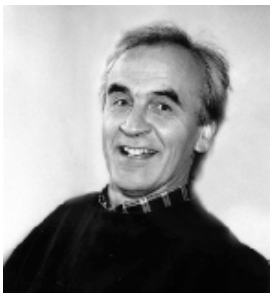
Bernhard Dobberstein



Dr. rer. nat. Universität Bonn
Postdoc: Rockefeller University, New York
Group leader EMBL Heidelberg
Since 1993 Professor at ZMBH Universität Heidelberg

Protein Targeting to the ER and Intracellular Sorting

Current Research

Protein translocation across the membrane of the endoplasmic reticulum (ER) involves cytosolic chaperones, docking receptors, a translocation channel (translocon) and in some cases a "translocation motor" which drives the actual translocation (for review see Schatz and Dobberstein, 1996, Science, 271, 1519-1526). Once in the ER, proteins are folded, modified and - after a quality control - packed into vesicles and transported to the Golgi complex and the trans-Golgi network. From there they can either be further transported to the plasma membrane or to organelles of the endosomal system. A major focus of the work of the group is:

- the analysis of mechanisms involved in targeting proteins to the ER membrane and in their translocation across or insertion into this membrane.
- the control and regulation of protein translocation
- the biosynthesis and intracellular sorting of the invariant chain of MHC class II molecules.

Future Projects and Goals

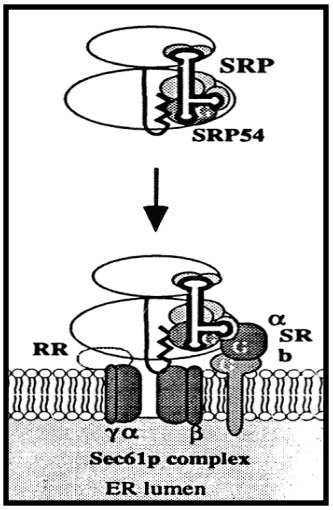
- Characterisation of the function of the 68 and 72 KDa proteins of SRP.
- Identification of alternative functions of signal sequences and their fragments
- Analysis of mechanisms that determine the multiple topologies of prion protein in the ER membrane.
- Analysis of the role of RAMP 4 in regulating protein modification at the translocon

Selected Publications

- Bacher et al. (1999). The ribosome regulates the GTPase of the β-subunit of the signal recognition particle receptor. J. Cell Biol. 146:723-730.
- Schröder et al. (1999). Control of glycosylation of MHC class II-associated invariant chain by translocon-associated RAMP4. EMBO J. 18:4804-4815.
- Holscher et al. (2001) Prion protein contains a second ER targeting signal located at ist C terminus. J. Biol. Chem. In press
- Martoglio and Dobberstein (1998) Signal sequences: more than just greasy peptides, TICB 8, 410-415.
- Martoglio and Dobberstein (1996) Snapshots of membrane - translocating proteins TICB 6, 142 - 147.

Contact:
Bernhard Dobberstein
ZMBH
Im Neuenheimer Feld 282
69120 Heidelberg
Germany

Tel: - 49 - 6221 - 54 6825
Fax: - 49 - 6221 - 54 5892
E-mail: dobberstein@zmbh.uni-heidelberg.de



Transport of protein across the membrane of the ER