

MCEN GRADUATE SEMINAR

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Chemical Approaches for Producing Homogeneous Glycoforms

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Abstract

Access to single glycoforms with defined mature oligosaccharide structures and amino acid sequences are essential to elucidate the molecular mechanisms by which carbohydrates exert various physiological and metabolic functions. Since the natural accessibility of homogeneous entities in this area is severely limited by difficulties in the isolation and purification of specific glycoforms from highly complex mixtures, total chemical synthesis, which allows access to structurally defined glycoproteins, would be of significant value for systematic study of the effects of protein glycosylation on stability and function. In this talk, I will present our recent progress in the development of new strategies and tactics for the chemical synthesis of homogeneous glycoforms. Our target is human erythropoietin (hEPO), a 166-residue conserved protein possessing four sites of glycosylation.

Bio:

Zhongping Tan is an Assistant Professor in the Department of Chemistry and Biochemistry and Biofrontiers Institute at the University of Colorado Boulder. He received his Bachelor's Degree and Master's Degree from Peking University in Beijing, China and received his Ph.D. of Chemical Biology from Columbia University in 2005. Before joining the University of Colorado Boulder in 2011, he had worked as a postdoctoral research fellow at Memorial Sloan-Kettering Cancer Center. His research interest is to study the role of protein glycosylation in the immune system. This is an exciting and challenging research area that is likely to lead to the development of new therapeutic agents and the identification of novel therapeutic targets for the treatment of cancer and infectious diseases.