

High-resolution Crystal Structure of Functional Nucleic Acids and Their Implications

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Abstract

Riboswitches are regulatory segments of a messenger RNA molecule that binds a small molecule, resulting in a change in the production of the proteins encoded by the mRNA. Ribozymes, on the other hand, are RNA molecules that can catalyze chemical reactions. Our recent work has elucidated the structures of multiple riboswitches and ribozymes. This presentation will introduce our research concerning methyltransferase ribozymes. I will discuss how we determined the structures, elucidated their mechanisms, and further explored their potential applications.

I will also introduce ongoing research in our lab on the structure and function of DNA aptamers, which have not yet been published.

Biography

Lin Huang is a Principal Investigator at Sun Yat-Sen Memorial Hospital, Sun Yat-Sen University. He obtained his PhD degrees from Wuhan University and the National Institute of Biological Sciences (Beijing) in 2010, followed by postdoctoral training at the University of Dundee in the United Kingdom. In 2019, he established a laboratory at Sun Yat-Sen Memorial Hospital and was recognized with the "Hundred Talents Program" award for outstanding young and middle-aged talents by Sun Yat-Sen University. Subsequently, in 2022, he was selected for the "Pearl River Talent Program" - Young Elite Talent Project by Guangdong Province, and in 2023, he was chosen for the National High-level Youth Talent Project. Over the past two years, he has authored multiple articles as a corresponding author, including publications in *Nature Chemical Biology* and *Nucleic Acids Research*.