

**18/09/2014**

TUESDAY

start 14.00Seminar room 1.32, pavilion A11
University campus BohuniceCEITEC STRUCTURAL
BIOLOGY SEMINAR
SERIES*You are cordially invited to the lecture***„Amyloid aggregates and large soluble
protein complexes“***delivered by***Bernd Reif**

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Abstract:

Perdeuteration and back-substitution of exchangeable protons in microcrystalline proteins in combination with recrystallization from D₂O containing buffers reduces ¹H, ¹H dipolar interactions such that amide proton line widths on the order of 20 Hz are obtained (Chevelkov et al., 2006). Aliphatic protons are either accessible via specifically protonated precursors or by using low amounts of H₂O in the bacterial growth medium (Asami et al., 2010). This labeling scheme is applied to amyloid aggregates like fibrils formed by the Alzheimer's disease β -amyloid peptide (A β) (Linser et al., 2011). We present data on solid-state NMR studies of drug induced A β aggregates focussing in particular on the interactions between A β and the polyphenolic green tea compound epigallocatechin-gallate (EGCG). We show that MAS solid-state NMR techniques are applicable for the structural characterization of large soluble protein complexes (Mainz et al., 2009; Mainz et al., 2013), in case the tumbling correlation time exceeds the rotor period. Experimental results are presented for the small heat shock protein α B crystallin (600 kDa) as well as for the 20S proteasome core particle in complex with its 11S activator (1.1 MDa).

References

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- Chevelkov V, Rehbein K, Diehl A & Reif B (2006) Angew Chem Int Ed 45: 3878-3881.
- Linser R, Dasari M, Hiller M, Higman V, Fink U, Lopez del Amo J-M, Handel L, Kessler B, Schmieder P, Oesterhelt D, Oschkinat H & Reif B (2011) Angew Chem Int Ed 50: 4508-4512.
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