UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARGENTUM PHARMACEUTICALS LLC

Petitioner

v.

CIPLA LIMITED

Patent Owner

Case No. IPR2017-00807

U.S. Patent No. 8,168,620

SECOND DECLARATION OF HUGH DAVID CHARLES SMYTH, PH.D.

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DOCKET

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VIII.	Given the expected technical difficulties in 2002, a POSA would not have been motivated to combine azelastine and fluticasone with a reasonable expectation of success		
	A.	The lack of meaningful guidance in the art would have dissuaded a POSA from combining azelastine and fluticasone into a combination formulation	
	B.	The prior art taught that fluticasone would aggregate when co- formulated in liquid formulations with another active ingredient, which would have undercut any motivation a POSA may have had to combine azelastine and fluticasone into a fixed-dose combination formulation with any reasonable expectation of success	
	C.	Cramer's Example III would have undercut any reasonable expectation of successfully combining azelastine and fluticasone into a fixed-dose combination	
		i. Dr. Govindarajan's and Dr. Herpin's testing confirms Ms. Malhotra's findings that Example III is not "suitable for nasal administration."	
		ii. Routine experimentation would not remedy the shortcomings of Example III	
IX.	As of June 2002, a POSA would not have had a motivation to use the excipients recited in claims 42-44 in an azelastine/fluticasone combination formulation, and would not have had a reasonable expectation of success28		
	A.	The prior art would have led a POSA away from using the thickening agents "microcrystalline cellulose and sodium carboxymethyl cellulose" as recited in claims 42-44	

Inter Partes Review of U.S. Patent No. 8,168,620 Second Declaration of Hugh David Charles Smyth, Ph.D.(Exhibit 2176)

	B.	The prior art provided no motivation to use a three-preservative combination of "edetate disodium" / "benzalkonium chloride" / "phenyl ethyl alcohol" as recited in claims 42-44	2
	C.	The prior art would not have motivated a POSA to use "glycerin" as the isotonicity agent as recited in claims 42-44	5
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	B.	The Duonase Imitator Products embody the challenged claims4	7
	C.	Meda was skeptical that an azelastine/steroid combination formulation could be formulated and developed	
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		formulation	2
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I, Hugh Charles David Smyth, do declare as follows:

1. I am over the age of eighteen (18) and otherwise competent to make this declaration.

I. Introduction

2. I have been retained as an expert witness by Cipla Ltd. ("Cipla") in the above *inter partes* review matter concerning U.S. Patent No. 8,168,620 ("the '620 patent") (EX1001) that was filed by Petitioner Argentum Pharmaceuticals LLC ("Argentum"). Counsel has informed me that Argentum has challenged the patentability of claims 1, 4-6, 24-26, 29, and 42-44 (collectively "the challenged claims").

3. I have been asked by Cipla to review Argentum's Petition and the declaration submitted on behalf of Argentum by Dr. Maureen Donovan, and to respond to those documents to the extent that their contents fall within my expertise.

4. I am being compensated for my time in connection with this *inter partes* review matter at a rate of \$600 per hour, and my compensation does not depend upon the ultimate outcome of this case. I will also be compensated for any reasonable expenses, including travel costs incurred in conducting activities at counsel's request.

II. Professional and educational background

5. I am presently an Associate Professor with Tenure (Hamm Endowed Faculty Fellow) in the College of Pharmacy at the University of Texas, Austin. I have held this position since 2011. I am also an Adjunct Associate Scientist at the Lovelace Respiratory Research Institute in Albuquerque, New Mexico, a position I have held since 2009. From 2009 to 2011, I served as an Assistant Professor in the College of Pharmacy at the University of Texas, Austin. From 2005 to 2009, I was an Assistant Professor in the College of Pharmacy at the University of New Mexico. And from 2004 to 2005, I was a Research Assistant Professor in the College of Pharmacy at the University of North Carolina, Chapel Hill.

6. I received a Bachelor of Pharmacy in 1995 from the University of Otago, in Dunedin, New Zealand. In 1997, I earned a Post Graduate Diploma in Pharmacy, with Distinction, from the University of Otago. In 2000, I received my Ph.D. in Pharmaceutical Sciences from the University of Otago. My thesis topic was the "Investigation of Electrically Assisted Drug Delivery in the Percutaneous Delivery of Peptides." From 2001 to 2003, I was a Post-Doctoral Fellow at the School of Pharmacy at the University of North Carolina, Chapel Hill.

7. My current research focuses on the development of novel methods for drug delivery including nasal, inhalation, transdermal, ophthalmic, and oral delivery systems for a variety of diseases.

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