379 F.2d 1018 (CCPA 1967). In this situation, we do the same.

Accordingly, in this case we will review the Board's claim construction under the BRI standard.

II

Next, we address the Board's claim construction. Immunex contends that the Board erred by construing the term "human antibody" to encompass not only "fully human" but also "partially human" antibodies.

Claim 1 of the '487 patent recites a "human antibody." The Board determined that the BRI of "human antibody" "includes both fully human and partially human antibodies." *Final Written Decision*, 2019 WL 643041, at *7. As relevant to its obviousness rejection, the Board's construction includes "humanized" antibodies. *Id.* at *9. According to Immunex, however, "humanized" is not "human." For the reasons below, we disagree with Immunex and agree with the Board.

A

We review the Board's claim construction de novo and any underlying factual findings for substantial evidence. *Kaken Pharm. Co. v. Iancu*, 952 F.3d 1346, 1350 (Fed. Cir. 2020) (citing *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318 (2015); *Wasica*, 853 F.3d at 1278). In this case, claim terms are given their "broadest reasonable construction in light of the specification of the patent."

---

judgment), it did not advance any argument that our review should come out differently under *Phillips*.

37 C.F.R. § 42.100(b) (2016); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016).

We review the Board's claim construction according to the Supreme Court's decision in *Teva*. Accordingly, we review the Board's evaluation of the intrinsic record de novo. *See Teva*, 574 U.S. at 331; *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1361–62 (Fed. Cir. 2018). But "[w]e review underlying factual determinations concerning extrinsic evidence for substantial evidence." *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1279–80 (Fed. Cir. 2015), *aff'd sub nom. Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131 (2016); *Teva*, 574 U.S. at 331–32; *Knowles*, 883 F.3d at 1361–62.

B

First, we turn to the intrinsic record. *Personalized Media Commc'ns, LLC v. Apple Inc.*, 952 F.3d 1336, 1340 (Fed. Cir. 2020) ("When construing claim terms, we first look to, and primarily rely on, the intrinsic evidence, including the claims themselves, the specification, and the prosecution history of the patent, which is usually dispositive." (quoting *Sunovion Pharms., Inc. v. Teva Pharms. USA, Inc.*, 731 F.3d 1271, 1276 (Fed. Cir. 2013))). As discussed below, the intrinsic evidence supports the correctness of the Board's construction.

1

We begin claim construction by looking to the language of the claim itself. *Allergan Sales, LLC v. Sandoz, Inc.*, 935 F.3d 1370, 1374 (Fed. Cir. 2019). But nothing in the claim's language restricts "human antibodies" to those that are fully human. This is not surprising: antibodies, amid a rapidly evolving scientific background, are a frequent subject of claim-construction disputes that stretch beyond plain meaning. *E.g.*, *Baxalta Inc. v. Genentech, Inc.*, 972 F.3d 1341, 1345–49 (Fed. Cir. 2020) (construing "antibody"); *UCB, Inc. v. Yeda Rsch. & Dev. Co.*, 837 F.3d 1256,

1259–61 (Fed. Cir. 2016) (construing "monoclonal antibody"); *Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095–97 (Fed. Cir. 2013) (construing "anti-CD20 antibody"). Nor is the claim context helpful, as the dependent claims provide no further guidance.

Accordingly, we consult the rest of the intrinsic record. Indeed, the specification is key—it is "highly relevant to the claim construction analysis" and the "single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *see also In re Translogic Tech., Inc.*, 504 F.3d 1249, 1256–58 (Fed. Cir. 2017) (endorsing *Phillips* "best practices" in the BRI context).

Many patentees *do* expressly define "human antibody." *See, e.g.*, *Abbott GbmH & Co. v. Centocor Ortho Biotech, Inc.*, 870 F. Supp. 2d 206, 247 (D. Mass. 2012) (noting express definition of "human antibody"). Here, however, we are without an express definition. But the usage of "human" throughout the specification confirms its breadth.

The specification contrasts "partially human" with "fully" or "completely human." *E.g.*, '487 patent col. 19 ll. 41–44, col. 20 ll. 57–60, col. 21 ll. 1–2. For example, the specification states that "[a]ntibodies of the invention include, but are not limited to, partially human (preferably fully human) monoclonal antibodies." *Id.* at col. 20 ll. 57–60. And elsewhere, it notes that "[t]he desired antibodies are at least partially human, and preferably fully human." *Id.* at col. 19 ll. 41–44.

Still further, the specification reads:

> A method for producing an antibody comprises immunizing a non-human animal, such as a transgenic mouse, with an IL-4R polypeptide, whereby antibodies directed against the IL-4R polypeptide are generated in said animal. Procedures have been developed for generating *human antibodies* in

> non-human animals. *The antibodies* may be partially human, or preferably completely human.

'487 patent col. 19 ll. 38–44 (emphases added). Again, here the specification makes clear that "human antibodies" is a broad category encompassing both partially and completely human antibodies.[4]

Immunex disagrees with this reading: it protests that the phrase "the antibodies," as italicized above, refers not to "human antibodies"—one sentence back—but to "antibodies directed against the IL-4R polypeptide"—two sentences back. We are unpersuaded. Immunex's proposed interpretation would contort the logical and grammatical reading of the passage.

The specification also repeatedly clarifies that *some* "human" antibodies are "fully human":

> Examples of antibodies produced by immunizing such transgenic mice are the *human monoclonal antibodies* designated 6-2 (described in example 6); 12B5 (described in example 8); and MAbs 63, 1B7, 5A1, and 27A1 (all described in example 9). Monoclonal antibodies 6-2, 12B5, 63, 1B7, 5A1, and 27A1 *are fully human antibodies*, and are capable of inhibiting activity of both IL-4 and IL-13.

---

[4] Immunex, disagreeing that "fully" was necessary to convey an antibody's "completely human" nature, quotes approvingly a district court's remark in the accompanying litigation that "when one purchases . . . a German Shepherd, one assumes, absent further context, that the seller will not deliver . . . a poodle-Shepherd mix." Appellant's Br. 24 (quoting J.A. 9035). But to the extent that canine metaphors are apt, more on the nose is that "brown dogs" plainly include "partially brown" dogs, such as a mostly brown dog with a white spot.

'487 patent col. 21 ll. 6–13 (emphases added); *see also id.* at col. 43 ll. 26–27 ("[Antibody] 12B5 was determined to be an IgG1 antibody, and to be *fully* human." (emphasis added)). If "human antibodies" were already understood to mean "fully human," no clarification would be necessary. This usage confirms that a reader would take "human monoclonal antibodies" to be broader.

Consistent with this usage, the abstract and the summary each simply refer to "human" antibodies. *See* '487 patent Abstract ("Particular antibodies provided herein include human monoclonal antibodies generated by procedures involving immunization of transgenic mice. Such human antibodies may be raised against human IL-4 receptor."); *id.* at col. 2 ll. 42–46 ("Particular antibodies provided herein include human monoclonal antibodies generated by procedures involving immunization of transgenic mice. Such human antibodies may be directed against human IL-4 receptor, for example.").

Accordingly, the language of the specification confirms a broadest reasonable interpretation of "human antibodies" that includes those that are partially human—including "humanized" antibodies.

2

Next, we turn to the prosecution history. The Board found the prosecution history to be "equivocal, at best." *Final Written Decision*, 2019 WL 643041, at *6. Immunex insists that the Board undervalued the prosecution history. Appellant's Br. 32. We agree—here the prosecution history is relevant and informative. But it supports the Board's construction.

First, we note that Immunex used both "fully human" and "human" within the same claim set in another patent

application in the same family.[5] "[T]he prosecution of related patents may be relevant to the construction of a given claim term." *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1343 n.5 (Fed. Cir. 2015). And here, Immunex provides no convincing explanation for its simultaneous use of the two terms beyond what is apparent: they are not interchangeable.

Second, "there is a strong presumption against a claim construction that excludes a disclosed embodiment." *Nobel Biocare Servs. AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1381 (Fed. Cir. 2018) (quoting *In re Katz Call Processing Pat. Litig.*, 639 F.3d 1303, 1324 (Fed. Cir. 2011)). We noted above that the specification's embodiments include partially human antibodies—both humanized and chimeric. And the prosecution history here illustrates why the presumption against their exclusion from the claims is not overcome.

As initially filed, claim 1 recited simply "an isolated antibody." J.A. 2409. The word "human" was added later, at the same time that dependent claim 11, which recited "a human, partially human, humanized, or chimeric antibody," was canceled.[6] J.A. 2233–34. Immunex does not

---

[5] One claim read: "An isolated antibody that competes for binding to human IL-4 receptor with a *fully human* control antibody . . . ." J.A. 6086 (emphasis added). A dependent claim then recited: "The isolated antibody . . . wherein said isolated antibody is a *human* . . . antibody." J.A. 6087 (emphasis added).

[6] Immunex insists that the Board incorrectly "perceived an overlap between claim terms ['human' and 'partially human'] when there is no evidence supporting such overlap." Appellant's Br. 39. We are unconvinced. Indeed, most of the claim terms overlap. The list also included "humanized" and "chimeric"; these overlap with "partially human."

dispute that its originally filed claim covered humanized and chimeric embodiments as well as fully human ones.

Immunex suggests instead that the amendment "surrender[ed]" the partially human embodiments. *E.g.*, Appellant's Br. 26; *see also id.* at 36 (arguing that Immunex "unambiguously amended the claims to remove antibodies that are not fully human"). We disagree. "Because the claim language does not require the exclusion of those embodiments, and there is no basis in the intrinsic record for excluding them," Immunex "has not overcome [the] presumption" against their exclusion. *Nobel Biocare*, 903 F.3d at 1381; *see also, e.g.*, *Baxalta*, 972 F.3d at 1348 ("[D]isavowal must be clear and unmistakable.").

As the Board noted, "human" was added to overcome an anticipating reference that disclosed *nonhuman* murine antibodies—a far cry from "humanized" antibodies. *Final Written Decision*, 2019 WL 643041, at *5; Appellee's Br. 45–46.[7]

We agree with the Board that nothing indicates that Immunex added "human" to limit the scope to *fully* human. There was no apparent need to do so in light of the rejection, and no evidence that anyone understood Immunex to be casting aside subject matter that was not at issue. *Final Written Decision*, 2019 WL 643041, at *5–6.

Immunex points out that the examiner subsequently issued a new obviousness rejection, combining Mosley with Jakobovits's "fully human" antibodies. As Immunex argues, the examiner must have understood human antibodies to mean only "fully human" antibodies because the examiner "repeatedly referred to 'fully human' antibodies while describing Jakobovits." *See* Appellant's Br. 34. But this argument shows only that "fully human" antibodies

---

[7] Immunex did not dispute this characterization of the Mosley rejection by Sanofi or the Board.

are "human," which is undisputed. Further, given that Jakobovits *itself* uses the term "fully human" to describe its own disclosure,[8] we decline to treat as significant the examiner's adoption of that term in making the rejection. Nothing supports reading Immunex's claim as limited to fully human antibodies just because the particular combination of prior art used to reject it included antibodies that were fully human.

Third, in a post-amendment office action, the examiner expressly wrote that the amended "human" antibodies encompassed "humanized" antibodies. J.A. 2211. Immunex suggests without substantiation that this was a "copy and paste error." *See* Appellant's Br. 36. But if so, Immunex made no effort to disabuse the examiner of this understanding. And, while hardly dispositive, this uncontested characterization is consistent with the Board's construction.

Accordingly, the prosecution history also supports the Board's construction.

C

Next, we address the role of extrinsic evidence in the Board's construction.

Immunex argues that the Board "failed to establish how a person of ordinary skill in the art would have understood the term 'human antibody.'" Appellant's Br. 47. That is, Immunex contends that the Board did not adequately consult its extrinsic evidence—its experts' testimony, product catalogs, and a selection of journal articles—to establish whether "human antibody" had an established

---

[8] Jakobovits begins: "The ability to produce a diverse repertoire of fully human monoclonal antibodies (mAbs) may have significant applications to human therapy." J.A. 6452.

meaning to a person of ordinary skill in the art, independent of the specification. We disagree.

It is true that we seek the meaning of claim terms from the perspective of the person of ordinary skill in the art. The key, however, is that we look to how that person would have understood a term *in view of the specification*. *See, e.g.*, *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) ("[C]laims are to be given their broadest reasonable interpretation consistent with the specification, and claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art." (cleaned up)).

While extrinsic evidence may sometimes illuminate a well-understood technical meaning, *Teva*, 574 U.S. at 331–32, that does not mean that litigants can introduce ambiguity in a way that disregards language usage in the patent itself. The patent drafter controls the content of the specification, writes the claims, and responds to office actions. The drafter, then, is in the best position to anticipate ambiguity or questions of scope and to write the patent accordingly. Indeed, we give the intrinsic evidence "priority," *see, e.g.*, *Knowles*, 883 F.3d at 1361–62, over extrinsic evidence with which it is "inconsistent," *Tempo Lighting, Inc. v. Tivoli, LLC*, 742 F.3d 973, 977 (Fed. Cir. 2014) (emphasis omitted); *see, e.g.*, *Celgene Corp. v. Peter*, 931 F.3d 1342, 1350–51 (Fed. Cir. 2019) (holding that the Board "was correct to not allow the extrinsic evidence, including expert testimony, to trump the persuasive intrinsic evidence" (cleaned up)).

Immunex's extrinsic evidence included the testimony of its two experts, who discussed their views in light of a handful of journal articles, catalogs, and other documents. The Board cited this evidence, and clearly considered it. *Final Written Decision*, 2019 WL 643041, at *6–7. But the Board found nothing credible to call its interpretation into question. To the contrary, it credited a prior art reference

and expert testimony that were squarely consistent with "humanized" being understood as a subset of "human." *See id.* at *6 (citing J.A. 5099–100 ¶¶ 9–10 as "Ex. 1477").[9] To the extent that the Board credited this evidence, and therefore necessarily rejected Immunex's conflicting evidence, we owe it deference. *See Teva*, 574 U.S. at 331–32.

At any rate, the intrinsic evidence here decides the issue. Extrinsic evidence may be of assistance if the intrinsic record is equivocal, leaving us looking for further guidance. *See Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008). But here, the meaning of "human antibody" as discerned from the intrinsic evidence squarely conflicts with the meaning that Immunex would distill from its selected extrinsic evidence. *Id.* ("A court may look to extrinsic evidence so long as the extrinsic evidence does not contradict the meaning otherwise apparent from the intrinsic record."). Accordingly, the intrinsic record trumps.

D

Finally, we turn to the matter of the Board's departure from an earlier court's claim construction.

In litigation that prompted this IPR, a district court construed "human" to mean "fully human" only. *See Immunex Corp. v. Sanofi*, No. CV 17-02613 SJO, 2018 WL

---

[9] Immunex belittles this reference, Riechmann, published in 1988 in the prominent journal *Nature*, as being "long-outdated" by 2001. Appellant's Br. 54–55. Nonetheless, Riechmann, being cited in the specification, is intrinsic evidence. *See V-Formation, Inc. v. Benetton Grp. SpA*, 401 F.3d 1307, 1310–11 (Fed. Cir. 2005). Immunex does not contest that Riechmann uses "human" to describe antibodies that are other than fully human. Yet Immunex was apparently untroubled by Riechmann's nomenclature when drafting its patent.

6252460, at *12–14 (C.D. Cal. Aug. 24, 2018). That claim construction order issued two months before the oral hearing in this IPR, and the parties discussed it in their briefing and at oral argument before the Board.

The Board did not adopt the district court's construction. After conducting a full analysis of the parties' arguments, the Board concluded that it reached a different interpretation "based on the broader applicable case law." *Final Written Decision*, 2019 WL 643041, at *7.

Immunex chides the Board for not explaining more fully its departure from the district court's narrower *Phillips*-based construction. Citing *Power Integrations, Inc. v. Lee*, 797 F.3d 1318, 1326 (Fed. Cir. 2015), Immunex contends that the Board must explain in detail why, under a broader legal standard, it reaches a broader construction than a district court does.

The Board's misstep in *Power Integrations*, however, was not merely failing to explain the difference between a *Phillips* construction and the BRI. Rather, the Board there both "failed to acknowledge the district court's claim construction" and "devoted a substantial portion of its analysis" to an issue not raised by the parties, focusing on a "red herring" and failing to adequately address the *substance* of the patentee's primary argument. *Id.* at 1324–25; *see also id.* at 1323 (stating that the Board "fundamentally misconstrued [the] principal claim construction argument"). Indeed, the problem was not that the Board's construction was broader. Rather, the Board had left unaddressed a specific interpretive aspect of the claim term upon which its anticipation determination was based, stymying review. *See id.* at 1325 (concluding that the Board's opinion "provides . . . an inadequate predicate upon which to evaluate its decision to reject claim 1 . . . as anticipated").

Regardless, in *Power Integrations* we reiterated that the Board "is not generally bound by a previous judicial construction of a claim term." *Id.* at 1326; *see also Mayne*

Pharma Int'l Pty. Ltd. v. Merck Sharp & Dohme Corp., 927 F.3d 1232, 1242 (Fed. Cir. 2019) ("[W]e are not persuaded that the Board erred in discounting the district court's construction because the court construed the claims under the narrower, *Phillips* standard."). And we emphasized that the Board need not "in all cases assess a previous judicial interpretation of a disputed claim term." *Power Integrations*, 797 F.3d at 1327. Rather, we require the Board to provide "reasoning in sufficient detail to permit meaningful appellate review." *Id.* And the Board's opinion was sufficiently detailed to permit meaningful appellate review. We conclude that the Board did not err by not saying more.

***

In summary, the Board's construction was correct. Accordingly, we affirm the Board's invalidity judgment predicated on that claim construction.

III

Last, we turn to Sanofi's cross-appeal. Sanofi had alleged in its petition for IPR2017-01879 that certain claims of the '487 patent were anticipated by the disclosure of mAb 6-2, an isolated human antibody, in an earlier publication of Immunex's. That reference, U.S. Patent Application Publication No. 2002/0002132 ("the '132 publication"), is within the same prosecution family as the '487 patent. But Sanofi contested the listed inventorship, insisting that mAb 6-2 was invented "by another"—namely, by research technician Norman Boiani, not the '487 patent's inventors—and therefore that the this disclosure was prior art under § 102(e). The Board disagreed, concluding that Mr. Boiani was not an inventor of mAb 6-2. Sanofi cross-appeals this determination.

Because we affirm the Board's invalidity judgment in the other IPR, which implicates the same claims, it is unnecessary to reach this issue.

CONCLUSION

We have considered the parties' other arguments but find them unpersuasive.[10] For the foregoing reasons, we affirm the Board's judgment holding the '487 patent invalid as obvious. We dismiss the cross-appeal.

AFFIRMED-IN-PART, DISMISSED-IN-PART

---

[10] Additionally, in its reply brief, Immunex raised an Appointments Clause challenge to the Board's authority, citing *Arthrex* and asking us to vacate and remand accordingly. *See Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019). But under *Customedia Technologies, LLC v. Dish Network Corp.*, 941 F.3d 1173, 1174 (Fed. Cir. 2019), failure to raise this challenge in the opening brief constitutes forfeiture.