Introducing our AUTHORS

Michaela Wendeler

Image courtesy of Vitaly Boyko.

Current position: National Institutes of Health, National Cancer Institute, HIV Drug Resistance Program, Postdoctoral Visiting Fellow with Dr. Stuart F. J. Le Grice
Education: University of Bonn, Germany, *Diplom* (equivalent to M.S.) in chemistry, 1998; Ph.D. in biochemistry with Professor Konrad Sandhoff, 2004
Nonscientific interests: Music, sports, yoga

My research focuses on protein–protein and protein–ligand interactions relevant to the viral life cycle and potential therapeutic approaches. For HIV-1, the RNase H activity is indispensable for virus replication and represents an important, as yet underexplored, drug target. In this article, we describe the vinylogous ureas as a novel class of potent RNase H inhibitors. We combine biochemical analyses with kinetic studies, natural and unnatural amino acid mutagenesis, and mass spectrometric protein footprinting. We show that these inhibitors act by a mode different from that of previously reported antagonists and demonstrate that pockets outside the catalytic center can be exploited as drug binding sites. (Read Wendeler's article on p 635.)

Fang Yi

Image courtesy of Ruijun Zhai.

Current position: Johnson & Johnson, Research and Development, Research Scientist
Education: Peking University, B.S. in applied chemistry, 1996; University of North Carolina, Chapel Hill, Ph.D. in biochemistry and biophysics with Profs. Marshall Edgell and Gary Pielak, 2004; Yale University, Department of Molecular Biophysics and Biochemistry, Postdoctoral Fellow with Prof. Lynne Regan, 2004–2008
Nonscientific interests: Reading, watching movies, hiking

I am interested in understanding protein-protein interactions and their biological significance using multidisciplinary approaches. My postdoctoral research focused on developing a new class of small molecule inhibitors of Hsp90 by disrupting its co-chaperone interactions. Hsp90 has been validated as an anticancer drug target because of its essential role in maintaining the stability and function of many oncogenic proteins. In our article, we report the identification and characterization of a structural class of small molecules, identified using high-throughput screening. These molecules bind specifically to the TPR2A domain of a key Hsp90 co-chaperone named Hsp Organizing Protein (HOP) *in vitro* and inhibit Hsp90 function *in vivo*. This study provides a proof-of-principle case to inhibit Hsp90 function by targeting its co-chaperone interactions. (Read Yi's article on p 645.)

Michael D. Urbaniak

Image courtesy of Allyson Clelland.

Current position: University of Dundee, Division of Biological Chemistry and Drug Discovery, U.K., Postdoctoral Researcher with Prof. Mike Ferguson
Education: University of York, U.K., B.Sc. in chemistry, 1998; University of Sussex, U.K., Ph.D. in chemistry with Profs. S. Caddick and D. Woolfson, 2002
Nonscientific interests: Archery, cycling, baking

I am interested in understanding the molecular aspects of biological processes, the use of chemical biology, and drug discovery for neglected diseases. My current work is focused on the characterization of glycosylphosphatidylinositol (GPI) biosynthetic enzymes in the parasite *Trypanosoma brucei* and their exploitation as drug targets. My article describes the use of a series of synthetic pseudotetrasaccharides to examine molecular recognition by enzymes late in GPI biosynthesis and identifies the first inhibitor of the third α-mannosyltransferase, a genetically validated drug target. I am currently beginning to establish an independent research career characterizing trypanosome kinases and exploiting their potential as drug targets. (Read Urbaniak's article on p 625 and Point of View on p 601.)

Cynthia M. Holsclaw

Image courtesy of Darby Hinshaw.

Current position: University of California, Davis, Section of Molecular and Cell Biology, Ph.D. candidate with Prof. Julie A. Leary
Education: San Francisco State University, B.S. in cell and molecular biology, 2005
Nonscientific interests: Music, origami, beadwork

The focus of my graduate research is to investigate the structural features and the biosynthesis of unique *Mycobacterium tuberculosis* metabolites implicated in the virulence of the pathogen. *M. tuberculosis* is one of a handful of prokaryotes known to produce and excrete sulfated metabolites, a class of molecules that play essential roles in eukaryotic cell–cell communication. One such metabolite has been shown to act as a negative regulator of virulence in the mouse infection model; however, for six years its chemical structure remained elusive. In our study, we employed specialized mass spectrometry to structurally characterize this compound and surprisingly found that this metabolite is a sulfated derivative of the most abundant quinol electron carrier in *M. tuberculosis*. (Read Holsclaw's article on p 619.)

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