

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THORNE RESEARCH, INC.,
Petitioner,

v.

TRUSTEES OF DARTMOUTH COLLEGE,
Patent Owner.

IPR2021-00268
Patent 8,383,086 B2

Before SUSAN L.C. MITCHELL, ROBERT A. POLLOCK, and
JOHN E. SCHNEIDER, *Administrative Patent Judges*.

SCHNEIDER, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining the Challenged Claim Unpatentable

35 U.S.C. § 318 (a)

Denying Petitioner's Motion to Exclude

Denying Patent Owner's Motion to Exclude

37C.F.R. § 42.64

I. INTRODUCTION

A. *Background and Summary*

Thorne Research, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claim 2 of U.S. Patent No. 8,383,086 B2 (Ex. 1001, “the ’086 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).¹ Ex. 1024, 23–24. In accordance with such authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response. Paper 15 (“Pet. Reply”). We instituted *inter partes* review on June 10, 2021. Paper 21 (“Dec.”)

Patent Owner then filed a response on September 21, 2021. Paper 27 (“PO Resp.”). Petitioner then filed a Reply. Paper 34 (“Reply”). Patent Owner filed a sur-reply. Paper 36 (“Sur-Reply”). An oral hearing was conducted on March 15, 2022. A copy of the transcript has been made of record. Paper 62. (“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 claim on which we instituted trial. Based on the complete record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that claim 2 is unpatentable. In addition, for the reasons explained below, we

¹ 35 U.S.C. §§ 102 and 103 was amended by the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011). Because the ’086 patent was filed before the effective date of the relevant amendment, the pre-AIA version of §§ 102 and 103 applies.

deny both Petitioner's Motion to Exclude Evidence and 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 parties-in-interest. Paper 5, 2.

C. Related Matters

Petitioner represents that a petition for *inter partes* review was filed challenging all claims (1–5) of the '086 patent in IPR2017-01795 (“the '1795 IPR”). Pet. 1, 33. 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. 1004 1–2.

Petitioner also represents that a petition for *inter partes* review was filed by a third party challenging related patent U.S. Patent No. 8,197,807 (“the '807 patent”) in IPR2017-01796. Pet. 34. 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).

Petitioner represents that it filed a petition for *inter partes* review of the related '807 patent in IPR 2021-00491, filed February 1, 2021. Paper 18. We instituted trial in this proceeding on August 12, 2021 and the case is awaiting decision.

Patent Owner states that the '086 patent is 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.*, Case No. 18-cv-01434 (D. Del.). Paper 5, 3. Patent Owner further states the '086 patent is also subject to a patent misuse counterclaim in

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ChromaDex, Inc. v. Elysium Health, Inc., Case 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.*, Case No. 1:21-cv-04241 (S.D.N.Y.). (Paper 19).

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 32, 2. Patent Owner has appealed the district court's decision. *Id.*

D. The '086 Patent

The '086 patent issued on February 26, 2013, with Charles M. Brenner listed as the inventor. Ex. 1001, codes (45), (75). The '086 patent issued from an application filed on April 12, 2012, and on its face, claims priority to an application filed April 20, 2006. *Id.* at code (63). The Specification of the '807 patent includes the following claim of priority:

This application is a continuation of U.S. patent application Ser. No. 11/912,400 filed Nov. 20, 2007 now U.S. Pat. No. 8,197,807, which is the National Stage of International Application No. PCT/US2006/015495 filed Apr. 20, 2006, which claims benefit of priority to U.S. patent application Ser. No. 11/113,701 filed Apr. 25, 2005, the teachings of which are incorporated herein by reference in their entireties.

Ex. 1001 col. 1, ll. 7–13.

As discussed in Section II.D, below, the parties disagree as to whether the '086 patent is entitled to an earlier priority date of April 25, 2005.

The '086 Patent relates generally to the production of nicotinamide riboside (“NR”) and compositions containing NR. Ex. 1001, col. 4, ll. 1–16.

The '086 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. 17–29. 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. 29, ll. 43–46.

E. Illustrative Claims

Claim 2 is the only challenged claim before us. Claim 2 depends from claim 1 and therefore incorporates all of the limitations of claim 1. 35 U.S.C. § 112, fourth paragraph (2006). Claims 1 and 2 are reproduced below.

1. A pharmaceutical composition comprising nicotinamide riboside in admixture with a carrier, wherein said composition is formulated for oral administration.
2. The pharmaceutical composition of claim 1, wherein the nicotinamide riboside is isolated from a natural or synthetic source.

Ex. 1001, col. 53, ll. 38–43.

F. Evidence

Petitioner relies on the following references:

Stamler et al., WO 02/055018 A2, published July 18, 2002.

(“Stamler”) (Ex. 1006).

Brenner, et al., WO 2005/077091 A2, published August 25, 2005.

(“Brenner”) (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 (May 14, 2004) (“Bieganowski”) (Ex. 1008).

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