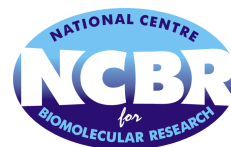




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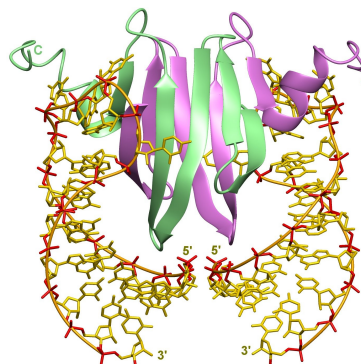


Invitation to

**Special NCBR seminar, Wednesday June 10, 2009, 11 am  
Room A9-316, MU campus library**

## Mario Schubert

Institute of Molecular Biology and Biophysics  
Swiss Federal Institute of Technology (ETH) Zurich, Switzerland



## Structure determination of protein-RNA complexes and glycoproteins

### *Past experience:*

**Berlin:** development of new methods in Protein NMR, especially in regard to automated assignment, in particular amino acid type-selective 2D experiments using MUSIC (multiplicity selective in-phase coherence transfer) techniques; identification of cis peptide bonds in proteins based on chemical shifts; assignment of native bacteriorhodopsin in detergent micelles

**Vancouver:** using NMR techniques to pin down how enzymes work; expression, purification and NMR structure calculation of the S1 domain of RNase E, structure determination by X-ray crystallography, RNA and DNA binding studies; probing the electrostatic interactions in the beta-(1,4)-glycosidase CeX from *Cellulomonas fimi*

**Zurich:** Protein solid state NMR

### *Current interests:*

Structure of RsmE in complex with a mRNA fragment. RsmE is a member of the CsrA family of proteins found in bacteria. We studied RsmE from the soil beneficial *Pseudomonas fluorescens*. RsmE represses translation of *hcnA* mRNA which encodes for HCN synthetase.

Using segmental labeling of the glycan and the protein component by in vitro glycosylation, we developed a novel method of NMR structural determination of glycoproteins. Highly homogeneously glycosylated proteins in milligram amounts can be obtained. This allowed the determination of the structure of an N-linked glycoprotein from *Campylobacter jejuni*.