



COVER

Adelié penguin (*Pygoselis adelidae*) in the vicinity of McMurdo, the American research station in the Antarctic. For research in the Antarctic and cold adaptation strategies of cells and molecules, see the article by Karin Römisch on pages 216-221. (Photograph by Tom Matheson, Cambridge, UK)

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Transcription, DNA repair and regulation of histones appear to be connected and orchestrated by ubiquitination, i.e. the covalent modification of proteins by one or more moieties of the 76-amino-acid polypeptide ubiquitin.
- 216 Karin Römisch
How to survive extreme cold. Adaptation strategies of cells and molecules
Organisms ensure survival below or near freezing point by producing antifreeze glycopeptides to prevent freezing of fluids and subsequent damage to cell membranes, while enzymes harbour characteristic amino acid changes to ensure protein flexibility. At low temperatures, uptake and transport of oxygen is no longer a limiting factor and some fishes can do without haemoglobin and myoglobin.

PROJECTS

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terial infections • Dynamical processes in neocortical neurons observed *in vivo* using two-photon microscopy • Genome-wide analysis of the target genes of TCF1/HNF1 α and TCF2/HNF1 β • Functional proteomics of SMN and related protein complexes using siRNA technology • The role of GTPases in regulating the establishment of neuronal polarity • Mechanisms regulating the ubiquitin protein ligase RLIM • Characterization of Vo-trans complexes, potential components of the vacuolar membrane fusion pore

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