

Filed: January 20, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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COALITION FOR AFFORDABLE DRUGS II LLC  
Petitioner

v.

NPS PHARMACEUTICALS, INC.  
Patent Owner

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Case IPR2015-00990  
Patent 7,056,886

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**PATENT OWNER'S RESPONSE**

	<b>Page</b>
I. Introduction.....	1
II. The Claimed Invention – Stable, Pharmaceutically Acceptable pH GLP-2 Formulations and Their Use to Treat Serious Diseases .....	7
III. The Petitioner’s Challenges - Obviousness .....	12
IV. Summary of Non-Obviousness of Each Challenged Claim.....	16
A. Ground 1 - Claims 46-50, 52, and 69-75 Are Not Obvious over Drucker ‘379 in view of Kornfelt and Osterberg.....	17
B. Ground 2 - Claims 61-67 Are Not Obvious over Drucker ‘600 in view of Kornfelt, Osterberg, and Holthius.....	21
C. Ground 3 - Claims 51 and 75 Are Not Obvious over Drucker ‘379 in view of Kornfelt, Osterberg, and Munroe .....	22
D. Ground 4 - Claim 68 Is Not Obvious over Drucker ‘600 in view of Kornfelt, Osterberg, Holthius, and Munroe .....	23
V. State of the Art.....	23
A. The Field of the Invention and Level of Ordinary Skill in this Art .....	23
B. The State of the Art Was Unpredictable and Complex.....	24
C. Dr. Palmieri’s Testimony Is Unreliable; He Is Neither an Expert Nor One of Ordinary Skill in the Art.....	27
VI. Petitioner Misconstrued the Disclosures of the Prior Art .....	32
A. Drucker ‘379 .....	32
B. Drucker ‘600.....	33
C. Osterberg.....	33
D. Kornfelt.....	35
E. Holthius.....	39
F. Munroe.....	39
VII. Surprising and Unexpected Results of the ‘886 Patent Invention .....	40
VIII. Stabilization of Glucagon Is not Predictive of Stabilization of GLP-2 .....	43
IX. Histidine Is a Problematic Excipient.....	48
X. There Is No Motivation to Combine the References to Arrive at the Claimed Invention with a Reasonable Expectation of Success; Rather, There Are Clear Teachings Away from Petitioner’s Combinations.....	51
XI. Petitioner’s Obviousness Analysis Was Plagued by Hindsight.....	54
XII. Secondary Considerations Support a Finding of Non-Obviousness.....	56
A. ‘886 Patent Solved a Long-Felt Need.....	57

**TABLE OF CONTENTS**  
(con'd)

	<b>Page</b>
B. GATTEX - The Commercial Embodiment of the '886 Patent Is a Significant Commercial Success.....	57
XIII. The Nexus Between the Secondary Considerations and the Invention .....	59
XIV. Conclusion .....	60

The Patent Trial and Appeal Board (“PTAB”), on October 23, 2015, implemented this Inter Partes Review (“IPR”) of certain claims of U.S. Patent No. 7,056,886 (“the ’886 patent”). Pursuant to 35 U.S.C. §§ 314 and 316((a)(8) and 37 C.F.R. §42.120, Patent Owner NPS Pharmaceuticals, Inc. submits this Patent Owner’s Response and requests issuance of a final written decision under 35 U.S.C. § 318 (a) and issuance and publication of a certificate under 35 U.S.C. § 318 (b) confirming the patentability of the challenged claims.

## **I. Introduction**

The ’886 patent inventor discovered GLP-2/GLP-2 analog formulations “exhibiting superior stability following storage and/or exposure to elevated temperatures.” Ex. 1003, Abstract. The challenged claims (46-52 and 61-75) are directed to formulations of GLP-2 or an analog that are stabilized, particularly when lyophilized (*i.e.*, six months at ambient temperature, 18 months at 4°C with less than about 5% peptide degradation) at a pharmaceutically acceptable pH (*i.e.*, a pH that can be administered without patient reactions that preclude further administration) by a combination of L-histidine, phosphate buffer, and mannitol (46-51) or mannitol or sucrose (52), kits containing the latter formulations (61-68), and methods of use to treat serious intestinal diseases (69-75). This invention resulted in the first successfully marketed GLP-2 analog product approved for treating short bowel syndrome - GATTEX®.

The PTAB instituted this IPR because:

[t]he information relied upon in the Petition tend[ed] to suggest that L-histidine has a stabilizing effect on peptide drugs generally, indicating that properties of L-histidine peptides affecting peptide association (and, therefore, peptide stabilization) are relevant in a manner distinct from properties of L-histidine affecting biological activity of the peptides.

\* \* \* \* \*

[the Petitioner showed] sufficiently that a person of ordinary skill in the art would have had a reasonable expectation of success in formulating GLP-2 in combination with L-histidine and sucrose or mannitol to create a lyophilized storage stable formulation in view of the guidance set forth in the prior art.

\* \* \* \* \*

[t]he information set forth in the Petition [was] sufficient to establish that buffered pharmaceutical formulations of GLP-2 analogs were known and that Osterberg and Kornfelt suggests that the use of L-histidine in combination with an excipient such as mannitol or sucrose in protein formulations was a predictable variation within the technical grasp of a person of ordinary skill in the art done for the purposes of protein stabilization.

Paper 28, 19, 22-23. These conclusions are incorrect and arise from incomplete and unreliable expert testimony. The PTAB relied upon Petitioner's alleged expert Dr. Anthony Palmieri, who provided an uninformed and less than expert explanation of the prior art, particularly Kornfelt *et al.*, U.S. Patent No. 5,652,216 ("Kornfelt")

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