

Spectroscopic approaches to resolving ambiguities of hyper-polarized NMR signals from different reaction cascades - DTU Orbit (08/11/2017)

Spectroscopic approaches to resolving ambiguities of hyper-polarized NMR signals from different reaction cascades

The influx of exogenous substrates into cellular reaction cascades on the seconds time scale is directly observable by NMR spectroscopy when using nuclear spin polarization enhancement. Conventional NMR assignment spectra for the identification of reaction intermediates are not applicable in these experiments due to the non-equilibrium nature of the nuclear spin polarization enhancement. We show that ambiguities in the intracellular identification of transient reaction intermediates can be resolved by experimental schemes using site-specific isotope labelling, optimised referencing and response to external perturbations.

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Authors: Jensen, P. R. (Intern), Meier, S. (Intern)

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