

COVER

Model of the ferredoxin (Fdx) of the salt-loving archaeon Halobacterium salinarum. Unlike ferredoxins from other organisms, H. salinarum Fdx contains an additional acidic domain required for proper folding of the protein at high salt concentrations. Such acidic insertions may play a more general role in the fast adaptation to an extreme environment, as suggested by Bianca-Lucia Marg in her article »Structure and halophily of an archaeal ferredoxin« on pages 50-53.

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3 20 years on
65 Events, Imprint

RESEARCH

- 5 *Rainer Jaenicke, Reinhard Sterner*
Protein design at the crossroads of biotechnology, chemistry, theory and evolution – 86th International Titisee Conference
Natural proteins have an enormous potential for structural and functional improvements. However, many early attempts to tailor proteins by rational design were disappointing. Novel techniques of directed protein evolution currently complement rational protein design. The 86th ITC brought together scientists from various experimental and theoretical fields to discuss recent developments and novel approaches.
- 11 *Miklos Toth*
Search for novel mechanisms of epileptogenesis – the role of translational control via RNA-binding proteins
Epilepsy is a heterogeneous disorder caused by a multitude of pathomechanisms. Jerky and the fragile X mental retardation protein (FMRP), two mRNA-binding proteins, are involved in certain epileptic seizures in mice and man respectively. Jerky is also the first mammalian helix-turn-helix protein to be discovered which binds RNA as well as DNA. Data suggest that some forms of epilepsy are caused by the altered translation of specific sets of genes.
- 16 *Bärbel Raupach, Sandra Sousa, Roberto Kolter, Pascale Cossart, Jean-Marc Reyrat*
Molecular basis of bacterial virulence and survival – Spetsai Summer School 2002
Pathogens have developed a plethora of strategies to infect their hosts and ensure survival within them and in hostile environments. Raupach et al. describe how, for example, bacteria causing tuberculosis and plague or food-borne infections such as salmonellosis and listeriosis manipulate the cell's machinery to their own advantage.

SCIENCE

- 23 *Gerrit Hohendorf, Maike Rotzoll, Paul Richter, Wolfgang Eckart, Christoph Mundt*
The victims of the National Socialist »T4« euthanasia programme – preliminary results from the analysis and interpretation of patient files
In 1990, nearly 30,000 previously unknown records of patients in psychiatric asylums murdered in the 1940/41 »T4 Aktion« were found in the central archives of the secret service of the former German Democratic Republic (GDR). Their systematic analysis will help to clarify to what extent eugenic and economic considerations motivated the killings. Hohendorf et al. also provide a brief survey of the developments in historical research on Nazi »euthanasia«.

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