UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD
<u></u>
MYLAN PHARMACEUTICALS INC., Petitioner v.
ALLERGAN, INC. Patent Owner
Case IPR2016-01127 Patent 8,685,930

PATENT OWNER ALLERGAN, INC.'S **RESPONSE** 



Case IPR2016-01127 Attorney Docket No: 13351-0008IP1

## **TABLE OF CONTENTS**

I.	Introduction			
II.	Background of the '930 Patent	7		
A.	Lack of Tear Production is a Hallmark of Dry Eye Disease	7		
B.	Prior Treatments for Dry Eye Disease	9		
C.	Allergan's Development of RESTASIS®	11		
III.	The Asserted Prior Art References	12		
A.	The Ding '979 Patent	13		
B.	The Sall Paper	13		
IV.	The '930 Patent	16		
V.	Argument	17		
	Increasing The Amount Of Castor Oil Vehicle In The Emulsion ould Be Expected To Reduce The Amount of CsA Reaching The crimal Gland	. 22		
The	PK Data Predicted That The Claimed 0.05% CsA/1.25% stor Oil Vehicle Emulsion Would Have Been Less Effective Than e 0.10% CsA/1.25% Castor Oil Vehicle Emulsion At Increasing Tear oduction			
C. Pro	The Claimed Emulsion Is More Effective At Increasing Tear oduction Than The Ding '979 Emulsions	28		
D. Op	The Increased Tear Production Is Not Due To Balancing Or timizing The Concentration Of The Castor Oil Vehicle	30		
E. Pro	The Claimed Formulation Is Critical For Increasing Tear oduction And Works Differently Than Other Emulsions	34		
F. '97	The Differences Between The Claimed Emulsion And The Ding 9 Emulsions Are Differences In Kind, Not Degree			
G.	Objective Evidence Of Non-Obviousness	38		
	. There was a long-felt need and unmet need for a dry eye treatmen hat increased tear production			



Attorney Docket No: 13351-0008IP1

	2. The claimed emulsions unexpectedly were more effective at ncreasing tear production than the Ding '979 prior art emulsions	39
	3. The claimed emulsions were commercially successful because the ncreased tear production	-
Н.	Allergan Did Not Admit That The Claims Were Unpatentable	42
I. '97	Claims 11, 23 And 35 Would Not Have Been Obvious Over Din 79 Plus Sall And Acheampong.	_
VI.	CLAIM CONSTRUCTION	44
VII.	CONCLUSION	45



Case IPR2016-01127 Attorney Docket No: 13351-0008IP1

## **LIST OF EXHIBITS**

Exhibit No.	Description
EX. 2001	NDA 21-023 Cyclosporine Ophthalmic Emulsion 0.05%, Original NDA Filing, Vol. 1 (Feb. 24, 1999)
EX. 2002	U.S. Pat. No. 4,839,342
EX. 2003	Said et al., Investigative Ophthalmology & Visual Science, vol. 48, No. 11 (Nov. 2007):5000-5006
EX. 2004	Alba et al., Folia Ophthalmol. Jpn. 40:902-908 (1989)
EX. 2005	Stedman's Medical Dictionary, definition of therapeutic
EX. 2006	Dorland's Illustrated Medical Dictionary, definition of therapeutic
EX. 2007	Stedman's Medical Dictionary, definition of palliative
EX. 2008	RESTASIS® label
EX. 2009	Murphy, R., "The Once and Future Treatment of Dry Eye," Review of Optometry, pp. 73-75 (Feb. 15, 2000)
EX. 2010	RESERVED
EX. 2011	Agarwal, Priyanka and Ilva D. Rupenthal, "Modern Approaches to the Ocular Delivery of Cyclosporine A," Drug Discovery Today, vol. 21, no. 6 (June 2016)
EX. 2012	Damato et al., "Senile Atrophy of the Human Lacrimal Gland: The Contribution of Chronic Inflammatory Disease," British Journal of Ophthalmology (1984)
EX. 2013	Higuchi, "Physical Chemical Analysis of Percutaneous Absorption Process From Creams and Ointments," Seminar, New York City (1959)
EX. 2014	Lallemand et al., "Cyclosporine a Delivery to the Eye: A Pharmaceutical Challenge," European Journal of Pharmaceutics and Biopharmaceutics (2003)



EX. 2015 das Neves et al., "Mucosal Delivery of Biopharmaceuticals: Biology, Challenges and Strategies," Springer Science (2014)  EX. 2016 Power et al., "Effect of Topical Cyclosporin A on Conjunctival T Cells in Patients with Secondary Sjögren's Syndrome," Cornea 12(6): 507-511 (1993)  EX. 2017 Schaefer et al., "Skin Permeability," Springer-Verlag (1982)  EX. 2018 Stern et al., "The Pathology of Dry Eye: The Interaction Between the Ocular Surface and Lacrimal Glands," Cornea 17(6): 584-589 (1998)  EX. 2019 Wepierre, Jacques and Jean-Paul Marty, "Percutaneous Absorption of Drugs," Elsvier/North-Holland Biomedical Press (1970)  EX. 2020 Williamson et al., "Histology f the Lacrimal Gland in Keratoconjunctivitis Sicca," Brit. F. Ophthal /91973)  EX. 2021 "Approved Drug Products with Therapeutic Equivalence Evaluations," U.S. Department of Health and Huma Services, 37th Edition (2017)  EX. 2022 Lemp, Michael A., "Report of the National Eye Institute/Industry Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001  EX. 2030 FDA Review, "The Drug Development and Approval Process"		
Cells in Patients with Secondary Šjögren's Syndrome," Cornea 12(6): 507-511 (1993)  EX. 2017 Schaefer et al., "Skin Permeability," Springer-Verlag (1982)  EX. 2018 Stern et al., "The Pathology of Dry Eye: The Interaction Between the Ocular Surface and Lacrimal Glands," Cornea 17(6): 584-589 (1998)  EX. 2019 Wepierre, Jacques and Jean-Paul Marty, "Percutaneous Absorption of Drugs," Elsvier/North-Holland Biomedical Press (1970)  EX. 2020 Williamson et al., "Histology f the Lacrimal Gland in Keratoconjunctivitis Sicca," Brit. F. Ophthal /91973)  EX. 2021 "Approved Drug Products with Therapeutic Equivalence Evaluations," U.S. Department of Health and Huma Services, 37th Edition (2017)  EX. 2022 Lemp, Michael A., "Report of the National Eye Institute/Industry Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Eric Rubinson  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2015	
EX. 2018 Stern et al., "The Pathology of Dry Eye: The Interaction Between the Ocular Surface and Lacrimal Glands," Cornea 17(6): 584-589 (1998)  EX. 2019 Wepierre, Jacques and Jean-Paul Marty, "Percutaneous Absorption of Drugs," Elsvier/North-Holland Biomedical Press (1970)  EX. 2020 Williamson et al., "Histology f the Lacrimal Gland in Keratoconjunctivitis Sicca," Brit. F. Ophthal /91973)  EX. 2021 "Approved Drug Products with Therapeutic Equivalence Evaluations," U.S. Department of Health and Huma Services, 37th Edition (2017)  EX. 2022 Lemp, Michael A., "Report of the National Eye Institute/Industry Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2016	Cells in Patients with Secondary Sjögren's Syndrome," Cornea
the Ocular Surface and Lacrimal Glands," Cornea 17(6): 584-589 (1998)  EX. 2019 Wepierre, Jacques and Jean-Paul Marty, "Percutaneous Absorption of Drugs," Elsvier/North-Holland Biomedical Press (1970)  EX. 2020 Williamson et al., "Histology f the Lacrimal Gland in Keratoconjunctivitis Sicca," Brit. F. Ophthal /91973)  EX. 2021 "Approved Drug Products with Therapeutic Equivalence Evaluations," U.S. Department of Health and Huma Services, 37th Edition (2017)  EX. 2022 Lemp, Michael A., "Report of the National Eye Institute/Industry Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2017	Schaefer et al., "Skin Permeability," Springer-Verlag (1982)
of Drugs," Elsvier/North-Holland Biomedical Press (1970)  EX. 2020 Williamson et al., "Histology f the Lacrimal Gland in Keratoconjunctivitis Sicca," Brit. F. Ophthal /91973)  EX. 2021 "Approved Drug Products with Therapeutic Equivalence Evaluations," U.S. Department of Health and Huma Services, 37th Edition (2017)  EX. 2022 Lemp, Michael A., "Report of the National Eye Institute/Industry Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2018	the Ocular Surface and Lacrimal Glands," Cornea 17(6): 584-589
EX. 2021 "Approved Drug Products with Therapeutic Equivalence Evaluations," U.S. Department of Health and Huma Services, 37th Edition (2017)  EX. 2022 Lemp, Michael A., "Report of the National Eye Institute/Industry Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2019	
Evaluations," U.S. Department of Health and Huma Services, 37th Edition (2017)  EX. 2022 Lemp, Michael A., "Report of the National Eye Institute/Industry Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2020	
Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21, no. 4 (October 1995)  EX. 2023 Deposition transcript of Mansoor Amiji, Ph.D  EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2021	Evaluations," U.S. Department of Health and Huma Services, 37th
EX. 2024 Declaration of John D. Sheppard, M.D., M.M.Sc.  EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2022	Workshop on Clinical Trials in Dry Eyes," CLAO Journal, vol. 21,
EX. 2025 Declaration of Dr. Thorsteinn Loftsson, Ph.D.  EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2023	Deposition transcript of Mansoor Amiji, Ph.D
EX. 2026 Declaration of Eric Rubinson  EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2024	Declaration of John D. Sheppard, M.D., M.M.Sc.
EX. 2027 Allergan PK-98-074 Report  EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2025	Declaration of Dr. Thorsteinn Loftsson, Ph.D.
EX. 2028 Declaration of Robert S. Maness, Ph.D.  EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2026	Declaration of Eric Rubinson
EX. 2029 DiMasi, "Risks in New Drug Development: Approval Success Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2027	Allergan PK-98-074 Report
Rates for Investigational Drugs," Clinical Pharmacology and Therapeutics, May 2001	EX. 2028	Declaration of Robert S. Maness, Ph.D.
EX. 2030 FDA Review, "The Drug Development and Approval Process"	EX. 2029	Rates for Investigational Drugs," Clinical Pharmacology and
	EX. 2030	FDA Review, "The Drug Development and Approval Process"



# 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.

