

Chemical Synthesis of Proteins using Hydrazone-based Chemistry

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Biography



Prof Lei Liu received BS from University of Science and Technology of China in 1999. He obtained PhD in 2004 from Columbia University under the supervision of Prof Ronald Breslow. He went to Scripps Research Institute to conduct postdoc research in the laboratory of Prof Chi-Huey Wong from 2004 to 2007. He joined Tsinghua University since 2007 and has been working on chemical protein synthesis.

Abstract

Chemical protein synthesis enables the preparation of protein molecules that are difficult to obtain recombinantly. These proteins can be used as protein probes for cell biology, protein samples for structural biology, protein reagents for drug development, and protein catalysts for synthetic biology. We have been working on methods to enable more efficient chemical protein synthesis and have been developing particular method systems based on protein hydrazides as synthetic intermediates. We are hoping to solve the problem of making 100kD proteins from chemical synthesis. We are also actively applying chemically synthesized proteins to biochemistry studies and drug development.