IN BRIEF

AGEING

An age-induced switch to a hyper-recombinational state.

McMurray, M. A. & Gottschling, D. E. *Science* **301**, 1908–1911 (2003)

Ageing and cancer are clearly related, but the underlying mechanism is unknown. McMurray and Gottschling studied the correlation between genomic instability and age, and found that aged yeast cells have high rates of loss of heterozygosity (LOH). This age-induced LOH occurs by a switch-like mechanism, which is not affected by extending the yeast's lifespan. In young cells, LOH occurs by reciprocal recombination, whereas LOH is nonreciprocal in old cells and results from increased double-stranded DNA breaks .

CYTOSKELETON

Actin filament uncapping localizes to ruffling lamellae and rocketing vesicles.

Allen, P. G. *Nature Cell Biol.* 12 Oct 2003 (doi:10.1038/ncb1059)

In this paper, the author used fluorescence resonance energy transfer to measure gelsolin dissociation from actin filaments. Gelsolin is a capping protein that, when bound to actin, inhibits filament elongation. One model of regulated actin dynamics requires that barbed filament ends of actin are exposed after regulated dissociation of capping proteins. This paper shows that uncapping occurs in ruffling lamellae and rocketing vesicles — sites where actin is actively assembled — with spatio–temporal properties that are consistent with this model.

UBIQUITYLATION

Proteasome-mediated degradation of p21 via N-terminal ubiquitinylation.

Bloom, J. *et al. Cell* **115**, 71–82 (2003)

It has been thought that p21 (also known as Cip1) — a negative cell-cycle regulator — can be degraded in a ubiquitin-independent manner, because, for example, a p21 mutant lacking all its lysine residues (p21(K0)) is degraded at the same rate as p21 *in vivo*. However, Bloom *et al.* now show that p21 proteolysis is ubiquitin dependent, and that the amino-terminal methionine residue of p21, and therefore p21(K0), can be ubiquitylated *in vivo*.

STEM CELLS

Fusion of bone-marrow-derived cells with Purkinje neurons, cardiomyocytes and hepatocytes.

Alvarez-Dolado, M. *et al. Nature* 12 Oct 2003 (doi:10.1038/nature02069)

Several recent reports have indicated that bone-marrow-derived stem cells can generate Purkinje neurons, hepatocytes and cardiomyocytes, but whether this is the result of transdifferentiation or cell fusion remains controversial. The authors of this paper used a Cre/lox-recombination-based method that can detect cell fusion to show that, after bone-marrow transplantation, multinucleate cells were present in liver, cardiac muscle and neurons. There was no evidence that