## Contents

### ARTICLES

#### Biosynthesis and Biodegradation

**XPC promotes MDM2-mediated degradation of the p53 tumor suppressor**

Jing Yan Krzeszinski, Vitnary Choe, Jia Shao, Xin Bao, Hai Li Cheng, Shiwen Luo, Keke Huo, and Hai Rao

XPC binds MDM2 ubiquitin ligase and participates in the MDM2-mediated p53 degradation. Furthermore, XPC overexpression stimulates p53 degradation following UV irradiation. Combined, the results suggest a key role of XPC in p53 degradation.

#### Cell Biology of Disease

**Nel positively regulates the genesis of retinal ganglion cells by promoting their differentiation and survival during development**


Nel is a thrombospondin-1–like extracellular glycoprotein that is predominantly expressed in the vertebrate nervous system. It stimulates the genesis of retinal ganglion cells (RGCs) by promoting their differentiation and survival during development and is essential for production of proper numbers of RGCs.

#### Cell Interactions

**ARP2/3-mediated junction-associated lamellipodia control VE-cadherin–based cell junction dynamics and maintain monolayer integrity**

A. A. Taha, M. Taha, J. Seebach, and H.-J. Schnittler

The ARP2/3 complex controls junction-associated intermittent lamellipodia (JAIL), which trigger VE-cadherin adhesion and dynamics. JAIL formation maintains paraendothelial barrier function under physiological conditions and depends on the local VE-cadherin concentration.

#### Cytoskeleton

**Effects of tubulin acetylation and tubulin acetyltransferase binding on microtubule structure**


Acetylation of α-tubulin is uniquely located on the microtubule lumen and away from most MAPs. It does not affect microtubule structure and must affect only proteins that bind directly to the lumen. αTAT1 can interact with the tubulin C-termini, which could facilitate access to its luminal site and make it responsive to other modifications.

#### A Highlights from MBoC Selection

**Distinct roles of cell wall biogenesis in yeast morphology as revealed by multivariate analysis of high-dimensional morphometric data**

H. Okada, S. Ohnuki, C. Roncero, J. B. Konopka, and Y. Ohy

To better define how cell wall structure affects morphogenesis, the morphology of yeast cells was analyzed quantitatively after treatment with the three drugs that inhibit different aspects of cell wall synthesis. These drugs induced both similar effects, including broader necks and increased morphological variation, and distinct effects.

**Centrosome-dependent asymmetric inheritance of the midbody ring in Drosophila germ line stem cell division**

V. Salzmann, Cuie Chen, C.-Y. A. Chiang, A. Tiyaboobchonai, M. Mayer, and Y. M. Yamashita

The midbody ring (MR) is asymmetrically segregated during asymmetric divisions of germ line stem cells (GSCs) in Drosophila. Male GSCs, which inherit the mother centrosome, exclude the MR, whereas female GSCs, which inherit the daughter centrosome, inherit the MR. Moreover, stem cell identity correlates with the mode of MR inheritance.
Membrane Trafficking

ESCR T regulates surface expression of the Kir2.1 potassium channel
The Kir2.1 potassium channel is targeted by endoplasmic reticulum–associated degradation in yeast. To identify other Kir2.1 quality control factors, a novel yeast screen was performed. ESCR T components were among the strongest hits from the screen. Consistent with these data, ESCR T also regulates Kir2.1 stability in human cells.

Lipid droplet autophagy in the yeast Saccharomyces cerevisiae
T. van Zutphen, V. Todde, R. de Boer, M. Kreim, H. F. Hofbauer, H. Wolinski, M. Veenhuis, I. J. van der Klei, and S. D. Kohlwein 290–301
Lipid droplet formation and degradation are pivotal processes in preventing lipotoxicity and providing energy sources and signaling molecules. This is the first demonstration of lipid droplet turnover in yeast by microautophagy. Lipophagy is distinct from ER-phagy, mitophagy, and pexophagy and contributes to neutral lipid homeostasis by vacuolar lipolysis.

Nuclear Functions

Smc5/6-mediated regulation of replication progression contributes to chromosome assembly during mitosis in human cells
The Smc5/6 complex plays a critical role in processing DNA replication and is indispensable for sister chromatid assembly and faithful segregation in mitosis.