RESEARCH HIGHLIGHTS
528 Our choices from the recent literature

NEWS AND VIEWS
530 G-protein signaling: A switch saves B12 radical status
Tetsuo Toraya
Article p535

531 Transporters: A yeast ABC interactome primer
Brian C Monk
Article p565

533 Immunology: Cytosolic DNA sensing unraveled
Daniel Panne

ARTICLES
535 A switch III motif relays signaling between a B12 enzyme and its G-protein chaperone
M Lofgren, D Padovani, M Koutmos & R Banerjee

Heterotrimeric G proteins contain a switch III motif that regulates enzyme function. Structural and biochemical studies now identify a similar switch III loop in a nonheterotrimeric G-protein chaperone that explains the debilitating effects of mutations linked to methylmalonic aciduria.

N&V p530
The hepatitis B virus preS1 domain hijacks host trafficking proteins by motif mimicry

Structural and thermodynamic characterization of the interaction between the intrinsically disordered HBV protein preS1 and the human adaptor protein γ2-EAR indicates that the viral protein imitates host cell interaction motifs to gain access to the cellular trafficking system.

Covalent and allosteric inhibitors of the ATPase VCP/p97 induce cancer cell death

The VCP ATPase has been linked to cancer, but the lack of well-defined, selective inhibitors has limited further investigation. A million-molecule screen now identifies a covalent inhibitor as well as an allosteric inhibitor that may freeze the enzyme in an ADP-bound conformation.

Oxysterol binding to the extracellular domain of Smoothened in Hedgehog signaling
D Nedelcu, J Liu, Y Xu, C Jao & A Salic

An inhibitor of oxysterol-induced Smoothened activation defines a 20-OHC binding site in the extracellular domain of this essential component of the Hedgehog signaling pathway.

Mapping the functional yeast ABC transporter interactome

Mapping the yeast ABC transporter interactome suggests functional significance of transporter-transporter interactions and also shows function of some transporters in zinc homeostasis.

N&V pS31
573 Pyrones as bacterial signaling molecules
A O Brachmann, S Brameyer, D Kresovic, I Hítkova, Y Kopp, C Manske, K Schubert, H B Bode & R Heermann

LuxR receptor and LuxI synthase homologs coordinate quorum sensing in several bacterial species. Investigations of a LuxR family member that is missing a LuxI partner define a pheromone signaling circuit that coordinates cell clumping based on recognition of its newly discovered ligands, the photopyrones.

579 Small-molecule modulation of Wnt signaling via modulating the Axin-LRP5/6 interaction
S Wang, J Yin, D Chen, F Nie, X Song, C Fei, H Miao, C Jing, W Ma, L Wang, S Xie, C Li, R Zeng, W Pan, X Hao & L Li

A small-molecule activator of Wnt/β-catenin signaling acts by binding a negative regulator of β-catenin, Axin, leading to a conformational change that promotes association of Axin with LRP6.

586 Proteostasis of polyglutamine varies among neurons and predicts neurodegeneration
A S Tsvetkov, M Arrasate, S Barmada, D M Ando, P Sharma, B A Shaby & S Finkbeiner

Monitoring the half-life of mutant huntingtin protein reveals how specific neurons are more susceptible to its toxic effects and to Huntington’s disease.