

Publication

4D solid-state NMR for protein structure determination

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 1171035

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Year 2012

Title 4D solid-state NMR for protein structure determination

Journal Physical Chemistry, Chemical Physics

Volume 14

Number 15

Pages / Article-Number 5239-46

Solid-state NMR offers the chance to extend structural studies to proteins that are otherwise difficult to study at atomic resolution, such as protein fibrils, membrane proteins or poorly diffracting crystals. As two-dimensional spatial correlation NMR spectra of proteins suffer from severe resonance overlap, we analyze in this perspective article the potential of higher-dimensional (3D and 4D) proton-detected experiments, which have an increased number of identifiable and assignable distance restraints for solid-state structural studies. We discuss practical considerations for the NMR measurements and the preparation of suitable protein samples and show results of structure calculations from 4D solid-state NMR spectra.

Publisher Royal Society of Chemistry

ISSN/ISBN 1463-9076 ; 1463-9084

edoc-URL <http://edoc.unibas.ch/dok/A6002729>

Full Text on edoc No;

Digital Object Identifier DOI 10.1039/c2cp23872a

PubMed ID <http://www.ncbi.nlm.nih.gov/pubmed/22402636>

ISI-Number WOS:000301957900024

Document type (ISI) Journal Article