IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CHROMADEX, INC. and TRUSTEES OF DARTMOUTH COLLEGE,

Plaintiffs,

v.

ELYSIUM HEALTH, INC.,

Defendant.

Civil Action No. 18-1434-CFC

[redacted]

PLAINTIFFS' REPLY IN SUPPORT OF THEIR MOTION FOR SUMMARY JUDGEMENT OF INFRINGEMENT OF CLAIMS 1 AND 3 OF U.S. PATENT NO. 8,197,807 (MOTION NO. 1) (D.I. 191)

Dated: May 21, 2021

OF COUNSEL:
Christopher N. Sipes
R. Jason Fowler
Ashley Winkler
Emily Mondry
Evan S. Krygowski
COVINGTON & BURLING LLP
One CityCenter
850 Tenth Street NW
Washington, DC 20001
(202) 662-6000
csipes@cov.com
jfowler@cov.com
awinkler@cov.com
emondry@cov.com
ekrygowski@cov.com

YOUNG CONAWAY STARGATT & TAYLOR, LLP

Adam W. Poff (No. 3990)
Pilar G. Kraman (No. 5199)
Rodney Square
1000 North King Street
Wilmington, DE 19801
(302) 571-6600
apoff@ycst.com
pkraman@ycst.com

Counsel for Plaintiffs ChromaDex, Inc. and Trustees of Dartmouth College

Patrick Flynn
COVINGTON & BURLING LLP
3000 El Camino Real
5 Palo Alto Square, 10th Floor
Palo Alto, CA 94306
(650) 632-4732
pflynn@cov.com

James F. Haley, Jr.
HALEY GUILIANO LLP
75 Broad Street, Suite 1000
New York, NY 10004
(646) 973-2500
james.haley@hglaw.com

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Cases

Other Authorities

TABLE OF ABBREVIATIONS

Abbreviation	Description
The Dartmouth Patents	U.S. Patent Nos. 8,383,086 and 8,197,807
The '807 Patent	U.S. Patent No. 8,197,807
The '086 Patent	U.S. Patent No. 8,383,086
The Asserted Claims	Claims 1–3 of the '807 Patent and Claim 2 of the '086 Patent
ChromaDex	Plaintiff ChromaDex, Inc.
Dartmouth	Plaintiff Trustees of Dartmouth College
Plaintiffs	collectively, Plaintiffs ChromaDex, Inc. and Trustees of Dartmouth College
Elysium	Defendant Elysium Health, Inc.
NR	nicotinamide riboside and, interchangeably, NR chloride
isolated NR	isolated nicotinamide riboside
POSA	person of ordinary skill in the art
Dellinger article	Ryan W. Dellinger et al., Repeat dose NRPT (nicotinamide riboside and pterostilbene increases NAD+ levels in humans safely and sustainably: a randomized, double-blind, placebo-controlled study, NPJ AGING AND MECHANISMS OF DISEASE (Nov. 24, 2017)
SDNY Action	*In re: Elysium Health-ChromaDex Litigation*, No. 17-cv-07394 (SDNY)
D.I. 193	Plaintiffs' Opening Brief in Support of Plaintiffs' Motion for Summary Judgment of Infringement of

Abbreviation	Description
	Claims 1 and 3 of U.S. Patent No. 8, 197,807 (Motion No. 1), D.I. 193 (April 27, 2021)
D.I. 195, CSUF	Plaintiffs' Concise Statement of Facts in Support of Motion for Summary Judgment of Infringement of Claims 1 and 3 of U.S. Patent No. 8,197,807 (Motion No. 1), D.I. 195 (April 27, 2021)
D.I. 269	Elysium's Answering Brief In Opposition to Plaintiffs' Motion for Summary Judgment of Infringement of Claims 1 and 3 of U.S. Patent No. 8,197,807 (Motion No. 1), D.I. 269 (May 14, 2021)
D.I. 270, ESMF	Defendant Elysium Health, Inc.'s Counterstatement of Facts in Opposition to Plaintiffs' Concise Statement of Undisputed Facts in Support of Plaintiffs' Motion for Summary Judgment of Infringement of Claims 1 and 3 of U.S. Patent No. 8,197,807 (Motion No. 1), D.I. 270 at pp. 10-12 (May 14, 2021)
Exs. 1-22	Exhibit to Declaration of Adam W. Poff in Support of Plaintiffs' Motion for Summary Judgment of Infringement of Claims 1 and 3 of U.S. Patent No. 8,197,807 (Motion No. 1), D.I. 221 (April 21, 2021)
Exs. 23-33	Exhibit to Declaration of Adam W. Poff in Support of Plaintiffs' Reply to Their Motion for Summary Judgment of Infringement of Claims 1 and 3 of U.S. Patent No. 8,197,807 (Motion No. 1), filed concurrently (May 21, 2021)

Elysium's response to Plaintiffs' motion for summary judgment of infringement of claims 1 and 3 of the '807 Patent focuses entirely on the requirement that the claimed composition "increases NAD+ biosynthesis upon oral administration." Elysium never disputes that the accused Basis product meets this limitation. Nor could it. The record evidence, including Elysium's admission, establishes without contradiction that Basis increases NAD^+ biosynthesis. CSUF-10. Unable to raise a genuine dispute of material fact, Elysium resorts to invective, accusing ChromaDex of "duplicity" based on an unrelated proceeding and a purported "inconsistency" by Plaintiffs' expert.

Elysium is wrong on the facts, and its attempt to go outside the evidentiary record is wrong as a matter of law. Because the accused Basis product indisputably meets every element of claims 1 and 3, summary judgment should be granted.

I. Elysium Does Not Dispute That the Accused Basis Product Increases NAD^+ Biosynthesis.

Elysium does not dispute that Basis "increases NAD+ biosynthesis upon oral administration." To the contrary, at least five Elysium employees admit that Basis increases NAD^+ biosynthesis. CSUF-10. For example, when Elysium's corporate designee Mark Morris[1] was asked ***in this case*** whether Basis increases NAD^+ biosynthesis, he testified: "Yes. I think it's a simple yes." Ex. 17, 141:25-142:4; *see*

[1] Mark Morris, Elysium's VP of Research and Development, was Elysium's 30(b)(6) witness for topics related to the composition and manufacture of Basis.

also id., 141:19-24. Elysium does not even offer expert testimony on non-infringement of claims 1 and 3. Ex. 16, 62:25-63:17.

Overwhelming evidence—above and beyond the Dellinger article discussed by Elysium—demonstrates that Basis increases NAD^+ biosynthesis. CSUF-10. For example, Elysium represents in its marketing materials that Basis increases NAD^+ levels, CSUF-22 to CSUF-24, and Elysium's own review of the scientific literature confirms that NR supplementation increases NAD^+ levels, Ex. 23.

In short, the fact that Basis increases NAD^+ biosynthesis following administration is not subject to any dispute.

II. ChromaDex's Allegations in the SDNY Action Are Misleading and Irrelevant to the Issues Presented by This Motion.

Elysium nonetheless asserts that a dispute exists based on ChromaDex's allegations in the SDNY Action—an unrelated litigation involving different parties, asserting different causes of actions, and alleging different injuries. The SDNY Action is between ChromaDex and Elysium concerning, in relevant part, claims of false advertising and unfair competition. No patent infringement claim is made in that proceeding, and Dartmouth is not a party.

A. ChromaDex's Allegations in the SDNY Action Are Not Admissible.

ChromaDex's allegations in the SDNY Action ***will not be admissible in evidence***. *See* ESMF-1 to ESMF-5. ChromaDex's pleadings in the SDNY Action

are not judicial or party admissions, *see* DI. 269, because they were made in a different, unrelated case involving distinct legal injuries. *See Arrowood Indem. Co. v. Hartford Fire Ins. Co.*, 774 F.Supp.2d 636, 646 (D. Del. 2011); *see also Giannone v. U. S. Steel Corp.*, 238 F.2d 544, 547-48 (1956). Elysium does not attempt to show the elements of judicial estoppel, including that the pleadings are "irreconcilably inconsistent," ChromaDex changed its position in bad faith, and no lesser sanction is appropriate. *Id.*, 646-647 (citing *Krystal Cadillac–Oldsmobile GMC Truck, Inc. v. Gen. Motors Corp*., 337 F.3d 314, 319–20 (3d Cir. 2003)). Elysium cites no law to support its use of pleadings from another matter to oppose summary judgment.[2] Furthermore, ChromaDex's allegations cannot be used against Dartmouth, who is not a party to—and neither authorized nor adopted ChromaDex's allegations in—the SDNY Action. *Id.*; Fed. R. Evid. 801(d)(2).

B. ChromaDex's Allegations in the SDNY Action Are Not Relevant.

Even were ChromaDex's allegations in the SDNY Action admissible—they are not relevant. ***None of the SDNY allegations*** Elysium cites ***contradict the fact that Basis increases NAD$^+$ upon administration***. Rather, in the SDNY Action, ChromaDex's alleges that Elysium falsely advertises Basis as: tested in a clinical study (the Dellinger article), when that study was actually done on an earlier version

[2] While Elysium cites *ViiV Healthcare Co. v. Gilead Sciences, Inc.*, 2020 U.S. Dist. LEXIS 137487, *4 (D.Del. Aug. 3, 2020), that case did not involve the use of pleadings from another action.

of the product using NR sourced from ChromaDex, Ex. 24, ¶ 63(d); *compare* ESMF-1, ESMF-2; and as producing a "synergistic effect" from the Basis's combination of ingredients, Ex. 24, ¶¶ 90-94; *compare* ESMF-3. ChromaDex also alleges that: Elysium has not sufficiently ensured consistent dosing in Basis, Ex. 24, ¶¶ 95-97; *compare* ESMF-4; and Elysium unfairly competes by misrepresenting its role in discovering and studying NR's beneficial effects, Ex. 24, ¶¶ 127-128; *compare* ESMF-5. ChromaDex's allegations are unrelated to Elysium's patent infringement. For example, that Elysium may be improperly promoting Basis by falsely representing that the Dellinger clinical study was conducted on its current Basis product does not bear on whether Basis increases NAD^+ biosynthesis.

C. ChromaDex's Allegations in the SDNY Action Do Not Contradict Plaintiffs' Arguments.

ChromaDex's allegations in the SDNY Action do not contradict Plaintiffs' arguments in this proceeding. ***ChromaDex has never taken the position that isolated NR does not increase NAD^+ biosynthesis after ingestion***, either here or in the SDNY Action. To the contrary, in the SDNY Action, ChromaDex affirms that NR increases NAD^+. For example, in that Action, Plaintiffs' stated, in response to Elysium's counterclaims, that Dr. Brenner, the '807 Patent's inventor, "discovered the vitamin activity of NR in 2004 and *the use of NR to increase NAD+*." Ex. 26, ¶ 88 (emphasis added). Consistent with that position, here Plaintiffs argue that the

NR in Basis increases NAD^+ biosynthesis upon oral administration. *See* CSUF-10, CSUF-11.

For Elysium's part, in the SDNY Action, it denies the false advertising and unfair competition allegations. Ex. 25, ¶¶ 63, 90, 91, 94, 97, 127-128. And in its counterclaims, Elysium contends that it "truthfully discloses that, at its recommended daily intake (250 mg of NR and 50 mg of pterostilbene), ***its product Basis has been shown to increase NAD levels by 40%*** and is safe to consumers." Ex. 27, ¶ 18 (emphasis added).

In sum, the SDNY pleadings do not raise a genuine dispute of material fact—they are neither admissible nor relevant to this proceeding, and only further support the fact that Basis increases NAD^+ biosynthesis.

III. ChromaDex's Website Does Not Contradict Plaintiffs' Arguments.

Elysium also argues that ChromaDex's website contradicts Plaintiffs' reliance on the Dellinger article. *See* D.I. 269, 4-5; *see also* ESMF-6, ESMF-7. That is not true. ChromaDex's website does not dispute that the Dellinger article demonstrates that a product like Basis increases NAD^+ biosynthesis upon oral administration. Rather, ChromaDex's website, like its SDNY complaint, highlights possible consumer confusion caused by Elysium's marketing its NR as NR-E, suggesting that the NR in Basis is a unique NR product when it is not. Indeed, "NR-E" is just NR. Ex. 21, 105:25-106:2; Ex. 17, 147:9-15.

That Elysium continues to rely on the Dellinger article's clinical data, which undisputedly studied a composition using isolated NR manufactured by ChromaDex, is evidence that Elysium believes that the NR-E in Basis is chemically and pharmacologically the same as the NR manufactured by ChromaDex—including its ability to increase NAD^+. News sources have similarly relied on the Dellinger article's conclusions to report that Basis increases NAD^+ levels. *See* Ex. 28, CDXDE_000165209; Ex. 29, CDXDE_000165201. Elysium's Director of Scientific Affairs, Dr. Dellinger, testified that the source of the NR does not matter for the purpose of clinical effects because "in the literature NR is NR," and the literature shows that NR increases NAD^+ biosynthesis. Ex. 21, 66:16-20, 101:4-8.

IV. Dr. Sobol's Opinions About Testing Related to the Time of the Invention in 2004, Not Today.

Elysium argues that Dr. Sobol takes inconsistent positions by opining that testing would have been required to show that the NR of the prior art was orally bioavailable while testifying that Basis infringes without testing the product. *See* D.I. 269, 7-8 (citing Ex. 30, ¶ 513); *see also* ESMF-9, ESMF-10. There is no inconsistency. Dr. Sobol's opinion that a POSA would want testing to establish NR's bioavailability reflects the knowledge at the time of invention. *See* Ex. 30, ¶¶ 511-513. As Dr. Sobol explained, based on the lack of knowledge about NR, it would not have been obvious to a POSA that NR was orally bioavailable absent testing. Ex. 30, ¶¶ 511-513. Dr. Sobol's opinion is confirmed by a declaration that

Dr. Brenner submitted during the '807 Patent's prosecution describing tests demonstrating NR's previously-unknown bioavailability. Ex. 31, 1234.

Today, due to Dr. Brenner's discovery and subsequent research, it is well-established that isolated NR is orally bioavailable and increases NAD^+ biosynthesis after ingestion. Ex. 13, ¶¶ 30, 32, 75-76; *see also* Ex. 30, ¶ 144; Ex. 33, at Exhibit 1, 1A, 1B, 1D (Elysium's expert citing Ex. 32 showing the literature now establishes that NR increases NAD^+ biosynthesis upon oral administration), ¶ 270. In short, Dr. Sobol's opinion that a POSA would have required testing to confirm NR's oral bioavailability in 2004 is consistent with his opinion that the bioavailability of isolated NR, including in Basis, is now well established.

Elysium's citation of *Kaneka Corp. v. Sinochem Jiangsu Co.*, 2012 WL 13001420, *15 (C.D. Cal. Apr. 24, 2012) is inapposite. In *Kaneka*, a particular test method was specified to determine whether the accused product met the claim requirement. *Id.* Defendant's expert disputed that the plaintiff's expert had performed the required test. *Id.* By contrast, here, the '807 Patent does not require a particular test method to determine whether an accused product increases NAD^+ and, there is no dispute that Basis increases NAD^+ biosynthesis.

The record supports one conclusion: Elysium's Basis product increases NAD^+ biosynthesis upon oral administration. There is no genuine dispute that Elysium infringes claims 1 and 3; summary judgment should be granted.

Dated: May 21, 2021

Respectfully submitted,

OF COUNSEL:
Christopher N. Sipes
R. Jason Fowler
Ashley Winkler
Emily Mondry
Evan S. Krygowski
COVINGTON & BURLING LLP
One CityCenter
850 Tenth Street NW
Washington, DC 20001
(202) 662-6000
csipes@cov.com
jfowler@cov.com
awinkler@cov.com
emondry@cov.com
ekrygowski@cov.com

Patrick Flynn
COVINGTON & BURLING LLP
3000 El Camino Real
5 Palo Alto Square, 10th Floor
Palo Alto, CA 94306
(650) 632-4732
pflynn@cov.com

James F. Haley, Jr.
HALEY GUILIANO LLP
75 Broad Street, Suite 1000
New York, NY 10004
(646) 973-2500
james.haley@hglaw.com

YOUNG CONAWAY STARGATT & TAYLOR, LLP

/s/ Adam W. Poff
Adam W. Poff (No. 3990)
Pilar G. Kraman (No. 5199)
Rodney Square
1000 North King Street
Wilmington, DE 19801
(302) 571-6600
apoff@ycst.com
pkraman@ycst.com

Counsel for Plaintiffs ChromaDex, Inc. and Trustees of Dartmouth College

WORD COUNT CERTIFICATION

The undersigned counsel hereby certifies that the foregoing brief complies with the type-volume limitations of paragraph 20(c) of the Scheduling Order (D.I. 40). The text of the brief, including footnotes, was prepared using Times New Roman 14-point font, and it contains 1,611 words (excluding the title, caption, tables, and signature block).

Dated: May 21, 2021

YOUNG CONAWAY STARGATT & TAYLOR, LLP

/s/ Adam W. Poff
Adam W. Poff (No. 3990)
Pilar G. Kraman (No. 5199)
Rodney Square
1000 North King Street
Wilmington, DE 19801
(302) 571-6600
apoff@ycst.com
pkraman@ycst.com

Counsel for Plaintiffs ChromaDex, Inc. and Trustees of Dartmouth College

CERTIFICATE OF SERVICE

I, Adam W. Poff, hereby certify that on May 28, 2021, I caused to be electronically filed a true and correct copy of the foregoing document with the Clerk of the Court using CM/ECF, which will send notification that such filing is available for viewing and downloading to the following counsel of record:

Steven J. Balick
Andrew C. Mayo
ASHBY & GEDDES
500 Delaware Avenue, 8th Floor
Wilmington, DE 19899
sbalick@ashbygeddes.com
amayo@ashbygeddes.com

Donald R. Ware
Peter G. Ellis
Jeremy A. Younkin
Urszula Nowak
Marco J. Quina
Richard Maidman
Joanna McDonough
FOLEY HOAG LLP
155 Seaport Boulevard
Boston, MA 02210
dware@foleyhoag.com
pgellis@foleyhoag.com
jyounkin@foleyhoag.com
unowak@foleyhoag.com
mquina@foleyhoag.com
rmaidman@foleyhoag.com
jmcdonough@foleyhoag.com
elysiumdelaware-dist@foleyhoag.com

Jeffrey I. D. Lewis
Jenny Shum
FOLEY HOAG LLP
1301 Avenue of the Americas
New York, NY 10019
jidlewis@foleyhoag.com
jshum@foleyhoag.com

Attorneys for Defendant

I further certify that on May 28, 2021, I caused the foregoing document to be served via electronic mail upon the above-listed counsel.

Dated: May 28, 2021

YOUNG CONAWAY STARGATT & TAYLOR, LLP

/s/ Adam W. Poff

Adam W. Poff (No. 3990)
Pilar G. Kraman (No. 5199)
Rodney Square
1000 North King Street
Wilmington, Delaware 19801
(302) 571-6600
apoff@ycst.com
pkraman@ycst.com

Attorneys for Plaintiffs ChromaDex, Inc. and Trustees of Dartmouth College