

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUPIN LTD. and LUPIN PHARMACEUTICALS INC.
Petitioner

v.

SENJU PHARMACEUTICAL CO., LTD.
Patent Owner

Inter Partes Review Nos. IPR2015-01097 (U.S. Patent No. 8,751,131)
IPR2015-01099 (U.S. Patent No. 8,669,290)
IPR2015-01100 (U.S. Patent No. 8,927,606)
IPR2015-01105 (U.S. Patent No. 8,871,813)¹

REPLY DECLARATION OF M. JAYNE LAWRENCE, PH.D.

¹ The word-for-word identical paper is filed in each proceeding identified in the heading. IPR2016-00089 has been joined with IPR2015-01097; IPR2016-00091 has been joined with IPR2015-01100; and IPR2016-00090 has been joined with IPR2015-01105. Each of these joined proceedings includes Petitioners InnoPharma Licensing, Inc., InnoPharma Licensing LLC, InnoPharma Inc., Mylan Pharmaceuticals Inc., and Mylan Inc. (collectively, “InnoPharma”) in addition to the parties identified above.

Contents

| | | |
|------|---|----|
| I. | Introduction..... | 4 |
| II. | Qualifications..... | 4 |
| III. | Materials Reviewed | 6 |
| IV. | Legal Standards | 7 |
| V. | A Person of Ordinary Skill in the Art Would Have Combined Ogawa and Sallmann to Arrive at the Claimed Inventions | 7 |
| A. | Bromfenac was an NSAID with superior efficacy..... | 9 |
| B. | A POSA would have considered Ogawa Example 6 | 12 |
| C. | A POSA would have considered Sallmann Example 2 | 18 |
| D. | A POSA would have been motivated to substitute tyloxapol for polysorbate 80, and that substitution would have resulted in an improved formulation | 19 |
| VI. | The Patent Owner Fails To Consider the Full Scope of the Prior Art | 28 |
| A. | Complexation of acidic NSAIDs and BAC was known | 28 |
| B. | NSAIDS are chemically and structurally similar..... | 31 |
| C. | Ethoxylated octylphenols were known to solve the complexation problem..... | 36 |
| D. | BAC was commonly used for ophthalmic products | 41 |
| E. | Tyloxapol is an octylphenol within the class disclosed in Fu, and tyloxapol and polysorbate 80 were among the few approved for ophthalmic formulations..... | 43 |
| VII. | The patent owner’s Evidence of Alleged Objective Indicia Is Not Probative of Patentability | 47 |

| | | |
|-------|---|----|
| A. | The Patent Owner’s purported unexpected results relating to tyloxapol were known in the art..... | 47 |
| B. | The data relied upon by the patent owner do not demonstrate that the claimed preparations are more chemically stable than the closest prior art | 49 |
| C. | Tyloxapol is not the reason for the ability to reduce pH..... | 53 |
| VIII. | The Dependent Claims Are Not Separately Patentable..... | 55 |
| A. | Stability | 55 |
| B. | pH | 56 |
| C. | Concentration of tyloxapol..... | 57 |
| D. | Preservative efficacy standard..... | 58 |
| IX. | Conclusions..... | 59 |

I, Jayne Lawrence, Ph.D., declare and state as follows:

I. INTRODUCTION

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

2. I have been retained as an expert witness on behalf of Lupin Ltd. and Lupin Pharmaceuticals Inc. for the above captioned inter partes review (“IPR”). I am being compensated for my time in connection with these IPRs at my standard consulting rate, which is GBP300 per hour. My compensation is not contingent on the conclusions I reach herein or on the specifics of my testimony. I have no financial stake in the outcome of this proceeding.

3. I am the same expert who provided a declaration in these IPRs dated 21 April 2015 (“opening declaration”). (EX 1005).

II. QUALIFICATIONS

4. I am an expert in the field of formulation and drug delivery, specifically pharmaceutical formulation for oral and parenteral use (i.e., non-oral, including intravenous intramuscular, nasal, respiratory and ophthalmic), including aqueous liquid preparations. I have been an expert in this field since prior to 2003. In formulating my opinions, I have relied upon my training, knowledge, and experience in the relevant art. A copy of my curriculum vitae was previously

provided as Exhibit 1054, and it provides a comprehensive description of my academic and employment history. (EX 1054).

5. I incorporate by reference herein my qualifications, as provided in paragraphs 3-15 of my opening declaration. (EX 1005, ¶¶ 3-15).

6. I have been retained by counsel for Lupin to provide a reply expert declaration to respond to opinions provided by the patent owner's experts Dr. Williams² and Dr. Davies³ in the declarations that each has submitted in IPR2015-01097, IPR2015-01099, IPR2015-01100, and IPR2015-01105.

² Dr. Williams submitted a total of four declarations, one in each IPR, each identified as "EX 2082," and I respond to each of Dr. Williams's declarations here. While Dr. Williams's declarations are specific to each patent, the content of the declarations is largely the same. In citing to Dr. Williams's declarations here, I have indicated each declaration by referencing the IPR number in which the declaration was filed, i.e., "1097-EX 2082" refers to Dr. Williams's declaration concerning the '131 patent in IPR2015-01097; "1099-EX 2082" refers to Dr. Williams's declaration concerning the '290 patent in IPR2015-01099; "1100-EX 2082" refers to Dr. Williams's declaration concerning the '606 patent in IPR2015-01100; and "1105-EX 2082" refers to Dr. Williams's declaration concerning the '813 patent in IPR2015-1105. Additionally, I note that Dr. Williams's declarations are repetitive. To the extent I cite to any specific paragraph in Dr. Williams's declarations, it should be understood that I intend to refer to that paragraph, and all substantially identical paragraphs.

³ Dr. Davies submitted a total of four declarations, one in each IPR, each identified as "EX 2105," and I respond to each of Dr. Davies's declarations here. While Dr. Davies's declarations are specific to each patent, the content of the declarations is largely the same. In citing to Dr. Davies's declarations here, I have indicated each declaration by referencing the IPR number in which the declaration was filed, i.e., "1097-EX 2105," "1099-EX 2105," "1100-EX 2105," and "1105-EX 2105."

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.