IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KVK-TECH, INC.,

Petitioner,

v.

SHIRE LLC,

Patent Owner.

Case IPR2018-00290 US Patent No. 8,846,100

DECLARATION OF JAMES E. POLLI, Ph.D.

SHIRE EX2060 KVK v. SHIRE IPR2018-00290

DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

TABLE OF CONTENTS

Page

| LIST OF EXHIBITS iii | | | | |
|----------------------|-------------|---|--|--|
| I. | INTF | ODUCTION1 | | |
| II. | EXP | ERIENCE AND QUALIFICATIONS1 | | |
| | A. | Professional Background1 | | |
| | B. | Materials Considered for This Declaration | | |
| III. | SUM | MARY OF MY OPINION4 | | |
| IV. | LEG | AL PRINCIPLES | | |
| | A. | Claim Construction | | |
| | B. | Anticipation and Obviousness7 | | |
| | C. | Person of Ordinary Skill in the Art10 | | |
| V. | THE | CHALLENGED PATENT11 | | |
| VI. | PRIN | CIPLES OF DRUG DELIVERY16 | | |
| | A. | Dissolution, Absorption, Distribution and Therapy17 | | |
| | В. | Predictability in Drug Formulation Requires Observed Data- Based Modeling | | |
| VII. | THE | PTAB DECISION TO INSTITUTE THESE PROCEEDINGS | | |
| VIII. | OR P REA | RE IS NO PRIOR ART IN VITRO/IN VIVO CORRELATION K/PD MODEL IN EVIDENCE – THERE CANNOT BE ANY SONABLE EXPECTATION OF SUCCESS FOR THE ENDED PURPOSE | | |
| | A. | Burnside's In Vitro Dissolution Test Did Not Indicate In Vivo Results | | |
| | B. | The Prior Art Discloses No Information or Data that Would Motivate a Three Bead IR-DPR-SR Amphetamine Combination Formulation with any Reasonable Expectation of Success | | |
| | | Burnside Discloses No Information or Data that Would Motivate a Three Bead IR-DPR-SR Combination Formulation with any Reasonable Expectation of Success45 | | |

i

TABLE OF CONTENTS (continued)

Page

| | | 2. The ADDERALL XR PDR and Label Disclose No Information or Data that Would Motivate a Three Bead IR-DPR-SR Combination Formulation with any Reasonable Expectation of Success |
|------|-------|---|
| | | 3. Speculation from the Principle of Superposition Would Not Yield a Reasonable Expectation of Success from a Hypothetical Burnside Combination |
| IX. | RELE | PRIOR ART TAUGHT AWAY FROM SUSTAINED EASE FOR A THERAPEUTIC AMPHETAMINE POSITION |
| | A. | Acute Tolerance Made It Impossible to Have any Reasonable Expectation of Success in Using an SR Bead with Amphetamines to Treat Disease |
| | B. | Collectively, Other References Relied on by Petitioner Support an Expectation that Sustained Release Would Likely Fail |
| | C. | Additional References Support an Expectation that Sustained Release Would Likely Fail |
| Х. | | MS 5-12 AND 21 ARE NOT OBVIOUS OVER BURNSIDE NE OR WITH ADDERALL XR ("THE PK CLAIMS") |
| | А. | Claims 5-12 Are Not Obvious over Burnside Alone or with Adderall XR ("The PK Claims") |
| | | 1. Different Bead and Dose Ratios Produce Different Results |
| | | 2. Different Coating Thicknesses Produce Different Results |
| | B. | Claim 21 (No Food Effect)100 |
| XI. | CLA | MS 22-30 ARE NOT OBVIOUS ("DOSAGE CLAIMS")103 |
| APPE | ENDIX | A CURRICULUM VITAE |

LIST OF EXHIBITS

| 2001 | DECLARATION OF BERNHARDT L. TROUT, Ph.D. (with CV) |
|------|---|
| 2002 | DECLARATION OF SARA ROSENBAUM, Ph.D. (with CV) |
| 2003 | FDA Orange Book Listing for MYDAYIS® (NDA N022063) |
| 2004 | MYDAYIS® FDA Label (06-2017) |
| 2005 | MYDAYIS® Website Pages |
| 2006 | Amidon, U.S. Patent No. 5,229,131 |
| 2007 | Mehta, U.S. Patent No. 5,837,284 |
| 2008 | IPR2017-00011 Decision Denying Institution (RE41, 148) (300 Patent) |
| 2009 | Excerpts from Merck, 11th Ed |
| 2010 | Ansel, Popovich & Allen 6th, Ch. 3-5 (1995) |
| 2011 | Sonsalia, Remington Ch. 74, - CNS Stimulants (1995) |
| 2012 | Robinson, Remington, Ch. 94 - Sustained Release (1995) |
| 2013 | Porter, Remington, Ch. 93 – Coating (1995) |
| 2014 | Franz, Remington Vol. II, Ch. 57 - Sympathomimetic Drugs (1995) |
| 2015 | Malinowsi, Remington, Ch. 53 – Bioequivalence (2000) |
| 2016 | Stempel, 7th Ed Dispensing of Medication (1971) |
| 2017 | USP 23 NF 18 - Uniformity Sec. 905 (1955) |
| 2018 | USP 23 NF 18 1995 - Excerpts (1955) |
| 2019 | Patrick, Human Psychopharmacology, 12:527-546 (1997) |
| 2020 | Spencer, Arch Gen Psych, 58:775-78 (2001 Aug) |
| 2021 | Lehninger, Principles of Biochemistry, Excerpt (1993) |
| 2022 | Benet, Toxicologic Pathology, 23:115-123 (1995) |
| 2023 | Shargel, Applied Bio & Pharmacokinetics, Ch. 2, 10 (1999) |
| 2024 | Gibaldi, Biopharmaceutics & Clinical Pharmacokinetics, Ch.1 (1991) |
| 2025 | Gibaldi, Biopharmaceutics & Clinical Pharmacokinetics, Ch.5 (1991) |
| 2026 | Chiao, Remington, Ch. 94 – Sustained Release (1995) |
| 2027 | Hinsvark, J. Pharmacokin. Biopharm., 1:319-328 (1973) |
| | |

-iii-

| 2028 | Benet, Transplantation Proc., 31 (Suppl 3A), 7S-9S (1999) |
|------|---|
| 2029 | Winters, Basic Clinical Pharmacokinetics (1994) |
| 2030 | Rowland, Clinical Pharmacokinetics 2d (1989) |
| 2031 | Mircioiu, Basic & Clinical Pharmacology & Toxicology, 96:262–264 (2005) |
| 2032 | Booijink, Future Microbiol. 2(3), 285-295 (2007) |
| 2033 | Fischer, Pharm. Res., 4:480-485 (1987) |
| 2034 | Gupta and Robinson, Controlled Release Delivery (1992) |
| 2035 | Macheras, Oral Drug Absorption, Ch. 6 - Modeling Biopharm. (2006) |
| 2036 | Schug, European J. Pharm. Sci., 15:279-285 (2002) |
| 2037 | Hendeles, J. Allergy Clin. Immunol., 72:7:43-751 (1986) |
| 2038 | FDA Use & Limitations of In Vitro Testing (Excerpts) |
| 2039 | Guidance for Industry ER Formulations IVIVC (1997) |
| 2040 | Amidon, Mol. Pharm., 7:1361 (2010) |
| 2041 | Khan, International Journal of Pharmaceutics 140:131-143 (1996) |
| 2042 | Koziolek, Advanced Drug Delivery Reviews 101:75-88 (2016) |
| 2043 | Chasseaud, Ann. Rev. Pharmacol., 14:35-46 (1974) |
| 2044 | Greenhill, J. Am. Acad. Child Adolesc. Psychiatry, 42:1234-1241 (2003) |
| 2045 | Swanson, Clin. Pharmacol. Therap., 66:95-305 (1999) |
| 2046 | Spencer, Current Diagn & Treatment Psych., Ch 35 – ADHD (2008) |
| 2047 | Decision re Institution of IPR2015-02009 |
| 2048 | Gibaldi, Biopharmaceutics & Clinical Pharmacokinetics, Ch. 7 – (1991) |
| 2049 | Gibaldi, Biopharmaceutics & Clinical Pharmacokinetics, Appendix II (1991) |
| 2050 | Percel, US 2003-0157173A1 |
| 2051 | Couch, WO 2004-028509A1 |
| 2052 | Shire, Q3 2017 MYDAYIS Results (Excerpts) |
| 2053 | Brauer, J. Clin. Pharm. 16-1, 72-76 (1996) |
| 2054 | Shire, ER and IR Utilization in Adult ADHD [CONFIDENTIAL] |
| 2055 | Shire, MYDAYIS Performance [CONFIDENTIAL] |
| 2056 | Auiler, Curr. Med. Res. Opin., 18:311-316 (2002) |
| | |

-iv-

DOCKET A L A R M



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.