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Paper 48
Entered: August 10, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THORNE RESEARCH, INC,
Petitioner,

v.

TRUSTEES OF DARTMOUTH COLLEGE,
Patent Owner.

IPR2021-00491
Patent 8,197,807 B2

Before SUSAN L.C. MITCHELL, CHRISTOPHER G. PAULRAJ, and JOHN E. SCHNEIDER, *Administrative Patent Judges*.

SCHNEIDER, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318 (a)

Dismissing-in-Part and Denying-in-Part Petitioner's Motion to Exclude
Dismissing Patent Owner's Motion to Exclude
37 C.F.R. § 42.64

I. INTRODUCTION

A. Background and Summary

Thorne Research, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claims 1–3 of U.S. Patent No. 8,197,807 B2 (Ex. 1001, "the '807 patent"). Paper 2 ("Pet."). The Trustees of Dartmouth College ("Patent Owner") filed a Preliminary Response contending that the Petition should be denied. Paper 10 ("Prelim. Resp."). During a telephone conference held on March 23, 2021, the panel authorized additional briefing on whether certain references were the works "by another" as the term is used in 35 U.S.C. § 102(a) and § 102(e).[1] In accordance with such authorization, Petitioner filed a Reply to Patent Owner's Preliminary Response. Paper 17 ("Pet. Reply"). Patent Owner then filed a Sur-Reply. Paper 15 ("PO Sur-Reply"). We then issued a decision granting *inter partes* review on August 12, 2021. Paper 18 ("Dec.").

Patent Owner subsequently filed a Response, Paper 22 ("PO Resp.") followed by a Reply filed by the Petitioner, Paper 27 ("Reply") and a Sur-Reply by the patent Owner. Paper 31 ("Sur-Reply"). An oral hearing was conducted on May 17, 2022. A copy of the transcript has been made of record. Paper 47 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial. Based on the complete record before us, we determine that Petitioner has not shown, by a preponderance of the evidence,

[1] 35 U.S.C. § 112 was amended by the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011). Because the '807 patent was filed before the effective date of the relevant amendment, the pre-AIA versions of §§ 102 and 103 apply in this proceeding.

that claims 1–3 are unpatentable. In addition, for the reasons explained below, we dismiss-in-part and deny-in-part Petitioner's Motion to Exclude Evidence and dismiss Patent Owner's Motion to Exclude Evidence.

B. Real Parties in Interest

Thorne Research, Inc. identifies itself as the real party-in-interest. Pet. 33. The Trustees of Dartmouth College identifies itself as the real party-in-interest. Paper 5, 2.

C. Related Matters

A petition for *inter partes* review was filed by a third party challenging all of the claims of the '807 patent in IPR2017-01796. Pet. 36. We denied institution of *inter partes* review of the petition in IPR2017-01796. *Elysium Health, Inc. v. Trustees of Dartmouth College*, IPR2017-01796, Paper 9 (PTAB Jan. 18, 2018).

A petition for *inter partes* review was also filed by the third party challenging all claims (1–5) of related U.S. Patent No. 8,383,086 ("the '086 patent") in IPR2017-01795 ("the '1795 IPR"). Pet. 36. We issued a final decision holding that all claims were unpatentable except claim 2. Ex. 1018. That decision was affirmed by the Federal Circuit on March 6, 2020. Ex. 1020, 1–2.

Additionally, Petitioner filed its own petition for *inter partes* review of the '086 patent in IPR2021-00268 filed February 1, 2021. Pet. 36. We issued judgment in that case on May 31, 2022. *Thorne Research, Inc. v. Trustees of Dartmouth College*, IPR2021-00268, Paper 63 (PTAB May 31, 2022).

Patent Owner states that the '807 patent and the related '086 patent are the subject of an infringement action in the United States District Court for the District of Delaware in a case captioned *ChromaDex, Inc., et al. v.*

Elysium Health, Inc., No. 18-cv-01434 (D. Del.). Paper 5, 3. Patent Owner further states that the '086 patent is also subject to a patent misuse counterclaim in *ChromaDex, Inc. v. Elysium Health, Inc.*, No. 16-cv-02277-CJC (C.D. Cal.). *Id.* Patent Owner has also indicated that it has filed an action against Petitioner for infringement of the '086 patent and the '807 patent in *ChromaDex, Inc., et al. v. Thorne Research, Inc.*, No. 1:21-cv-04241 (S.D.N.Y.). Paper 13.

Petitioner represents that the district court in the Delaware action granted Elysium Health's Motion for Summary Judgment of Invalidity of claim 2 of the '086 patent, and claims 1, 2, and 3 of the '807 patent as invalid under 35 U.S.C. § 101 for claiming patent ineligible subject matter. Paper 25, 2. Patent Owner has appealed the district court's decision. *Id.*

D. The '807 Patent

The '807 patent issued on June 12, 2012, with Charles M. Brenner listed as the inventor. Ex. 1001, codes (45), (75). The '807 patent issued from an application filed on April 20, 2006. *Id.* at code (22). As discussed in Section II.C.1, below, the parties disagree as to whether the '086 patent is entitled to an earlier priority date of April 25, 2005.

The '807 Patent relates generally to the production of nicotinamide riboside ("NR") and compositions containing NR. Ex. 1001, col. 3, l. 1– col. 4, l. 16. The '807 patent also describes the use of compositions containing an effective amount of NR to treat various disorders stemming from a deficiency in NR. *Id.* at col. 4, ll. 26–36. NR has been shown to be a precursor of nicotinamide adenine dinucleotide (NAD+). *Id.* The compositions can be in the form of a dietary supplement, such as ingestible tablets, buccal tablets, troches, capsules, elixirs, suspensions, syrups, wafers, chewing gums, and food. *Id.* at col. 4, ll. 14–16, col. 30, ll. 19–56.

E. Illustrative Claim

Of the challenged claims, claim 1 is independent. Claims 2 and 3 depend from claim 1. Claim 1 is illustrative of the claimed subject matter and reads as follows:

> 1. A composition comprising isolated nicotinamide riboside in combination with one or more of tryptophan, nicotinic acid, or nicotinamide, wherein said combination is in admixture with a carrier comprising a sugar, starch, cellulose, powdered tragacanth, malt, gelatin, talc, cocoa butter, suppository wax, oil, glycol, polyol, ester, agar, buffering agent, alginic acid, isotonic saline, Ringer's solution, ethyl alcohol, polyester, polycarbonate, or polyanhydride, wherein said composition is formulated for oral administration and increases NAD+ biosynthesis upon oral administration.

Ex. 1001, col. 53, l. 59–col. 54, l. 59.

F. Evidence

Petitioner relies on the following references:

Brenner, et al., WO 2005/077091 A2, published August 25, 2005. ("PCT Publication") (Ex. 1007).

Bieganowski et al., *Discoveries of Nicotinamide Riboside as a Nutrient and Conserved NRK Genes Establish a Preiss-Handler Independent Route to NAD+ in Fungi and Humans*, 117 Cell 495–502 (May 14, 2005) ("Cell Article") (Ex. 1008).

Rosenbloom, US2003/0185918 A1, published October 2, 2003 ("Rosenbloom") (Ex. 1015).

Petitioner also relies on the Declaration of Dr. Samie Jaffrey, M.D., Ph.D. (Ex. 1002).

Patent Owner relies of the Declarations of Dr. Charles M. Brenner and Dr. Pawel Bieganowski. (Exs. 2002, 2003, 2015, 2020 and 2021).

G. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–3 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3	103(a)	Cell Article, Rosenbloom
1–3	102	PCT Publication

II. ANALYSIS

A. Legal Standards

1. Burden of Proof

At this stage of the proceeding, the burden rests on the petitioner to establish by a preponderance of the evidence that claims 1–3 are unpatentable. 35 U.S.C. § 316(e).

2. Anticipation

"Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim." *Gechter v. Davidson*, 116 F.3d 1454, 1457 (Fed. Cir. 1997). "[U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102." *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008).

3. Obviousness

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art,

(3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations or objective indicia of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).[2] If the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains, the claim is unpatentable under 35 U.S.C. § 103(a). *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

A proper § 103 analysis requires "a searching comparison of the claimed invention—including all its limitations—with the teaching of the prior art." *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995).

"Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination." *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). "Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention." *Id.*

B. Claim Construction

For petitions filed on or after November 13, 2018, we interpret claim terms using "the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary

[2] Patent Owner does not present evidence of secondary considerations or objective indicia of non-obviousness in this proceeding. *See generally* PO Resp.

meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.100(b).

In IPR2017-01796, we construed the term "isolated" as it appears in the '807 patent to require that "the nicotinamide riboside is separated or substantially free from at least some of the other components associated with the source of the molecule such that it constitutes at least 25% (w/w) of the composition." *See* IPR2017-01796, Paper 9 (Decision Denying Institution of *Inter Partes* Review), 5–8. The district court in one of the parallel litigations has since construed "isolated nicotinamide riboside" as "nicotinamide riboside that is separated or substantially free from at least some of the other components associated with the source of the nicotinamide riboside." Ex. 1031, 2.

It is unclear whether Petitioner urges us maintain the same construction for this proceeding as our construction in IPR2017-01796, which was based on the broadest reasonable interpretation standard that was in effect at the time. *See* Pet. 38–39 (indicating that the Board's prior constructions "were observed in the unpatentability analysis presented in this Petition"). Petitioner, however, notes that "[a]lthough the claims were construed under the broadest reasonable construction standard, the constructions adopted by the Board in that proceeding are consistent with the disclosure of the '807 patent, as well as how a POSA [person of ordinary skill in the art] would have understood those terms." *Id.* Patent Owner does not propose its own claim constructions or otherwise dispute Petitioner's contentions regarding claim construction in this proceeding. *See generally* PO Resp. For purposes of our analysis in this Decision, we maintain our prior construction at least to the extent that it is consistent with the district court's construction. That is, we determine that "isolated nicotinamide

riboside" as recited in the claims require "nicotinamide riboside that is separated or substantially free from at least some of the other components associated with the source of the nicotinamide riboside." However, our analysis below would not differ if we had adopted our original construction in its entirety.

We do not find a need to construe any other claim terms. *See Realtime Data, LLC v. Iancu*, 912 F.3d 136 8, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only 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. Are the Cell Article and the PCT Publication Prior Art?

The parties disagree as to whether the Cell Article and the PCT Publication relied upon for the challenges set forth in the Petition are prior art to the '807 patent. Petitioner asserts that the '807 patent is entitled to an effective filing date of April 20, 2006. Pet. 8–17. Based on this effective filing date, Petitioner asserts that the Cell Article is available as prior art under 35 U.S.C. § 102(b) because it was published more than one year earlier, on May 14, 2004. *Id.* at 32 n.10. Petitioner also contends the PCT Publication is prior art under 35 U.S.C. § 102(a) or § 102(e) based on its publication date of August 25, 2005. *Id.* at 34–35 n.12.

Patent Owner contends that the effective filing date of the '807 patent is April 25, 2005. Prelim. Resp. 29. Patent Owner contends that based on this effective filing date, the Cell Article is not prior art under 35 U.S.C. § 102(b). *Id.* Patent Owner also contends that the Cell Article and the PCT Publication are not prior art under 35 U.S.C. § 102(a) or § 102(e) as the relevant portions of the Cell Article and the PCT Publication are not "by another" as that term is used in the statute. PO Sur-Reply 1.

Before we can reach the merits of Petitioner's claims, we must first address the issues of (1) the effective filing date of the '807 patent, and (2) whether the relevant portions of the Cell Article and the PCT Publication are "by another."

1. The Effective Filing Date of the '807 patent

The issue of the effective filing date is important in determining which provisions of 35 U.S.C. § 102 are applicable. For example, if we accept Patent Owner's argument that the effective filing date of the '807 patent is April 25, 2005, the Cell Article is only prior art under 35 U.S.C. § 102(a), making the Cell Article subject to the "by another analysis" set forth below. *See* 35 U.S.C. § 102(a). If, however, we find that the effective filing date of the '807 patent is April 20, 2006, the Cell Article is prior art under 35 U.S.C. § 102(b) and the "by another analysis" is not applicable. *See* 35 U.S.C. § 102(b).[3]

Petitioner contends that the '807 patent is entitled to a priority date of April 20, 2006, the filing date of U.S. Application No. 11/912,400. ("the '400 application"). Pet. 8. Petitioner contends that operation of both the Paris Convention and the Patent Cooperation Treaty ("PCT") precludes any claim of priority earlier than that date because the priority chain of the '807 patent includes two PCT applications. *Id.* at 8–18.

In our Decision to Institute, we did not address the effective filing date of the '807 patent as we preliminarily determined, based on the record at the time, that the Cell Article ("Biegenowski") and the PCT Publication

[3] The PCT Publication was published August 25, 2005, thus it is one prior art under 35 U.S.C. § 102(a) or (e) and is only available if it represents the work of another. *See* 35 U.S.C. § 102(a) and (e). This is true regardless of whether the priority date of the '807 patent is April 2005 or April 2006.

("Brenner") were available as prior art under either 35 U.S.C. § 102(a) or 102(e) even assuming Patent Owner's contention that the effective filing date is April 25, 2005. *Id.* at 13.

Patent Owner contends that the recited provisions of the Paris Convention and PCT are not applicable to the '807 patent, as the claim of priority arises under 35 U.S.C. § 120 and not 35 U.S.C. § 119. PO Resp. 30–33. Patent Owner contends the '807 patent meets the requirements of 35 U.S.C. § 120. *Id.* at 35–37. Patent Owner contends the priority date of the '807 patent is April 25, 2005, which is the filing date of U.S. Application No. 11/113,701 ("the '701 application"). *Id.* at 37–38.

In its Reply, Petitioner renews its contention that the '807 patent is only entitled to a filing date of April 20, 2006. Reply 2. In support of its contention, Petitioner points to the cover sheet of the '807 patent, which only claims priory back to the PCT application, which was filed on April 26, 2006, and which in turn claims priority back to the '701 application. *Id.* at 2–3. Petitioner contends that Patent Owner requested a corrected filing receipt for the '807 patent to claim priority back to the '701 application, but the request was denied. *Id.* at 3–4. Petitioner contends:

> The priority grants by the USPTO for both the '086 and '807 patents are consistent with Article 4 of the Paris Convention. PO [Patent Owner] was put on notice through the corrected filing receipts issued by the USPTO and has failed to take any corrective action. IPR2015-00414, Paper 34, 15 (noting, in denying priority, PO could have sought certificate of correction or reissue, but failed to do so); *Braun v. Becton, Dickinson and Co.*, 1:16-cv-411-RGA, 7 (D. Del. June 9, 2017) (citing IPR2015-00414 for same proposition). PO's arguments otherwise should be rejected.

Id. at 4.

In its Sur-reply, Patent Owner contends that Petitioner is improperly raising a new argument based on Office filing receipts. Sur-reply 1. Patent Owner contends that the '807 patent makes a proper claim of priority under 35 U.S.C. § 102, and the Board's initial decision regarding the filing date of the '807 patent was correct. *Id* at 2.

We have considered the arguments presented by the parties and, similar to our conclusion for the '086 patent in IPR2021-00268, find that the '807 patent is entitled to an effective filing date of April 25, 2005 based on priority to the '701 application.

The '807 patent claims priority to domestic applications involving either US patent applications or a PCT application designating the United States. *See* Ex. 1001, col. 1, ll. 7–13.

> Under § 120, a patent is entitled to the priority date of an earlier filed application if (1) the written description of the earlier filed application discloses the invention claimed in the later filed application sufficient to satisfy the requirements of § 112; (2) the applications have at least one common inventor; (3) the later application is filed before the issuance or abandonment of the earlier filed application; and (4) the later application contains a reference to the earlier filed application.

In re NTP, Inc., 654 F.3d 1268, 1277 (Fed. Cir. 2011); *see also* 35 U.S.C. § 120 (2018). As discussed above, the '807 patent meets all four criteria set forth above for each application in the priority chain of the PCT application listed on the face of the '807 patent. Since the claim of priority arises under Section 120, the provisions of the Paris Convention and PCT do not apply.

While we agree with Petitioner that the face of the '807 patent does not include a citation of the '701 application, the Specification does contain a clear claim of priority back to the '701 application. *See* Ex. 1001, col. 1.,

ll. 11–19. We find that this clear statement is enough for a claim of priority to this earlier application for the '807 patent under 35 U.S.C. § 120.

Petitioner cites to *Apple Inc. v. e-Watch, Inc.*, IPR2015-00414, Paper 34 (PTAB June 22, 2016) ("*Apple*") to support its contention that Patent Owner's failure to seek correction of the priority claim on the face of the '807 patent is fatal to Patent Owner's claim that the filing date should stretch back to April 25, 2005. *See* Reply 2. The facts in *Apple* are distinguishable from the present case. In *Apple*, the priority claim in the specification misidentified the application as a divisional of a prior application when in fact it was not. *Apple*, Paper 34, 7. The Board found this error in identifying the relationship of the applications was fatal to the patent owner's priority claim. *Id.* at 17.

This is in contrast to the present case where the specification properly identifies each of the prior applications and states the claim of priority. Ex, 1001, col. 1, ll. 11–19. As the Board in *Apple* pointed out, pre-AIA 35 U.S.C.§ 120 stated an application is entitled to the benefit of the filing date of the first application "if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application." *Apple*, Paper 34, 9 (quoting 35 U.S.C. § 120). In the present case, the specification contains a specific reference to the chain of applications extending back of the '701 application with appropriate co-pendency of the applications in the chain.

We are unpersuaded by Petitioner's argument that the Office's denial to grant Patent Owner a corrected filing receipt supports its argument that the effective filing date should be April 20, 2006. Reply 3–4. The Office's

refusal to grant a corrected filing receipt was not based on an analysis of Patent Owner's priority claim, but on the grounds that Patent Owner failed to file an amended Application Data Sheet. Ex. 1020, 130.

Based on the foregoing, we determine that the '807 patent is entitled to a filing date of April 25, 2005. Given that the Cell Article was published on May 14, 2004, less than one year before the effective filing date of the '807 patent, the Cell Article is prior art only under 35 U.S.C. § 102(a) if it is the work of another.[4]

2. Are the Relevant Portions of the References "By Another"?

Under § 102(e), a claim is invalid only if "the invention was described in … an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent." Thus, an applicant or patentee may "overcome a prior art reference under section 102(e)" by "establish[ing] that the relevant disclosure describes their own invention." *In re Costello*, 717 F.2d 1346, 1351 (Fed. Cir. 1983).

As with § 102(e), one's own work is also not prior art under § 102(a). *In re Katz*, 687 F.2d 450, 454 (CCPA 1982) ("[O]ne's own work is not prior art under § 102(a) even though it has been disclosed to the public in a manner or form which otherwise would fall under § 102(a)."). Thus, a patentee may overcome a prior art reference under § 102(a) the same way as described above, *i.e.*, by establishing that the relied-upon portions of the reference describe their own invention as opposed to the work of another. *See id.* at 455.

[4] Section 102(e) does not apply here because the Cell Article is not a published "application for a patent" nor a "patent granted on an application for a patent" by another). *See* 35 U.S.C. § 102(e).

Determining that the prior art has a different inventive entity on its face other than the inventive entity on the challenged patent does not end the inquiry. We must also determine "whether the portions of the reference relied on as prior art, and the subject matter of the claims in question, represent the work of a common inventive entity." *EmeraChem Holdings, LLC v. Volkswagen Grp. of Am., Inc.*, 859 F.3d 1341, 1345 (Fed. Cir. 2017) (quoting *Riverwood Int'l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1356 (Fed. Cir. 2003)); *see also Costello*, 717 F.2d at 1349 ("An applicant may also overcome a reference by showing that the relevant disclosure is a description of the applicant's own work. The pertinent inquiry is under 35 U.S.C. § 102(e).").

In *Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1375 (Fed. Cir. 2015), the Federal Circuit explained the shifting burden of production in an *inter partes* review with respect to showing whether a reference is prior art. *Id.* at 1379–80. Here, although the burden of persuasion never shifts to Patent Owner, Petitioner satisfied its initial burden of production by arguing that the PCT Publication (referred to in the Petition as "Brenner") and the Cell Article (referred to in the Petition as "Bieganowski") are prior art to the '807 patent. *See id.* at 1379 (stating the petitioner satisfied its initial burden of production by arguing that the prior art anticipated or rendered obvious the challenged claims); *see also* Pet. 32 n.10 and 34 n.12 (contending that the Cell Article and the PCT Publication both qualify as prior art). The burden of production then shifted to Patent Owner to argue or produce evidence that the PCT Publication and the Cell Article are not prior art. With Patent Owner having argued and produced evidence that the Cell Article and the PCT Publication are not prior art because they are not work "by another," the burden of production shifted

back to Petitioner to prove that the Cell Article and the PCT Publication constitute prior art. *See Dynamic Drinkware*, 800 F.3d at 1380.

Under this burden-shifting framework, we consider the arguments and evidence presented by the parties as to whether the PCT Publication and the Cell Article are prior art.

The PCT Publication lists Dr. Brenner and Dr. Bieganowski as co-inventors. Ex. 1007, code (75). The Cell Article also lists Dr. Brenner and Dr. Bieganowski as co-authors. Ex. 1008, 495. The '807 patent, however, lists Dr. Brenner as the sole inventor. Ex. 1001, code (75). Thus, we agree with Petitioner that the asserted references, on their face, list different inventive entities than the '807 patent. *See* Pet. 32 n.10, 34 n.12. As explained above, however, that does not end the analysis. *See EmeraChem*, 859 F.3d at 1345. We must now determine whether the portions of the references relied upon by Petitioner in the challenges asserted in the Petition represent the work of Dr. Brenner. *See id.*

a) The Cell Article

In the Petition, Petitioner relies on at least six passages of the Cell Article for its assertion that the claims of the '807 patent are unpatentable. Pet. 40–50; Ex. 1002 ¶¶ 74–93. Petitioner focuses of the portions of the Cell Article that relate to compositions containing NR and their use in elevating NAD+ levels in humans. *See id.*

To satisfy its burden of production to show that the Cell Article's disclosure of NR containing compositions is not the work of another, Patent Owner submitted two declarations by Dr. Brenner (Exs. 2002 and 2015) and one declaration by Dr. Bieganowski (Ex. 2003). *See* PO Resp. 14–18. Relying on this evidence, Patent Owner asserts that the portions of the Cell Article relied upon by Petitioner are solely the work of Dr. Brenner. *Id.*

In both his First Declaration (submitted prior to institution) and his Second Declaration (submitted after institution), Dr. Brenner testified that he was solely responsible for the NR research project related to the identification of NR as a compound of interest and therapeutic uses of compositions comprising NR. Ex. 2002 ¶ 14; Ex. 2015 ¶ 12. Dr. Brenner testified that Dr. Bieganowski only acted on his direction and did not contribute to or conceive of any aspect to the NR research regarding the therapeutic uses of NR. Ex. 2002 ¶ 14; Ex. 2015 ¶¶ 4, 11–12. For example, in his Second Declaration, Dr. Brenner testified as follows:

> All of the ideas to conduct these experiments were mine alone. I was the person who identified nicotinamide riboside as a particular compound of interest and came up with the plan for locating and identifying the nicotinamide riboside kinase gene. I then directed others in my lab, including post-doctoral fellow Pawel Bieganowski, to conduct specific experiments to locate the gene. After Dr. Bieganowski performed the assays that I directed him to perform and after the nicotinamide riboside kinase gene was located, I also directed Dr. Bieganowski to perform additional experiments using milk to locate a natural source of nicotinamide riboside.
>
> The idea for therapeutic uses and compositions of nicotinamide riboside, including the therapeutic compositions recited in the claims of the '807 patent, were mine alone. Although there were other scientists that worked for me in my lab at Dartmouth and that performed experiments and assays as part of my NR research project, I came up with the ideas for that work independently from those other scientists. With respect to Dr. Bieganowski, I came up with the specific experiments and assays that I thought were appropriate for carrying out my ideas, and Dr. Bieganowski faithfully executed those experiments and assays at my direction and under my supervision.

Ex. 2015 ¶¶ 11–12.

With respect to the disclosure in the Cell Article, Dr. Brenner testified that he performed studies to establish that NR is a NAD+ precursor in a previously unknown eukaryotic NAD+ synthetic pathway. Ex. 2015 ¶ 30. Dr. Brenner testified he then set out to find sources of NR that could be used in a therapeutic composition. *Id.* Dr. Brenner testified that he directed Dr. Bieganowski to perform the experiments reported in the Cell Article, which confirmed that NR could be used in a therapeutic composition. *Id.*

In his testimony Dr. Brenner explains in detail how each portion of the Cell Article cited in the Petition was his own work. *Id.* ¶¶ 31–34. For example, Dr. Brenner testified:

> The IPR Petition also relies on language from page 499 of the *Cell* article, including the disclosure that "[w]e used the yeast *qns1* mutant to screen for natural sources of nicotinamide riboside and, as shown in Figure 5, we found it in a vitamin fraction of cow's milk" and that "[t]he persistence of 'niacin' as a mixture of nicotinamide and nicotinic acid may attest to the utility of utilizing multiple pathways to generate NAD+ and suggests that supplementation with nicotinamide riboside as [a] third importable NAD+ precursor may be beneficial for certain conditions." Ex. 1008 at 499; *see* Petition at 33, 41, 43-44, 48. This is the portion of the *Cell* article that specifically describes the screening assay that I alone developed to locate sources of nicotinamide riboside that could ultimately be used in therapeutic compositions in humans. As I have previously described, I developed that assay myself and Dr. Bieganowski performed the assays at my direction. The result of that assay revealed that nicotinamide riboside is found in milk in trace amounts, while the other previously-known NAD+ precursors (i.e., nicotinic acid and nicotinamide) did not score positively in the pathway-specific assay. In light of that discovery, and as I reported in the *Cell* article, I also concluded that NR would be a useful therapeutic for certain conditions.

Id. ¶ 31 (alterations in original).

Dr. Bieganowski's testimony corroborates Dr. Brenner's testimony that Dr. Bieganowski performed the work reflected in the Cell Article at the direction of Dr. Brenner. Ex. 2003 ¶ 7; Ex. 2004, 19. Specifically, in his declaration, Dr. Bieganowski testified:

> I was a member of Dr. Charles Brenner's laboratory at Dartmouth College from July 1, 2003 until my departure at the end of 2006. During that time, I assisted Dr. Brenner with his research project relating to nicotinamide riboside. Dr. Brenner designed the project and I was responsible for performing, at Dr. Brenner's direction, the experiments and assays he had designed for identifying yeast and human genes that have nicotinamide riboside kinase activity.

Ex. 2003 ¶ 7. In addition, Dr. Bieganowski testified that he "did not contribute to the claimed inventions of the '807 patent or to any aspect of Dr. Brenner's nicotinamide riboside research project regarding therapeutic uses or compositions of nicotinamide riboside." *Id.* ¶ 8.

Having considered the evidence submitted by Patent Owner, we find Patent Owner has satisfied its burden of production to show the Cell Article is not prior art. We find the testimony of Dr. Brenner—as corroborated by the testimony and disclaimer of Dr. Bieganowski—to be persuasive evidence that the relied-upon portions of the Cell Article represent the work of Dr. Brenner alone. *See In re Mathews,* 408 F.2d 1393, 1396 (CCPA 1969) (finding applicant's declaration and prior art inventor's disclaimer sufficient to overcome a § 102(e) rejection).

The burden of production thus shifts back to Petitioner to rebut Patent Owner's evidence and show the Cell Article qualifies as prior art. In response, Petitioner challenges the sufficiency of Patent Owner's evidence and asserts that Dr. Bieganowski made a significant contribution to the work

described in the Cell Article making the Cell Article the work of another. Reply 4–19. We are not persuaded by Petitioner's arguments.

Petitioner contends that the declarations of Dr. Brenner and Dr. Bieganowski are conclusory and lack the required corroboration. *Id.* at 5–6. Petitioner further contends Dr. Brenner's testimony is not credible and is biased. *Id.* at 7–12. Petitioner points to Dr. Brenner's bias based on his relationship with Patent Owner. *Id.* at 12–13. Petitioner also argues Dr. Bieganowski's testimony does not corroborate Dr. Brenner's testimony. *Id.* at 13–19. We address each of these contentions in turn.

(1) Dr. Brenner's Testimony

Petitioner contends that Dr. Brenner's testimony is not credible. Reply 7. Petitioner argues that Dr. Brenner's testimony that "contemporaneous" documentation confirmed his memory about the NR project is not credible as one of the documents, Dr. Brenner's Rule 132 declaration submitted in 2012, was not created until eight years after the Cell Article was published. *Id.*

Petitioner also contends that Dr. Brenner's testimony is not credible in that Dr. Brenner's testimony reduces Dr. Bieganowski's role to that of a mere technician. *Id.* at 8. Petitioner contends this is inconsistent with the Cell Article's listing of Dr. Bieganowski as the lead author. *Id.* at 9. Petitioner contends that Dr. Brenner's testimony is inconsistent with the fact that Dr. Bieganowski was listed as a co-inventor on the provisional application, US App. No. 60/543,347 (Ex. 1005), and PCT application, as well as an application filed in Australia. Reply 10. Finally, Appellant contends Dr. Brenner's testimony is contradicted by a statement made by Dr. Brenner in an interview where he said that he and Dr. Bieganowski discovered the vitamin activity of NR, and that NR is an additional,

unanticipated vitamin that can allow our cells to rebuild NAD+. *Id.* at 11–12.

We have considered Petitioner's arguments and are not persuaded that Dr. Brenner's testimony is so devoid of credibility as to affect our conclusion that the portions of the Cell Article relied upon by the Petitioner are the work of Dr. Brenner alone.

In our Decision to Institute, we agreed with Petitioner that the First Declaration of Dr. Brenner was conclusory in nature and also undermined by the fact that Dr. Brenner had claimed, as his own, work that was done by others. Dec. 17–20. Patent Owner, however, subsequently submitted a Second Declaration of Dr. Brenner where he offers further explanation as to why the work in the Cell Article cited by Petitioner was his work alone. *See* Ex. 2015 ¶¶ 29–34. Dr. Brenner also provides a more detailed explanation of the NR project and the roles he and Dr. Bieganowski played in the project. Given the level of detail in Dr. Brenner's Second Declaration, we do not agree with Petitioner's contention that the Second Declaration is likewise conclusory.

Petitioner contends that Dr. Brenner's testimony is not credible in that it reduces Dr. Bieganowski's role to that of a mere technician. Reply 8. Petitioner argues this is inconsistent with Dr. Bieganowski being listed as the lead author of the Cell Article. *Id.* at 9. Petitioner points to the publication policies of the Cell Journal, which requires Dr. Brenner to ensure that all appropriate contributors are listed as authors as being inconsistent with Dr. Brenner's assertion that the work in the Cell Article is his alone. *Id.*

We are not persuaded that the listing of Dr. Bieganowski as the first author of the Cell Article renders Dr. Brenner's testimony untrustworthy. As Patent Owner points out, "Dr. Brenner only claims that he conceived the

relied-upon portions of the at-issue references, not the Cell article as a whole or every aspect of the '337 PCT Publication's claims." Sur-Reply 10 (citing Ex. 2002 ¶¶ 16–19; Ex. 2015 ¶¶ 4, 15–34) (emphasis omitted). Moreover, although listing Dr. Bieganowski as an author indicates that Dr. Bieganowski made some contribution to the content of the Cell Article, Petitioner has advanced no evidence that Dr. Bieganowski contributed to the relied-upon portions of the Cell Article. *See* Reply 9.

Petitioner contends that Dr. Brenner's 2012 Rule 132 declaration that was submitted to the Office is not a contemporaneous document as it was prepared almost eight years after the Cell Article was published. *Id.* at 7. Although we agree with Petitioner that the 2012 declaration is not "contemporaneous" with the publication of the Cell Article, other documents, such as the PCT publication and the provisional application, relied upon by Dr. Brenner were prepared at the same time or close to the publication date of the Cell Article. *See* Exs. 1005, 1007, and 1008. We do not find Dr. Brenner's calling his 2012 declaration a contemporaneous record rises to the level of rendering his testimony untrustworthy.

Petitioner contends that Dr. Brenner's statement in an interview during an August 2021 "Habits and Hustles" podcast (Ex. 1034) about his work contradicts his testimony and renders it not credible. Reply 11–12. In the interview, Dr. Brenner stated "Pawel Bieganowski and I, in 2004, discovered the vitamin activity of NR, that NR's an additional, unanticipated vitamin that can allow our cells to rebuild NAD." Ex. 1034, 4. Petitioner contends that "Dr. Bieganowski's role in the discovery of the pathway represents a contribution significant enough to render him a joint inventor of the relied-upon subject matter." Reply 12. Petitioner, however, does not present any evidence as to what Dr. Bieganowski's role was or how it relates

to the relied-upon portions of the Cell Article and the claimed invention. *See id.* Petitioner only presents unsupported attorney argument that Dr. Bieganowski must have made an inventive contribution to the relied upon portions of the Cell Article. *See id.* But "[a]ttorneys' argument is no substitute for evidence." *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1581 (Fed. Cir. 1989).

Petitioner further contends that Dr. Brenner's testimony is undermined by "his clear and substantial bias" based on his financial interests. Reply 12. Petitioner contends Dr. Benner is the Chief Scientific Advisor to Chromadex, which is the licensee of the '807 patent. *Id.* at 12–13. Petitioner contends Dr. Brenner's compensation from Chromadex includes a monthly retainer as well as shares and stock options in Chromadex. *Id.* at 13. Petitioner argues that, given Dr. Brenner's financial stake in Chromadex, there is a heightened need for corroboration of Dr. Brenner's testimony. *Id.*

We are not persuaded that Dr. Brenner's testimony lacks credibility. Although Dr. Brenner's financial interest is a factor in deciding how much weight to give his testimony, much of his testimony is corroborated by Dr. Bieganowski, who testified that he does not have any ownership or financial interest in Chromadex or any other current relationship with Dartmouth College. *See* Ex. 2004, 7:2–13; *see also Varian Med. Sys. v. William Beaumont Hospital*, IPR2016-00160, Paper 82, 29 (PTAB May 4, 2017) (rejecting petitioner's argument of inventor's bias regarding "by another" issue because much of the inventor's testimony was corroborated by the disclaimer declarant); *Trans Ova Genetics, LC v. XY, LLC*, IPR2018-00250, Paper 35, 10 fn. 9 (PTAB June 26, 2019) (holding that testimony from a compensated witness who, as a former board member, may have had

an interest in the outcome, was credible because it "was under oath and subject to cross-examination").

Having considered the parties' arguments and the evidence of record, we find Dr. Brenner's testimony concerning his sole contribution to the relied-upon portions of the Cell Article to be credible and persuasive.

(2) Dr. Bieganowski's Testimony

Petitioner contends Dr. Bieganowski's declaration does not corroborate Br. Brenner's testimony. Reply 13. Petitioner points to our initial determination in the Decision to Institute where we found Dr. Brenner's and Dr. Bieganowski's declarations insufficient to support a finding that the relied upon portions of the Cell Article and the PCT Publication were the work of Dr. Brenner alone. *Id.*

Petitioner contends that there are inconsistencies between the testimony of Dr. Bieganowski and that of Dr. Brenner. *Id.* at 14. In particular, Petitioner points to Dr. Bieganowski's deposition testimony that he did not review the Cell Article when he prepared his declaration because "I didn't need to. I did this work. . . . I know what's in this paper," and "that wasn't necessary." Ex. 2004, 12:13–20. Petitioner contends that Dr. Bieganowski's statement that it was not necessary for him the review the Cell Article because he did the work and knew what was in the paper supports Petitioner's contention that Dr. Bieganowski made a significant contribution of the Cell Article. Reply 14. Petitioner contends that Dr. Bieganowski's role in the work is sufficient to render him a joint inventor of the relied-upon subject matter. *Id.* at 15–16.

Petitioner contends that the relationship between Dr. Brenner and Bieganowski was more than one of "superior-subordinate." *Id.* at 17. Petitioner contends that Dr. Bieganowski was more than just a student

working under Dr. Brenner's supervision. *Id.* at 16. Petitioner contends that the fact that Dr. Bieganowski was a postdoctoral fellow working in Dr. Brenner's laboratory and was listed as the first author on the Cell Article supports Petitioner's contention that the relationship was more than just "superior-subordinate." *Id.*

Finally, Petitioner contends that Patent Owner has failed to provide any independent documentation to support the testimony of Dr. Brenner and Bieganowski. *Id.* Petitioner contends "[w]hile a patent challenger has the burden of producing evidence to support a conclusion of unpatentability, a patent owner bears the burden of producing evidence to support a claim that an asserted reference is not by another." *Id.* at 18.

We have considered Petitioner's arguments and the evidence of record and find Dr. Brenner's testimony, coupled with the corroborating testimony by Dr. Bieganowski, to be credible and sufficient to establish that the relied-upon portions of the Cell Article are the work of Dr. Brenner.

Although we initially found the original declarations of Dr. Brenner and Dr. Bieganowski to be insufficient to show the relied upon portions of the Cell Article to be the sole work of Dr. Brenner, the record at the time of institution did not include any cross-examination testimony of either declarant. Moreover, Patent Owner has since submitted a Second Declaration of Dr. Brenner, which further explains why the relied upon portions of the Cell Article are his work alone and explains the relationship between Dr. Brenner and Dr. Bieganowski. Ex. 2015. This second declaration is consistent with the deposition testimony of Dr. Bieganowski. *Compare, e.g.*, Ex. 2004, 19, *with* Ex. 2015 ¶ 12. The Second Declaration of Dr. Brenner coupled with both the declaration and deposition testimony of Dr. Bieganowski leads us now to conclude that the evidence submitted by

Patent Owner is sufficient and persuasive to show that the relied-on portions of the Cell Article are the work of Dr. Brenner alone.

We are unpersuaded by Petitioner's argument that Dr. Bieganowski's testimony that he didn't need to review the Cell Article because he "did this work" and "know[s] what's in this paper" raises his involvement to the level of being an inventive contributor to the relied-upon portions of the Cell Article. Petitioner has not pointed to any authority or persuasive evidence which supports this contention. *See* Reply 14–16. As the testimony of Drs. Brenner and Bieganowski make clear, although Dr. Bieganowski may have carried out much of the experimental work discussed in the Cell Article, and thus been quite familiar with what was in the article, this record supports our conclusion that it was Dr. Brenner who devised the experiments and who conceived the claimed invention validated by those experiments. Ex. 2003 ¶¶ 7–8, Ex. 2004, 9–21; Ex. 2015 ¶¶ 11–14. We discern nothing in the record before us, other than attorney argument, that Dr. Bieganowski made a significant contribution to the work described in the portions of the Cell Article relied upon by Petitioner to assert that the claimed invention was obvious.

We are similarly unpersuaded by Petitioner's argument that the relationship between Drs. Brenner and Bieganowski was more than that of superior/subordinate and that the nature of their relationship demonstrates that Dr. Brenner's testimony is not credible. Reply 16–17. In support of this contention, Petitioner points to the fact that Dr. Bieganowski was a postdoctoral fellow who worked in Dr. Brenner's laboratory for five years; that Dr. Bieganowski was the first named author of the Cell Article; and that Dr. Bieganowski consulted with Chromadex. *Id.* Although we have taken these facts into account, we do not find that they sufficiently call into

question both Dr. Brenner's and Dr. Bieganowski's testimony regarding their relationship vis-à-vis their work on NR. Dr. Brenner and Dr. Biegenawoski testified in a consistent manner about their respective roles in the laboratory. See Ex. 2015 ¶ 12 (Dr. Brenner testifying that "With respect to Dr. Bieganowski, I came up with the specific experiments and assays that I thought were appropriate for carrying out my ideas, and Dr. Bieganowski faithfully executed those experiments and assays at my direction and under my supervision."); Ex. 2003 ¶ 7 (Dr. Biegenawoski testifying that "Dr. Brenner designed the project and I was responsible for performing, at Dr. Brenner's direction, the experiments and assays he had designed for identifying yeast and human genes that have nicotinamide riboside kinase activity."); Ex. 2004, 19:12–14 (Dr. Biegenawoski testifying that "So the way the lab was organized was that [Dr. Brenner] was designing experiments, and I was making them.").

We thus agree with Patent Owner that the testimony of Drs. Brenner and Bieganowski leads to the conclusion that the relationship between Drs. Brenner and Bieganowski, at least as it related to the NR project, was that of superior and subordinate. We are not inclined to infer a different relationship or a more significant role for Dr. Bieganowski based on the length of time he worked for Dr. Brenner, the fact that he was listed as the first author on the Cell Article, or that he consulted for Chromadex regarding NR. Reply 16–17. Absent any other persuasive evidence that the working relationship between Drs. Brenner and Bieganowski was other than as consistently described by those two individuals under oath, we credit the testimony of these two witnesses.

We are not persuaded that Patent Owner needed to produce additional independent, contemporaneous evidence to sufficiently corroborate the

testimony of Drs. Brenner and Bieganowski. *See* Reply 18–19. In *Katz*, the predecessor of our reviewing court held that a declaration of an inventor was sufficient to establish that a prior art reference was not the work of another where the declaration stated that (1) the inventor was "the sole inventor of the subject matter described and claimed" in the patent application at issue, (2) the inventor was "the sole inventor of the subject matter which is disclosed in [the prior art publication] and disclosed and claimed in the application submitted herewith," and (3) "the other authors of publication . . . were students working under the direction and supervision of the inventor . . . and while co-authoring the publication, are not co-inventors of the subject matter described therein." *Katz*, 687 F.2d at 452, 455–56. Like the inventor's declaration considered in *Katz*, Dr. Brenner's Second Declaration in this proceeding affirmatively states: (1) "I alone am the one that conceived of using NR in therapeutic compositions, as claimed in the ''807 patent," (2) "I alone came up with the ideas reflected in the relied-upon portions of the ''337 PCT Publication and Cell Article," and (3) "any work performed by Dr. Bieganowski as to the relied-upon portions of '337 PCT Publication and the Cell article was performed at my direction and supervision and occurred after I came up with the ideas for that work." Ex. 2015 ¶¶ 10, 14, 15. We also note that Dr. Brenner's Second Declaration is much more detailed than the inventor's declaration found sufficient in *Katz*. Moreover, Dr. Brenner's testimony in this case *is* corroborated by Dr. Bieganowski, who testified that he worked under Dr. Brenner's supervision and that the relied-upon portions of the Cell Article were not his contribution. Ex. 2003 ¶¶ 7–8; Ex. 2004, 19, 21–22. As noted in *Katz*, the submission of disclaiming affidavits or declarations by the other authors "would have ended the inquiry," but did not find that was required by the statute or Rule 132. *Katz*, 687 F.2d at 455.

Petitioner contends that our reviewing court requires us to view the totality of the circumstances when deciding whether a reference is the work of another and that the totality of the circumstances in the present case supports a conclusion that the Cell Article is the work of another. Reply 6, 19. In support of this contention Petitioner cites to *EmeraChem*, 859 F.3d at 1347. *Id.* The facts in the present case are distinguishable from those in *EmeraChem*.

In *EmeraChem*, our reviewing court found an inventor's declaration insufficient to establish that a prior art reference was not "by another," where "the declaration amounts to a naked assertion by an inventor that he and a co-inventor are the true inventors of the passages cited" and "[n]othing in the declaration itself, or in addition to the declaration, provides any context, explanation, or evidence to lend credence to the inventor's bare assertion." *EmeraChem*, 859 F.3d at 1345. Although the lack of contemporaneous documentary evidence was one factor that led to the court's conclusion, the court expressly stated "[w]e do not suggest that an inventor must produce contemporaneous documentary evidence in every case to support his or her declaration," and "[a] number of factors may guide the corroboration assessment, including the time period between the event and trial and the interest of the corroborating witness in the subject matter in suit." *Id.* at 1346–47. In this proceeding, however, the testimony of Dr. Brenner *and* Dr. Bieganowski sufficiently corroborates each other as to Dr. Brenner's contribution (and Dr. Bieganowski's lack of inventive contribution) to the relied-upon teachings of the Cell Article. *See* Ex. 2015 ¶¶ 11–12; Ex. 2003 ¶¶ 7–8; *see also Nobel Biocare Servs. AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1378 (Fed. Cir. 2018) ("Corroborating evidence may include documentary or testimonial evidence. . . . Circumstantial

evidence can be sufficient corroboration"). Thus, when the totality of the evidence is considered, we find that the evidence found missing in *EmeraChem* is present in the case before us.

(3) Work of Others

Petitioner also contends that the Cell Article represents the work of another as the relied-upon portions of the Cell Article were the work of researchers other than Dr. Brenner and Dr. Bieganowski. Pet. Reply 8. Petitioner contends the techniques used by Dr. Bieganowski in the course of his work were known in the art as were all the elements of the claims. *Id.* at 8–10. Citing our decision in IPR2017-01796, Petitioner contends that Dr. Brenner did not invent the subject matter of claim 1 of the '086 patent which is directed to NR in admixture with a carrier. *Id.* at 10.

We are not persuaded by Petitioner's arguments. Although the laboratory techniques and starting materials used by Drs. Brenner and Bieganowski may have been known in the art, that is not the claimed invention. The invention as recited in claim 1 is directed a composition comprising isolated NR combined with one or more of tryptophan, nicotinic acid, or nicotinamide and one of the recited carriers, wherein the composition is formulated for oral administration and increases NAD+ biosynthesis upon oral administration. *See* Ex. 1001, col. 53. That the certain individual elements of the claimed composition may have been known elsewhere in the prior art does not lead to a conclusion that the relied-upon portions of the Cell Article are "by another."

Petitioner cites *In re Facius*, 408 F.2d 1396 (CCPA 1969) for the proposition that the relied-upon portions of the Cell Article may still be applied as prior art "if [they] do not represent the inventive work of Dr. Brenner, but instead represent the work of those in the prior art." Pet.

Reply 8–9 (emphasis omitted). The present case is distinguishable from the facts in *Facius*.

In *Facius*, the issue was whether a reference was available as prior art. 408 F.2d at 1403. The appellant submitted an affidavit stating that although he assisted in the development of the invention claimed in the reference, he did not "invent other relied-upon portions of the reference." *Id.* at 1402. Our reviewing court found that this affidavit was insufficient to overcome the prima facie case that the reference was available as prior art, noting that the statements in the affidavit "are not inconsistent with the possibility of appellant's having merely brought the prior art to the attention of the patentee and perhaps having done some 'design' work on it." *Id.* at 1407. The court in *Facius* stated that the appellant could have overcome the rejection if the appellant had shown that he himself had made the invention in the relied-upon portion of the reference, but he had not. *Id.* By contrast here, Dr. Brenner unequivocally testified that he alone came up with the relied-upon teachings of the Cell Article. Ex. 2015 ¶¶ 29–34.

Based on the arguments and evidence presented at trial, we determine that Petitioner has not satisfied its burden to prove the portions of the Cell Article relied upon for obviousness challenge represent the work of another so as to qualify that reference as prior art under § 102(a).

b) The PCT Publication

Citing various passages of the PCT Publication, Petitioner contends that the PCT Publication anticipates the claims of the '807 patent. Pet. 51–54. Petitioner contends that the PCT Publication is the work of another under 35 U.S.C. § 102 as the publication lists Drs. Brenner and Bieganowski as co-inventors. Pet. Reply 2.

Patent Owner once again contends that the relied-upon passages of the PCT Publication are the work of Dr. Brenner alone and are not the work of another. PO Resp. 14. As with its contentions regarding the Cell Article discussed above, Patent Owner supports its arguments with the declarations of Dr. Brenner and Dr. Bieganowski and the deposition testimony of Dr. Bieganowski. *See* PO Resp. 16–18.

As with the Cell Article, although we find Petitioner satisfied its initial burden of production, we find Patent Owner then has met its burden of production through the declarations of Dr. Brenner and Bieganowski and the deposition testimony of Dr. Bieganowski. For the reasons discussed above, the burden of production thus shifted back to Petitioner to establish that the relied-upon portions of the PCT Publication are the work of another.

Petitioner attempts to satisfy its burden by attacking the credibility of Drs. Brenner and Bieganowski, making largely the same arguments discussed and rejected above. We find these arguments equally unpersuasive as applied to the PCT Publication. Petitioner, however, makes one additional argument regarding the PCT Publication, which we address below. *See* Reply 9–10.

In particular, Petitioner contends that the testimony regarding Dr. Brenner being the sole inventor of the relied-upon portions of the PCT Publication is contradicted by the fact that Drs. Brenner and Bieganowski were both listed as inventors on the PCT Publication and on the earlier filed provisional application, US App. No. 60/543,347. *Id.* Petitioner contends that Dr. Brenner checked both of these applications to be sure they were accurate, including with regard to inventorship. *Id.* Petitioner contends that this is inconsistent with Dr. Brenner's declaration, where he claims to be the sole inventor of the subject matter disclosed and claimed in the PCT

Publication. *Id.* at 11. To this point, Patent Owner responds by arguing that "the issue here is not correctness of inventorship of the asserted [the PCT Publication] or applications leading from the [the PCT Publication] to the '807 patent." Sur-Reply 11. As noted by Patent Owner, "even if Petitioner were correct (and it is not) that the record shows that Dr. Brenner made the sole inventive contribution to the entirety of the [the PCT Publication] or, alternatively, that Dr. Bieganowski made an inventive contribution to the '701 Application, this would not change the fact that Petitioner has failed to establish that that Dr. Bieganowski made an inventive contribution to the relied-upon portions of the at-issue prior art references." *Id.* at 11–12.

We are not persuaded by Petitioner's additional argument with regard to the PCT Publication. Although the listing of Dr. Bieganowski on the provisional application and the PCT Publication suggests that Dr. Bieganowski may have contributed in *some manner* to the invention described in one or more of the claims in those documents, it does not show that Dr. Bieganowski contributed to the relied-upon portions of the PCT Publication. As with the Cell Article, Petitioner asks us to infer from the mere listing of Dr. Bieganowski as a co-inventor of the reference that he must be an inventor of the relied-upon portions of the reference. But, unlike with an issued patent, we are not aware of any authority suggesting that there is a presumption or inference that the inventors named on a PCT publication or a patent application should be considered the true inventors of *all* portions of the reference. *Cf. Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998) ("Patent issuance creates a presumption that the named inventors are the true and only inventors."). In this regard, we give credence to the explanation that Patent Owner may have properly determined that Dr. Brenner was the sole inventor of the claimed subject

matter as amended during prosecution, and thus corrected the inventorship to remove Dr. Bieganowski before the '807 patent issued. Given the corroborated testimony of Dr. Brenner that he is the sole inventor of the relied upon portions of the references, Dr. Bieganowski's unequivocal disclaimer of the inventions, and a lack of other evidence suggesting that Dr. Bieganowski made any contribution to the relied-upon portions of the references, we decline to make any inference based on Dr. Bieganowki having been listed as a co-inventor on the PCT Publication or any of the applications leading up to the '807 patent.

For the reasons stated above, with we determine that, based on the arguments and evidence presented at trial, Petitioner has not satisfied its burden to prove the portions of the PCT Publication relied upon for its anticipation challenge represent the work of another so as to qualify that reference as prior art under § 102(e).

c) Conclusion

Having found that neither the Cell Article or the PCT Publication is the work of another and therefore not available as prior art under 35 U.S.C. § 102(a) or § 102(e), we find Petitioner has not established by a preponderance of the evidence that any challenged claim of the '807 patent is unpatentable.

III. MOTIONS TO EXCLUDE

Both Petitioner and Patent Owner have filed motions to exclude. Paper 36 ("PO Mot.") and 37 ("Pet. Mot."). We address each of these in turn.

A. Patent Owner's Motion to Exclude

Patent Owner seeks to exclude Exhibit 1044 which is the second declaration of Petitioner's expert, Dr. Jaffrey. PO Mot. 1. Patent Owner

contends that the declaration is not proper expert testimony under FRE 702 nor is it relevant. *Id.* at 4–11. We do not rely on Dr. Jaffrey's testimony in rendering this Decision. Accordingly, we dismiss Patent Owner's Motion to Exclude as moot.

B. Petitioner's Motion to Exclude

Petitioner seeks to exclude all of the declarations of Dr. Brenner and Dr. Bieganowski, Exs. 2002, 2003, 2015, 2020, and 2021 "because they provide insufficient evidence to show sufficient basis for the matter to which the declarants testify, and they provide unqualified legal opinions that are not based on sufficient facts or data." Pet. Mot. 2.

Petitioner contends that Dr. Brenner's statements that Dr. Bieganowski was not the inventor of the relied-upon portions of the Cell Article and the PCT Publication constitutes a legal opinion that Dr. Brenner is not qualified to give. *Id.* at 3. Petitioner also contends that the testimony given by Dr. Brenner and Bieganowski is uncorroborated and they fail to provide any factual detail about the work done in the NR project. *Id.* at 3–5.

Petitioner contends that the declarations should be excluded as they "rest on self-serving, uncorroborated assertions by interested parties that makes their probative value substantially outweighed by their undue prejudice and risk of confusing the issues." *Id.* at 5.

We begin by noting that we did not rely on Exhibits 2020 or 2021 in rendering this decision. Accordingly, that portion of Petitioner's motion is dismissed as moot.

With respect to the portions of Dr. Brenner's testimony wherein he appears to opine about the ultimate issue of inventorship, we do not rely on that portion of Dr. Brenner's testimony in our decision. Accordingly, that portion of Petitioner's motion is moot.

Turning to the remainder of Petitioner's motion, the issues raised by Petitioner go to the credibility of Drs. Brenner and Bieganowski and not the admissibility of their testimony. *See MaxLinear, Inc. v. Cresta Tech. Corp.*, IPR2015-00594, Paper 90, 7, 10 (PTAB Aug. 15, 2016) (recognizing that "Petitioner's contention that the Declarations are inconsistent" with other evidence "is not material in an admissibility determination"); *DraftKings Inc. v. Interactive Games LLC*, IPR2020-01107, Paper 39, 17 (PTAB Jan. 4, 2022) (holding that "testimony . . . does not need corroboration by other documentary evidence to be admissible under Fed. R. Evid. 702" and "[t]o the extent Petitioner argues otherwise, Petitioner addresses the weight to be given [the] testimony, as opposed to its admissibility"). For this reason, we deny Petitioner's Motion to exclude.

IV. CONCLUSION

For the foregoing reasons, we conclude that Petitioner has not established by a preponderance of the evidence that claims 1–3 of the '807 patent are unpatentable based on any of the grounds presented.

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–3	103	Cell Article, Rosenbloom		1–3
1–3	102	PCT Publication		1–3
Overall Outcome				1–3

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–3 of the '807 patent are not held unpatentable as obvious over the Cell Article combined with Rosenbloom;

FURTHER ORDERED that claims 1–3 of the '807 patent are not held unpatentable as anticipated by the PCT Publication;

FURTHER ORDERED that Patent Owner's Motion to Exclude is dismissed as moot;

FURTHER ORDERED that Petitioner's Motion to Exclude is dismissed in part as moot and denied in part; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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