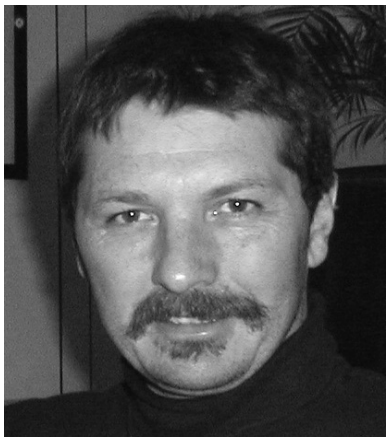
Ed Hurt

PhD 1984 Regensburg University; 1984-1987 postdoctoral work at the Biocenter Basel, Switzerland; 1987-1995 Group Leader at EMBL; since 1995 Professor in Biochemistry at the University of Heidelberg.



Nucleocytoplasmic Transport Across the Nuclear Pores

Current Research

The nuclear pore complex is one of the largest structural organelles within the eukaryotic cell. About 30 individual nucleoporins constitute the yeast NPC. About half of these nucleoporins were identified in my laboratory by genetic and biochemical methods. Several nucleoporins were isolated in stable association with each other and thus represent sucomplexes of the nuclear pore complex. The Nup84p complex composed of six subunits has functions both in pore biogenesis and in mRNA transport processes. By a genetic screen using a mutant of the Nup84p complex, we have found the Mex67p/Mtr2p complex and its mammalian TAP/p15 counterpart, and shown that these complexes act as a shuttling receptor for nuclear mRNA export.

Projects for a doctoral thesis

1. Study the mechanism of nuclear mRNA export. Our model system consists of the essential and evolutionary conserved mRNA exporter complex, the Mex67p/Mtr2p heterodimer, which is both linked to nucleoporins and upstream factors involved in pre-mRNA biogenesis.
2. Study the mechanism of ribosomal export. We have isolated 20 *rix* (**ri**bosomal e**x**port) mutants. The genes of these *rix* ts mutants are currently cloned. By this way, one can identify the factors involved in ribosomal subunit export from the nucleus into the cytoplasm.
3. Reconstitution of nuclear pore proteins in NPC subcomplexes and determination of their structure and interaction with shuttling transport receptors

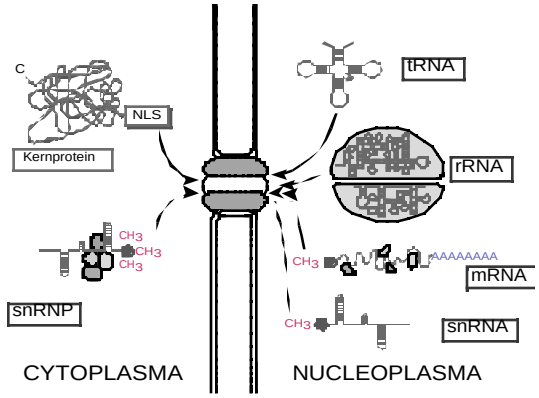
Selected Publications

S. Siniossoglou, C. Wimmer, M. Rieger, V. Doye, H. Tekotte, C. Weise, S. Emig, A. Segref and E. C. Hurt: A Novel Complex of Nucleoporins which Includes Sec13p and a Sec13p Homologue is Essential for Normal Nuclear Pores
Cell **84**, 265-275 (1996).

E. Hurt, S. Hannus, B. Schmelzl, D. Lau, D. Tollervey and G. Simos: A Novel *In Vivo* Assay Reveals Inhibition of Ribosomal Nuclear Export in Ran-Cycle and Nucleoporin Mutants
J. Cell Biol. **144**, 389-401 (1999).

K. Sträßer, J. Bassler and E. Hurt: Binding of the Mex67p/Mtr2p Heterodimer to FXFG-, GLFG-, and FG-Repeat Nucleoporins is Essential for Nuclear mRNA Export
J. Cell Biol., **150**, 695-706 (2000).

Katja Sträßer and Ed Hurt: A Non-Shuttling Nuclear RNA Annealing Protein, which Directly Interacts with Mex67p, is Essential for mRNA Export
EMBO J. **19**, 420-428 (2000).Z. Zhou, M. Luo, K. Sträßer, J. Katahira, E. Hurt and R. Reed: The protein ALY kinks pre-messenger-RNA splicing to nuclear export in metazoans
Nature, **407**, 401-405 (2000).



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