

DAVID P. ROTELLA, Ph.D.

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Summary of Accomplishments:

- **Montclair State University**-Obtained \$2.5MM, 5 year drug discovery research grant from Defense Threat Reduction Agency and an additional \$300K in pharmaceutical industry research funding in three years.
- **Wyeth Research**-led chemistry teams in CNS drug discovery projects and key leader for collaboration with Solvay Pharmaceuticals. Delivered a clinical candidate, managed chemists in group that delivered another.
- **Lexicon Pharmaceuticals**- Beginning from a screening hit, in less than one year, led project team that identified potent, selective, orally bioavailable inhibitors of PDE7A.
- **Bristol-Myers Squibb**-First to publish the discovery of novel phosphodiesterase type 5 inhibitors with better *in vitro* potency and selectivity compared to sildenafil. Contributed to discovery of 2 clinical candidates (PDE5 inhibitor, DPP4 inhibitor).
- **Cephalon**-Responsible for initial conception and development of several programs. Key leader in collaborations with Kyowa Hakko and Schering Plough. Discovered CEP 1347, which advanced to phase III trials for Parkinson's Disease.

Experience:

- **Montclair State University July 2011-present**
Margaret and Herman Sokol Professor of Chemistry, Department of Chemistry and Biochemistry; joint appointment in Sokol Institute of Pharmaceutical Life Sciences
- **Independent Consultant, February 2010-present**
Established consulting agreements with pharmaceutical companies and law firms to advance drug discovery programs and provide expert information on selected topics in drug development
- **Wyeth Research/Pfizer, 2005-February 2010**
Principal Research Scientist III, chemistry team leader. Directed up to 20 chemists. Member of Princeton Chemical Science leadership team.
- **Lexicon Pharmaceuticals, 2003-2005**
Senior Group Leader, responsible for multiple drug discovery programs. Directed up to 18 FTEs with 4 direct reports. Member of department leadership team.
- **Bristol-Myers Squibb PRI, 1997-2003**
Principal Scientist, cardiovascular and metabolic disease drug discovery
- **Cephalon, Incorporated, 1991-1997**
Group Leader, CNS and cancer drug discovery.
- **School of Pharmacy, University of Mississippi**

EXHIBIT

Ex. 1004

- Assistant Professor, Department of Pharmacognosy 1987-1991
Adjunct Professor, Department of Medicinal Chemistry, 2009-present
- **School of Pharmacy, University of Pittsburgh**, 2010-present
Adjunct Professor, Department of Pharmaceutical Sciences
 - **Center for Drug Discovery, Northeastern University**, 2010-present
Adjunct Professor
 - Registered pharmacist, Pennsylvania, 1981-1991, 2010-2015

Education:

- Postdoctoral Scholar, Department of Chemistry, The Pennsylvania State University, 1985-1987, under the direction of Prof. K. S. Feldman.
- Ph.D. Medicinal Chemistry, The Ohio State University, 1985, under the direction of Prof. D. T. Witiak.
- B.S. Pharm., Magna cum laude, School of Pharmacy, University of Pittsburgh, April 1981.

Professional Service:

American Chemical Society, Organic and Medicinal Chemistry Divisions
Fellow, Royal Society of Chemistry

Division of Medicinal Chemistry, American Chemical Society:

- Five year term as Vice Chair/Long Range Planning Committee chair, Program Chair, Chair and past Chair (2004-2008). These roles required leadership and collaborative interactions nationally and internationally.
- Three year term as academic councilor (2012-2014)
- Treasurer, 2015-2017

Gordon Research Conference on Medicinal Chemistry

- 2012 vice chair elect
- 2013 vice chair
- 2014 chair

Co-editor, 3rd edition, Comprehensive Medicinal Chemistry 2014-present

Co-editor, 7th edition, Burger's Medicinal Chemistry 2007-present

Senior Editor, Royal Society of Chemistry series on Drug Discovery, 2008-present

Co-editor, "Successful Drug Discovery", (2014), Wiley VCH

Co-editor, "Analogue-Based Drug Discovery", volume 3, (2012), Wiley VCH

Program co-chair, National Medicinal Chemistry Symposium (2010)

Scientific Advisory Board National Medicinal Chemistry Symposium (2014)

Scientific Advisory Board Frontiers in Medicinal Chemistry 2014-2015

Organizer and conference co-chair for "Frontiers in CNS and Oncology Medicinal Chemistry", Siena, Italy, October 7-9, 2007, jointly organized with European Federation for Medicinal Chemistry.

Current Research Funding:

- Discovery of Novel Botulinum Toxin Protease A Inhibitors, 9/29/14-9/28/19, \$2.5MM, Defense Threat Reduction Agency
- Protein Kinase Inhibitors for Parasitic Diseases, 3/1/14-2/28/15, \$90,000, Celgene Corporation
- Research Support, 9/1/11-8/31/16, \$50,000 annually, Margaret and Herman Sokol Endowment

Past Research Funding:

- Protein Kinase Inhibitors for Parasitic Diseases, 3/1/13-2/28/14, \$115,000, Celgene Corporation
- Protein Kinase Inhibitors for Parasitic Diseases, 3/1/12-2/28/13, \$90,000, Celgene Corporation
- Purchase of LCMS, 10/1/13, \$70,000, Shimadzu Corporation
- Lactam Inhibitors of Phospholipase A2, 7/1/88-6/30/90, direct costs \$25,000, Mississippi Affiliate, American Heart Association
- Novel Calmodulin Inhibitors, 7/1/89-6/30/91, direct costs \$35,000, Elsa U Pardee Foundation
- Phospholipase A2 Inhibitors as Novel Anti-inflammatory Agents, 7/1/89-6/30/91, direct costs \$200,000, American Lung Association

Publications:

1. "Stereocontrolled Syntheses for the Six Diastereomeric 1,2-Dihydroxy-4,5-Diaminocyclohexanes: Pt(II) Complexes and P388 Antitumor Properties", Donald T. Witiak, David P. Rotella, Joyce A. Filppi, and Judith Galucci, *J. Med. Chem.* **30**, 1327 (1987).
2. "Synthesis and P-388 Antitumor Properties of the Four Diastereomeric Dichloro 1-Hydroxy-3,4-diaminocyclohexane Pt(II) Complexes", Donald T. Witiak, David P. Rotella, Yong Wei, Joyce A. Filppi and Judith C. Gallucci *J. Med. Chem.* **32**, 214 (1989).
3. "Mechanistic and Preparative Studies of the Intramolecular Photocyclization of Methylated 2-(4-Pentenyl)tropones", Ken S. Feldman, Jon H. Come, Benedict J. Kosmider, Pamela M. Smith, David P. Rotella and Ming-Jung Wu, *J. Org. Chem.* **54**, 592 (1989).
4. "Homoallylically Controlled Epoxidation of Δ^4 -cis-1,2-Disubstituted Cyclohexenes", David P. Rotella, *Tetrahedron Letters*, 1913 (1989).

5. "Application of an Intramolecular Tropone-Alkene Photocyclization to the Total Synthesis of (\pm) Dactylol", Ken S. Feldman, Ming-Jung Wu and David P. Rotella, *J. Am. Chem. Soc.* **111**, 6457 (1989).
6. "Chloroperoxidase Mediated Halogenation of Phenols", Cheryl F. Wannstedt, David P. Rotella and Jerome F. Siuda, *Bull. Contamin. Environ. Toxicol.* **44**, 282 (1990).
7. "Stereocontrolled Iodolactonization of *Erythro* and *Threo* Tertiary Amides", David P. Rotella and Xun Li, *Heterocycles* **31**, 1205 (1990).
8. "The Total Synthesis of (\pm) Dactylol and Related Studies", Ken S. Feldman, Ming-Jung Wu and David P. Rotella, *J. Am. Chem. Soc.* **112**, 8490 (1990).
9. "Synthesis and Structural Analysis of Stereospecific 3,4,5-Trisubstituted γ -Butyrolactone Phospholipids", Xun Li and David P. Rotella, *Lipids* **29**, 211-224 (1994).
10. "The Effect of Pyrrolo[3,4-c]Carbazole Derivatives on Spinal Cord ChAT Activity" David P. Rotella, Marcie A. Glicksman, J. Eric Prantner, Nicola Neff and Robert L Hudkins, *Bioorganic and Medicinal Chemistry Letters*. **5**, 1167-1170 (1995).
11. "Microbial Metabolites of Ophiobolin A and Antimicrobial Evaluation of Ophiobolins", Erguang Li, Alice M. Clark, David P. Rotella and Charles D. Hufford, *J. Nat. Products* **58**, 74-81, (1995).
12. "Stereoselective Synthesis of *Erythro* α -Amino Epoxides" David P. Rotella, *Tetrahedron Letters* **35**, 5453-5456 (1995).
13. "Genesis and Degradation of A β Protein by Cultured Human Neuroblastoma Cells", Robert Siman, John T. Durkin, E. Jean Husten, Mary J. Savage, Seetha Murthy, Suzanne Mistretta, David P. Rotella, Sankar Chatterjee, Bruce Dembofsky, Roger Poorman and Barry D. Greenberg, *Recent Advances in Alzheimer's Disease and Related Disorders*, John Wiley and Sons (1995).
14. "Facile Lewis Acid-Mediated Ring Opening of 4-Hydroxypyrrolidin-2-ones by Amino Acid Esters", David P. Rotella, *Synlett*, 479-480 (1996).
15. "Solid Phase Synthesis of Olefin and Hydroxyethylene Peptidomimetics", David P. Rotella, *J. Am. Chem. Soc.* **118**, 12246-12247 (1996).
16. "Neurotrophic 3,9-Bis[(alkylthio)methyl]- and -Bis(alkoxymethyl)-K-252a Derivatives", Masami Kaneko, Yutaka Saito, Hiromitsu Saito, Tadashi Matsumoto, Yuzuru Matsuda, Jeffrey L. Vaught, Craig A. Dionne, Thelma S. Angeles, Marcie A. Glicksman, Nicola T. Neff, David P. Rotella, James C. Kauer, John P. Mallamo, Robert L. Hudkins, Chikara Murakata, *J. Med. Chem.* **40**, 1863-1869 (1997).
17. "An Update on COX-2 and Farnesyltransferase Inhibitor Development", David P. Rotella, *Curr. Opin. Drug Discovery and Development*, **1**, 165-174 (1998).

18. "Rank-Order of Potencies for Inhibition of the Secretion of A β 40 and A β 42 Suggests that Both are Generated by a Single γ -Secretase", John T. Durkin, Seetha Murthy, E. Jean Husten, Stephen P. Trusko, Mary J. Savage, David P. Rotella, Barry D. Greenberg and Robert Siman, *J. Biol. Chem.* **274**, 20499-20504 (1999).
19. "N-3 Substituted Imidazaquinazolinones: Potent and Selective PDE5 Inhibitors as Potential Agents for Treatment of Erectile Dysfunction" David P. Rotella, Yeheng Zhu, Zhong Sun, John Krupinski, Ronald Pongrac, Laurie Seliger, Diane Normandin, John E. Macor, *J. Med. Chem.* **43**, 1257-1263 (2000).
20. "Optimization of Substituted N-3-Benzyl Imidazoquinazolinone Sulfonamides as Potent and Selective PDE5 Inhibitors" David P. Rotella, Yeheng Zhu, Zhong Sun, John Krupinski, Ronald Pongrac, Laurie Seliger, Diane Normandin, John E. Macor, *J. Med. Chem.* **43**, 5037-5043 (2000).
21. "Phosphodiesterase 5 Inhibitors: Discovery and Therapeutic Utility", David P. Rotella, *Drugs of the Future* **26**, 153-162 (2001).
22. "Osteoporosis: Challenges and New Opportunities for Therapy", *Curr. Opin. In Drug Discovery and Development* **5**, 477-486 (2002).
23. "Phosphodiesterase Type 5 Inhibitors: Current Status and Potential Applications", *Nature Reviews Drug Discovery* **1**, 674-683 (2002).
24. "Tadalafil (Lilly/ICOS)", *Curr. Opin. Invest. Drugs* **4**, 60-65 (2003).
25. "SB-480848. GlaxoSmithKline", *Curr. Opin. Invest. Drugs* **5**, 348-351 (2004).
26. "Novel Second Generation Approaches for the Control of Type 2 Diabetes", *J. Med. Chem.* **47**, 4111-4112 (2004).
27. "Discovery and Structure Activity Relationships of 2-Benzylpyrrolidine-Substituted Aryloxypropanols as Calcium-Sensing Receptor Antagonists", Wu Yang, Yufeng Wang, Jacques Roberge, Zhengping Pa, Yalei Yu, David P. Rotella, Ramakrishna Seethala, R. Michael Lawrence, Jean H. M. Feyen, John K. Dickson, *Bioorg. Med. Chem. Lett.* **15**, 1225-1228 (2005).
28. "Phosphodiesterase Inhibitors: Potential CNS Applications", Nicholas J. Brandon, David P. Rotella, *Annual Reports in Medicinal Chemistry*, **42**, 3-12 (2007)
29. "Potent Non-nitrile Dipeptidic Dipeptidyl Peptidase IV Inhibitors", Ligaya M. Simpkins, Scott Bolton, Zulan Pi, James C. Sutton, Chet Kwon, Guohua Zhao, David R. Magnin, David J. Augeri, Timur Gungor, David P. Rotella, Zhong Sun, Yajun Liu, William S. Slusarchyk, Jovita Marcinkeviciene, James G. Robertson, Aiyang Wang, Jeffrey A. Robl, Karnail S. Atwal, Robert Zahler, Rex A. Parker, Mark S. Kirby, Lawrence G. Hamann, *Bioorg. Med. Chem. Lett.* **17**, 6476-6480 (2007).
30. "Alzheimer's Disease: A Light at the End of the Tunnel?", Albert J. Robichaud, David P. Rotella, *Drug. Development Res.* **2009**, 70, 57-59.

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