

## **Application of NMR for the Biomolecular Research: from Peptide Structure Analysis to NMR Metabolomics**

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Nuclear magnetic resonance (NMR) is a spectroscopic method that utilizes the magnetic properties of atomic nuclei contained in molecules, such as hydrogen and carbon. It is employed as an analytical technique in a wide range of life science fields, including the analysis of the three-dimensional structure, motion, and interaction of macromolecules such as proteins, as well as the structural analysis of low-molecular organic compounds.

As a technical basis, sample preparation by recombinant production of proteins and peptides is a very important technology. In this seminar, I would like to introduce our approach to producing stable isotope-labeled antimicrobial peptides by genetic recombination, avoiding toxicity to recombinant hosts. I will also introduce our recent work on NMR metabolomics, a technique applied to the analysis of mixtures of low molecular compounds such as metabolites.

