

**UNITED STATES PATENT AND TRADEMARK OFFICE**

---

**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

---

FlatWing Pharmaceuticals, LLC

Petitioner

v.

Anacor Pharmaceuticals Inc.

Patent Owner

Patent No. US 9,549,938  
Issue Date: January 24, 2017

Title: Boron-Containing Small Molecules

---

**DECLARATION OF NARASIMHA MURTHY, PH.D  
IN SUPPORT OF PETITION FOR INTER PARTES  
REVIEW OF U.S. PATENT NO. 9,549,938**

Case No. 2018-00168

---

**TABLE OF CONTENTS**

I. Introduction.....1

II. Qualifications and Experience.....1

III. Materials Considered.....3

IV. Statement of Legal Principles.....5

V. The '938 Patent.....9

VI. The Pertinent Prior Art .....20

VII. Claim Construction.....33

VIII. Grounds for Unpatentability .....34

Declaration of S. Narasimha Murthy, Ph.D.

**I. INTRODUCTION**

1. I, S. Narsimha Murthy, Ph.D., hereby declare that the following is true and correct. I am over the age of 18, competent to make this declaration, and I am familiar with the facts below. I offer this declaration in support of the Petition for *inter partes* review of claims of U.S. Patent No. 9,549,938 (the '938 Patent).

**II. QUALIFICATIONS AND EXPERIENCE**

**A. Background and Work Experience**

2. I received a Bachelor of Pharmacy from Bangalore University, India, in 1992, a Master of Pharmacy from Bangalore University, India, in 1994, and a Ph.D. in Pharmaceutics from Bangalore University, India, in 2002. I completed my postdoctoral research in the department of Molecular and Cellular Biophysics at Roswell Park Cancer Institute, Buffalo, NY from 2002-2005.

3. I was an Assistant Professor of Pharmaceutics at the M.S.R. College of Pharmacy, India from 1994-2002. I was an Assistant Professor of Pharmaceutics at Ohio Northern University, Ohio from 2005-2006, and an Assistant Professor of Pharmaceutics at the University of Mississippi from 2006-2011. I was an Associate Professor of Pharmaceutics from 2011-2016 at the University of Mississippi and continuing as Professor of Pharmaceutics and Drug Delivery since 2016 until the present. I founded the Institute for Drug Delivery and Biomedical Research in Bangalore, India in 2013.

Declaration of S. Narasimha Murthy, Ph.D.

4. I have received numerous research grants directed to the topical administration of therapeutics, including “Nail Penetration of Antifungal Drugs” sponsored by Arno Therapeutics (2014-15), “Bioadhesive Properties of Nail Lacquers” sponsored by Chanelle Group, France (2010), “Rapid Transdermal Delivery of Drugs” sponsored by Transport Pharmaceuticals Inc. (2008-09), and “Electret Effects on the Skin Permeability” sponsored by Rad Elec. Inc. (2005-06).

5. I have served as the Chief Editor of two books: *Dermatokinetics of Therapeutic Agents* (2011) and *Topical Nail Products and Ungual Drug Delivery* (2012). I have also authored eleven (11) book chapters directed to topical and other routes of administration of therapeutics.

6. Since the late 1990s, my research interests have been based on intradermal, transdermal, and unguial (nail) drug delivery. My research has resulted in over 85 publications in peer reviewed journals.

7. My CV is attached as Exhibit 1006.

8. I am competent to make this declaration based upon my personal knowledge and expertise in the area of product development, drug delivery mechanisms, topical drug formulations, and in vitro and in vivo evaluation of therapeutic agents to treat onychomycosis and other nail diseases.

Declaration of S. Narasimha Murthy, Ph.D.

**B. Engagement**

9. I am being compensated \$500 per hour for services I provide in this case, and \$1000 per day if travel is required. This compensation is not contingent upon my performance, the outcome of this petition for *inter partes* review, or any issues involved in or relating to this petition for *inter partes* review.

**III. MATERIALS CONSIDERED**

10. In preparing this Declaration, I reviewed the following documents and information, and the Petition:

<b>EXHIBIT</b>	<b>DESCRIPTION</b>	<b>SHORT FORM</b>
Ex. 1001	U.S. Patent No. 9,549,938	'938 Patent
Ex. 1002	Prosecution History of the '938 Patent	
Ex. 1007	Austin et al., PCT Pub. No. WO 1995/033754	Austin '574
Ex. 1008	Brehove, U.S. Patent Pub. No. 2002/0165121	Brehove '121
Ex. 1009	Freeman et al., PCT Pub. No. WO 2003/009689	Freeman '689
Ex. 1010	Samour et al., U.S. Patent No. 6,224,887	Samour '887
Ex. 1012	U.S. Patent No. 7,582,621	'621 Patent
Ex. 1013	Prosecution History of the '621 Patent	
Ex. 1014	Final Written Decision, <i>Coalition for Affordable Drugs X LLC v. Anacor Pharmaceuticals, Inc.</i> , IPR2015-01776 (P.T.A.B. Feb. 23, 2017), Paper 70	
Ex. 1015	U.S. Patent No. 7,767,657 ("the '657 Patent")	'657 Patent

# 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.