

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ETON PHARMACEUTICALS, INC.,
Petitioner

v.

EXELA PHARMA SCIENCES, LLC,
Patent Owner

Case PGR2020-00064
Patent No. 10,478,453

**PATENT OWNER'S
PRELIMINARY RESPONSE**

TABLE OF CONTENTS

I.	Introduction	1
II.	Background	9
A.	L-Cysteine Is an Essential Amino Acid, Primarily Administered to Infants, that Posed Devastating Health Risks Due to its High Aluminum Content Before Exela’s Invention.....	9
B.	The Patented Invention Solved the Long-Standing and Complex Problem to Fulfill an Unmet Need for a Stable, Highly Pure Low-Aluminum L-Cysteine TPN Component	14
III.	Claim Construction	18
IV.	Level of Ordinary Skill in the Art.....	18
V.	Institution Should Be Denied Because Eton Has Not Demonstrated That the Allergy Process Qualifies as Prior Art.....	19
A.	Eton Does Not Demonstrate That the Allergy Process Qualifies as a “Public Use”	20
1.	The Johnson Declaration Does Not Support a Conclusion of Public Use.....	21
2.	The Johnson Declaration Lacks the Required Corroboration	23
3.	Eton’s Case Law Does Not Support a Finding of Public Accessibility	25
B.	Eton’s “Embodiment” Theory Lacks Merit	27
VI.	Institution Should Be Denied Because The Petition Fails to Meet the Particularity Requirement of 35 U.S.C. § 322(A)(3).....	28
A.	Grounds 1-3 Lack Particularity Because Eton Is Improperly Blending Different Types of Prior Art Within the Definition of the “Sandoz Label”	29
B.	Grounds 1-3 Lack Particularity Because of Eton’s “Catch-all” Approach	31

VII. Institution Should Be Denied Because Eton Cannot Prevail as to Any Challenged Claim36

A. Ground 1: Eton Fails to Demonstrate That Claims 1-14 Would Have Been Obvious Over the Sandoz Label in View of the Knowledge of a POSITA37

1. The Sandoz Label Does Not Disclose or Suggest the Claimed Limitations37

2. Eton’s “Routine Optimization” Argument Is Based on Hindsight-Infected Assumptions and Ignores the Complex Interplay Between the Claimed Composition’s Features43

B. Ground 2: Eton Fails to Demonstrate That Claims 15-20 and 22 Would Have Been Obvious Over the Sandoz Label in View of the Hospira Label in View of the Knowledge of a POSITA62

C. Ground 3: Eton Fails to Demonstrate That Claim 21 Would Have Been Obvious Over the Sandoz Label in View of the Allergy Process in View of the Knowledge of a POSITA64

VIII. Conclusion68

EXHIBIT LIST

Exhibit No.	Description
2001	Declaration of Dr. Robert J. Kuhn
2002	Aileen B. Sedman et al., <i>Evidence of Aluminum Loading in Infants Receiving Intravenous Therapy</i> , 312 NEW ENG. J. MED. 1337 (1985)
2003	Nicholas J. Bishop et al., <i>Aluminum Neurotoxicity in Preterm Infants Receiving Intravenous-Feeding Solutions</i> , 336 NEW ENG. J. MED. 1557 (1997)
2004	ELCYS [®] Label, Exela Pharma Sciences, LLC
2005	Amended Complaint (Redacted), <i>Exela Pharma Sciences, LLC v. Sandoz, Inc.</i> , No. 1:20-cv-00645-MN (D. Del. June 1, 2020), ECF No. 12
2006	Amended Complaint, <i>Exela Pharma Sciences, LLC v. Eton Pharmaceuticals, Inc.</i> , No. 20-365-MN (D. Del. July 28, 2020), ECF No. 14
2007	Declaration of Mark Hartman (Redacted), <i>Exela Pharma Sciences, LLC v. Sandoz Inc.</i> , No. 19-cv-00318-MR (W.D.N.C. Dec. 6, 2019), ECF No. 26-1
2008	Megan Fortenberry et al., <i>Evaluating Differences in Aluminum Exposure Through Parenteral Nutrition in Neonatal Morbidities</i> , 9 NUTRIENTS 1249 (2017)
2009	Kathleen M. Gura, <i>Aluminum Contamination in Parenteral Products</i> , 17 CURR. OPIN. CLIN. NUTR. & METAB. CARE 551 (2014)
2010	Gordon L. Klein et al., <i>Hypocalcemia Complicating Deferoxamine Therapy in an Infant with Parenteral Nutrition-Associated Aluminum Overload: Evidence for a Role of Aluminum in the Bone Disease of Infants</i> , 9 J. PED. GASTR. & NUTR. 400 (1989)
2011	Jay M. Mirtallo, <i>Aluminum Contamination of Parenteral Nutrition Fluids</i> , 34 J. PARENTERAL & ENTERAL NUTR. 346 (2010)
2012	Robert L. Poole et al., <i>Aluminum Exposure From Pediatric Parenteral Nutrition: Meeting the New FDA Regulation</i> , 32 J. PARENTERAL & ENTERAL NUTR. 242 (2008)

I. INTRODUCTION

Exela's U.S. Patent No. 10,478,453 ("the '453 patent;" Ex. 1001) relates to inventions for stable, highly pure L-cysteine compositions for parenteral administration to, primarily, preterm and underweight infants to nourish them during their fragile first days, weeks, or sometimes months of life. While prior L-cysteine formulations contained up to 5,000 ppb¹ of toxic aluminum, the inventive compositions contain no more than 250 ppb of aluminum, and in certain claims even less.² Unlike prior L-cysteine compositions which, as Eton acknowledges, had aluminum levels that were known to increase over time,³ the aluminum and other impurity levels in the claimed compositions are stable over time so as to remain safe for administration to infants throughout the product's shelf life.⁴ Exela's invention solved what was by 2013 already a "decades old and still

¹ "ppb" is also referred to as "mcg/L" or "µg/L" ("micrograms per Liter").

² *See, e.g.*, Ex. 1001 ('453 Patent) at 59:8–9; *id.* at 59:38–39; Ex. 1005 (Sandoz Label) at 10.

³ Paper 1 at 34, 41, 45; *see also* Ex. 1008 (Bohrer 2001) at 1, 4, Table 2 and Fig. 2.

⁴ *See, e.g.*, Ex. 1001 ('453 Patent) at 16:44–47, 59:2.

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