

Christophe Biot



Image courtesy of Christophe Biot.

Current position: Assistant Professor at the University of Lille 1, Unit of Structural and Functional Glycobiology

Education: University of Lille 1, Ph.D. in the field of bioorganometallics with Prof. Jacques Brocard, 1998; University of Lille 2, with Dr. Elisabeth-Davioud-Charvet working on the dual drug concept applied to antimalarial therapy, 2000–2001;

Free University of Brussels, with Dr. Marianne Rooman in bioinformatics and molecular modeling, 2001–2004

Nonscientific interests: Involved with a synthesizer-based band

My research interests are focused on the development of new therapies to overcome drug resistance. Pioneered by the group of Gérard Jaouen, bioorganometallic chemistry saw a rapid expansion since the 1990s. This paper highlights our current effort to understand the mode of action of ferroquine (FQ, SSR97193), a new antimalarial drug candidate. It provides insight into the concepts of resistance due to transport mechanisms, which prevent the drugs from reaching their targets. Deciphering the mode of action and mechanism of resistance of FQ in *Plasmodium falciparum* will answer fundamental unresolved questions on the molecular basis of the resistance and can trigger the development of new active drugs based on organometallic chemistry in the future. (Read Biot's article, DOI: 10.1021/cb100322v)

Ye-Jin Eun

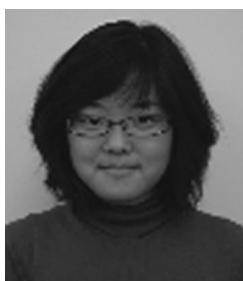


Image courtesy of Robin Davies.

Education: University of Wisconsin-Madison, Prof. Silvia Cavagnero; University of Wisconsin-Madison, Prof. Douglas B. Weibel

Nonscientific interests: Cooking, pottery, practicing Tae Kwon Do, and playing Jang Gu (a traditional Korean drum)

I am interested in diverse topics in biology, including subcellular organization, cell–cell signaling, and cellular responses to the environment. I think that the approach introduced in this *ACS Chemical Biology* article would be useful for studying

some of these topics, particularly cell–cell signaling. Although we have tested single species using our method, it is possible to encapsulate multiple species in agarose microparticles to investigate their interactions. I envision experiments that seek to understand the relationship between neighboring organisms found in nature or to study the possible evolution of interactions among species that do not naturally communicate with each other. (Read Eun's article, DOI: 10.1021/cb100336p)

Weigang Huang

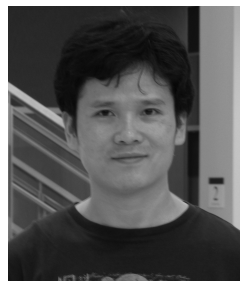


Image courtesy of Weigang Huang.

Current position: University of North Carolina at Chapel Hill, Eshelman School of Pharmacy, Postdoctoral Researcher with Qisheng Zhang

Education: Shandong Normal University, B.S. in Chemistry, 2002; Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Ph.D. in Medicinal Chemistry with Prof. Wei Lu, 2007

Nonscientific interests: Music, Sports and Traveling

My current research is focused on developing chemical reporters and inhibitors to probe the phosphoinositide-related cellular process. The work presented here describes a rationally designed fluorogenic small molecule reporter (WH-15) for mammalian phospholipases C isozymes (PLCs), which regulate the physiological responses of many extracellular stimuli. We demonstrated that WH-15 generated a large signal-to-noise ratio when used in assays with either pure PLCs or cell lysate. Given the key roles of PLCs in cell signaling and diseases, this new reporter will find broad applications in PLCs activity imaging in live cells and high-throughput screening of PLCs regulators. (Read Huang's article, DOI: 10.1021/cb100308n)

Chang-Xin Huo



Image courtesy of Yu-Wei Zhao.

Current position: Peking University, State Key Laboratory of Natural and Biomimetic Drugs, Ph.D. candidate in Chemical Biology with Prof. Xin-Shan Ye

Education: Peking University, B.S. in Pharmaceutical Sciences, 2007; Peking University, M.S. in Chemical Biology with Prof. Xin-Shan Ye, 2009

Nonscientific interests: Basketball, electronic sports

My research interests have been focused on carbohydrate-based drug design. Specifically, my work is aimed at synthesizing the analogues of the tumor-associated carbohydrate antigens (TACAs). The TACAs express on the surface of tumor cells and may serve as targets for cancer immunotherapy. However, as self-antigens, they pose weak immunogenicity and are susceptible to be degraded *in vivo* by glycoside hydrolases. The elaborate analogues are expected to be more immunogenic and may stimulate the production of antibodies capable of recognizing naturally occurring carbohydrates. As mentioned in our article, fluorinated STn-based vaccines can elicit high titers of IgG antibodies that can recognize the natural STn antigen, and more modifications of TACAs are ongoing. (Read Huo's article, DOI: 10.1021/cb100287q)

Khan Maola



Image courtesy of Anna-Margareta Ryden.

Current position: Ph.D. student with Professor Hiroyuki Osada, Chemical Biology Department, RIKEN and Saitama University, Japan

Education: Jahangirnagar University, Dhaka, Bangladesh, B.S. and M.S. in Biochemistry and Molecular Biology, 2005 and 2007

Nonscientific interests: Playing badminton, cricket and watching

movies

My current research in RIKEN is aimed at discovering small molecule protein inhibitors with potential therapeutic usage. We use the chemical library of RIKEN Natural Products Depository (NPDepo) to identify novel small molecule inhibitors. In our present research, we identified a natural product juniferdin that specifically inhibits the functions of protein disulfide isomerase (PDI). PDI is a key player in the fusogenic events of HIV-1 with host cell. Our *in vitro* results show that juniferdin inhibits PDI-mediated reduction of the disulfide bonds of HIV-1 envelope glycoprotein gp120. Additionally, our group is interested in discovering the small molecules that could inhibit cancer. In the near future, I am intended to study directed drug delivery in cancer and other diseases. (Read Maola's article, DOI: 10.1021/cb100387r)

Yue Wang



Image courtesy of Qi Hu.

Current position: Peking University, China, State Key Laboratory of Natural and Biomimetic Drugs, Ph.D. candidate in Chemical Biology with Prof. Xin-Shan Ye

Education: Peking University, China, B.S. in Pharmaceutical Science, 2006; Peking University, China, M.S. in Chemical Biology with Prof. Xin-Shan Ye, 2008

Nonscientific interests: Tennis and photography

My research interest in carbohydrate chemistry began during my undergraduate studies. I was attracted by the biological importance of carbohydrates and the challenges to synthesize them. When synthesizing the analogues of tumor-associated carbohydrate antigen (*e.g.*, Sialyl-Tn) to develop new vaccines, I found that there were many problems in the sialylation and fell in love with it. Sialic acids are found at the nonreducing terminus of many glycolipids and glycoproteins, involved in a wide range of biological processes such as cell–cell interactions, cell differentiation, tumor metastasis, and pathogen–host recognition. Now my work is focused on the development of new sialylation methods and the synthesis of sialic acid-containing oligosaccharides. (Read Wang's article, DOI: 10.1021/cb100287q)

Emine Yalcin



Image courtesy of Emine Bihter Yalcin.

Current position: University of Rhode Island, College of Pharmacy, Department of Biomedical and Pharmaceutical Sciences, Ph.D. student with Prof. Roberta S. King

Education: Gazi University, Faculty of Pharmacy, Ankara, Turkey, B.S. in Pharmacy, 2004; University of Rhode Island, College of Pharmacy, M.S. in Pharmaceutical Sciences

Nonscientific interests: Music, movies, traveling

My research interest focuses on an enzyme family called sulfotransferases. Sulfotransferases play an important role in the metabolism and disposition of drugs as well as endogenous compounds such as hormones, neurotransmitters and steroids. My Master's thesis (presented in this article) was based on two sulfotransferase enzymes found in ticks and how they regulate the transmission of the bacterium that causes Lyme Disease. We were seeking a biochemical pathway that would interfere with the transmission of diseases from tick to human. I use multiple approaches in my research including structural bioinformatics, enzyme kinetics, recombinant protein expression and purification. For my Doctoral research, I am studying other sulfotransferases to elucidate their role in human metabolic diseases such as diabetes, cirrhosis, and steatosis. (Read Yalcin's article, DOI: 10.1021/cb100266g)

Fan Yang

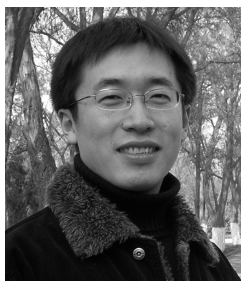


Image courtesy of Fan Yang

Current position: Senior Scientist in Bioduro (Beijing) Inc.

Education: Lanzhou University, B.S., in Chemistry, 2000; Lanzhou University, M.S. in Organic Chemistry, 2003, with Professor Shaobai Li; Peking University, Ph.D. in Medicinal Chemistry, 2007, with Professor Xinshan Ye

Nonscientific interests: Swimming, table-tennis, music, cooking

I am interested in employing organic chemistry to solve problems in biological systems. For example, fluorine chemistry has played an important role in the contemporary drug discovery, while carbohydrate-based vaccine has received extensive study in recent years, especially on improvement of the immunity efficiency of the vaccine. Between the above two fields, we have found a bridge, where we can introduce more robust immunity responds of the carbohydrate vaccine by certain fluorine-substitutions, which was realized by organic synthesis and the following immunity evaluation. (Read Yang's article, DOI: 10.1021/cb100287q)

Xiu-Jing Zheng



Image courtesy of Xiu-Jing Zheng

Current position: Peking University, State Key Laboratory of Natural and Biomimetic Drugs, lecturer and research assistant with Prof. Xin-Shan Ye from 2006—present

Education: Jinzhou Medical College, M.S. in Pharmacology, 2000; Peking University, State Key Laboratory of Natural and Biomimetic Drugs, Ph.D. in Medical Chemistry, 2006

Nonscientific interests: Cooking, swimming, Ping Opera

My research interest in antitumor biology began when I became a Ph.D. candidate with Prof. Xin-Shan Ye in 2003. Antibodies always play an extremely important role for cancer patients to fight against cancer. One of the works of our lab is to modify tumor-associated carbohydrate antigens (TACAs) to break their weak immunogenicity and induce more antibodies. In my study, I exploit the tools of ELISA and FACS to detect the effect of the carbohydrate-based anticancer vaccines. Next, I will detect its effect *in vivo* (namely, detect its effect on mice developed tumor), and moreover, to illustrate the mechanisms of how modified TACAs improve their immunogenicity. (Read Zheng's article, DOI: 10.1021/cb100287q)