Roman Manetsch, Ph.D.

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A. EDUCATION, POSITIONS AND HONORS

Education

October 2002 — Ph.D., Chemistry
Jointly at the Institute of Organic Chemistry at the University of Basel (Switzerland) and at the Department of Chemistry and Biochemistry at the University of Berne (Switzerland),
Advisor Professor Wolf-Dietrich Woggon and Co-Advisor Professor Jean-Louis Reymond
Thesis: *"Transition State Analogues for the Identification of the Enzyme Tocopherol Cyclase and for the Preparation of Catalytic Monoclonal Antibodies"*

June 1998 — Diploma in Chemistry
University of Basel (Switzerland), Studies in Chemistry (main subject) and Biology (minor subject)
Advisor: Professor Wolf-Dietrich Woggon
Thesis: *Synthesis of Potential Inhibitors of the Enzyme Carotene Oxygenase*

Positions and Employment

2002 – 2005 Postdoctoral Fellow, The Scripps Research Institute, La Jolla, CA
2005 – Present Assistant Professor, Department of Chemistry, University of South Florida, Tampa, FL

Honors

2002 Ph.D. Summa Cum Laude
2003 Swiss National Science Foundation Postdoctoral Fellowship
2003 Novartis Foundation (formerly the Ciba-Geigy Jubilee Foundation), Postdoctoral Fellowship
2004 Swiss National Science Foundation Postdoctoral Fellowship

Research Summary

- The research interests of the Manetsch laboratory represent a well-balanced blend of organic and biological chemistry, addressing in particular modern aspects of medicinal chemistry. The research focuses mainly on lead discovery and optimization using synthetic chemistry in close conjunction with liquid chromatography with mass spectrometry (LC-MS) and molecular modeling. The Manetsch laboratory develops straightforward strategies for fragment-based lead discovery and optimization using the protein of interest to assemble its own high-affinity bidentate ligand from a library of complimentary reacting fragments. The developed lead discovery methods are currently applied for the discovery of therapeutic agents targeting cancer, malaria and infectious diseases.
- The second research pillar of the Manetsch laboratory comprises the development of chemical tools to label and identify specific proteins in complex mixtures or entire proteomes. Currently, the Manetsch laboratory is developing various probes to investigate proteins related to cell-cell communication and energy metabolism.
- Current Research Group: two postdoctoral researchers (Dr. Niranjan Namelikonda, Dr. David Flanigan), eight graduate students (Richard Matthew Cross, Sameer Kulkarni, Arun Babu Kumar, Shikha Mahajan (co-advised by Professor David Merkler, Department of Chemistry, University of South Florida), Jordany Maignan Andrii Monastyrskyi, Katya Nacheva, Kurt Van Horn) and nine undergraduate students (Jordan Anderson, Renee Fleeman, Petoria Gayle, Lisa Luong, Anthony Melendez, David Z. Myers, Justin Sargent, Maylene Quiroga, Nicolas Zoumberos)

Editorial activities
Served as referee for *The Journal of Organic Chemistry*, *Combinatorial Chemistry & High Throughput Screening*, *Medicinal Research Reviews* and *Bioorganic and Medicinal Chemistry Letters.*

Teaching Summary (in chronological order)
- October 1998 to October 1999. Teaching assistant in the practical laboratory classes for students in Biochemistry, Biology and Pharmacy at the Institute of Organic Chemistry at the University of Basel (Switzerland)
- Spring 1999, Fall 2001 and Spring 2002. Supervision of three final year undergraduate students during their diploma research projects at the Institute of Organic Chemistry at the University of Basel (Switzerland)
- Fall 2005, Fall 2006, Fall 2007. Teaching of the graduate level course CHM6250/5225 Advanced Organic Chemistry I at the Department of Chemistry at the University of South Florida. Graduate level course with approximately 15 participants
- Spring 2007, Spring 2008, Fall 2008, Spring 2009. Teaching of the undergraduate level course CHM2210 Organic Chemistry I at the Department of Chemistry at the University of South Florida. Graduate level course with 210 participants
- Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009. Coordinating CHM6935 Graduate Seminar program of the Department of Chemistry. Course with 70 participants.

B. PUBLICATIONS (in chronological order)

1) Manetsch R, Zheng L, Reymond MT, Woggon WD, Reymond JL*. A Catalytic Antibody against a Tocopherol Cyclase Inhibitor. Chem Eur J 2004; 10: 2487-2506.

2) Manetsch R, Krasinski A, Radic Z, Raushel J, Taylor P, Sharpless KB, Kolb HC*. In Situ Click Chemistry: Enzyme Inhibitors Made to Their Own Specifications. J Am Chem Soc 2004; 126: 12809-12818.

3) Zheng L, Manetsch R, Woggon WD, Baumann U, Reymond JL*. Mechanistic Study of Proton Transfer in Catalytic Antibody 16E7 by Site-directed Mutagenesis and Homology Modeling. Bioorg Med Chem 2005; 13: 1021-1029.

4) Krasinski A, Radic Z, Manetsch R, Raushel J, Taylor P, Sharpless KB, Kolb HC*. Click Chemistry Screening In Situ: Target-guided Optimization of Acetylcholinesterase Inhibitors. J Am Chem Soc 2005; 127: 6686-6692.

5) Radic Z, Manetsch R, Krasinski A, Raushel J, Yamauchi J, Garcia C, Kolb HC, Sharpless KB, Taylor P*. Molecular basis of interactions of cholinesterases with tight binding inhibitors. Chem-Biol Interact 2005; 157: 133-141.

6) Sharpless KB, Manetsch R*. In Situ Click Chemistry: A Powerful Means for Lead Discovery (Review). Expert Opinion on Drug Discovery 2006; 1: 525-538.

7) Radic Z, Manetsch R, Fournier D, Sharpless KB, Taylor P*. Probing Gorge Dimensions of Cholinesterases by Freeze-Frame Click Chemistry. Chem-Biol Interact 2008; 175: 161-165.

8) Hu X, Sun J, Wang H-G, Manetsch R*. Bcl-X_L-Templated Assembly of its Own Protein-Protein Interaction Modulator from Fragments Decorated with Thio Acids and Sulfonyl Azides. J Am Chem Soc 2008; 130: 13820-13821.

C. PATENTS, BOOK CHAPTERS and OTHERS

- Two International Patent Applications on two compound series targeting proteins of the Bcl-2 family as anti-cancer agents were filed February 23, 2009 through the Patent Cooperation Treaty.

- In Situ Click Chemsitry. Book chapter in a book on click chemistry. Editor Valery V. Fokin, Wiley, Fall 2009.

D. INVITED TALKS

1) Mass Spectrometry-Guided Chemistry Approaches Targeting Cancer and Malaria
The Skaggs School of Pharmacy and Pharmaceutical Sciences at the University of California of San Diego
San Diego, California, April 8, 2009

2) Conventional Lead Discovery Approaches and Kinetic Target-Guided Synthesis Targeting Cancer and Malaria
Department of Chemistry and Biochemistry, Florida State University
Tallahassee, Florida, November 20, 2008

3) Quinolones and 1,2,3,4-Tetrahydroacridinols Chemotypes for Malaria Drug Discovery.
American Chemical Society, Florida Section
Orlando, May 8 - 10, 2008

4) Target-Guided Synthesis: A New Approach for Drug Discovery
BioStat International / Molecular Medicine Seminar Series, College of Medicine, University of South Florida
Tampa, March 31, 2006

E. RESEARCH SUPPORT

Current

1)

Agency	FCoE-BITT Seed Grant
Funding Period	06/01/2009-05/31/2010
Role in Project	Co-PI Manetsch (42.5 %)
Other Contributors	PI John Adams (57.5 %) USF College of Public Health
Title	Evaluation of a phosphotyrosine phosphatase as an antimalarial drug target
Total Amount	$75,000 (direct $75,000; no indirect)
Manetsch Lab (direct)	$31,874

2)

Agency	FCoE-BITT Seed Grant
Funding Period	06/01/2009-05/31/2010
Role in Project	Co-PI Manetsch (42.5 %)
Other Contributors	PI Andreas Seyfang (57.5 %) USF College of Medicine, Molecular Medicine
Title	Characterization of Candida Cytochrome b5 Reductase as Pharmacological Target
Total Amount	$75,000 (direct $75,000; no indirect)
Manetsch Lab (direct)	$31,874

3)

Agency	Medicines For Malaria Venture
Funding Period	11/01/08-12/31/2009
Role in Project	PI Roman Manetsch (51 %)
Other Contributors	Co-PI Dennis Kyle (49 %) USF Department of Global Health
Title	4(1*H*)-Quinolone and 1,2,3,4-Tetrahydroacridone Chemotypes for Malaria Drug Discovery
Total Amount	$399,025 (direct $362,750; indirect 10% $36,275)
Manetsch Lab (direct)	$187,899

4)

Agency	Bankhead-Coley Biomedical Research Program, Florida Department of Health
Funding Period	07/01/2008-06/30/2011
Role in Project	PI Manetsch (50 %)
Other Contributors	Co-PI David Merkler (50 %) USF Chemistry
Title	Chemical Tools for Proteomic Profiling
Total Amount	$375,000 (direct $347,222; indirect 8% $27,778)
Manetsch Lab (direct)	$173,610

5) Agency: Johnnie B. Byrd, Sr. Alzheimer's Center and Research Institute
Funding Period: 7/01/2008-12/31/2009
Role in Project: PI Manetsch (50 %)
Other Contributors: Co-PI David Merkler (50 %) USF Chemistry
Title: Adenylomics and Caffeinylomics
Total Amount: $40,793 (direct $31,869; indirect 28% $8,924)
Manetsch Lab (direct): $15,934

6) Agency: James and Esther King Biomedical Research Program, Florida Department of Health
Funding Period: 07/01/2007-06/30/2010
Role in Project: PI Manetsch (95 %)
Other Contributors: Mentor Wayne Guida (5 %) USF Chemistry
Title: Bcl-X_L-templated Assembly of Compounds Modulating Bcl- X_L-Protein Interactions
Total Amount: $375,000 (direct $347,222; indirect 8% $27,778)
Manetsch Lab (direct): $329,859

Expired

1) Agency: FCoE-BITT Seed Grant, GALS007
Funding Period: 05/01/2008-04/30/2009
Role in Project: Co-PI Manetsch (50 %)
Other Contributors: PI David Merkler (50 %) USF Chemistry
Title: Adenylomics
Total Amount: $75,000 (direct $75,000; no indirect)
Manetsch Lab (direct): $37,500

2) Agency: FCoE-BITT Seed Grant, GALS008
Funding Period: 05/01/2008-04/30/2009
Role in Project: PI Manetsch (51 %)
Other Contributors: Co-PI Dennis Kyle (49 %) USF Department of Global Health
Title: SAR Study of Quinolones and 1,2,3,4-Tetrahydroacridinols for the Development of Novel Chemotypes Targeting Atovaquone Resistant Malaria Parasites
Total Amount: $75,000 (direct $38,000; no indirect)
Manetsch Lab (direct): $38,000

3) Agency: Interdisciplinary Research Development Grant, University of South Florida
Current Status: expired
Funding Period: 03/01/2006-02/29/2008
Role in Project: PI Manetsch (33.3 %)
Other Contributors: Co-PIs Edwin Rivera (33.3 %) USF Chemistry and Van Olphen (33.3 %) USF Center for Biological Defense
Title: Development of Novel Antiviral Compounds Targeting Non-structural Protein 1
Total Amount: $50,000 (direct $50,000; no indirect)
Manetsch Lab (direct): $16,667

4) Agency: American Cancer Society Institutional Grant Program, Cycle 20, Fall 2005
Current Status: expired
Funding Period: 04/01/2006-03/31/2007
Role in Project: PI Manetsch (100 %)
Other Contributors: None
Title: Bcl-X_L-templated Assembly of Compounds Modulating Bcl-X_L
Total Amount: $20,000 (direct $20,000; no indirect)
Manetsch Lab (direct): $20,000

5)	Agency	USF Health Office of Research
	Current Status	expired
	Funding Period	02/06-01/07
	Role in Project	Co-PI Manetsch (33.3 %)
	Other Contributors	Co-PIs Edwin Rivera (33.3 %) USF Chemistry and PI Van Olphen (33.3 %) USF Center for Biological Defense
	Title	Development of Novel Antiviral Compounds against Influenza
	Total Amount	$19,994 (direct $19,994; no indirect)
	Manetsch Lab (direct)	$6,665