

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).

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