IN BRIEF

GENOME INSTABILITY

An autophagy-independent role for UVRAG

Ultraviolet irradiation resistance-associated gene (UVRAG) is a tumour suppressor gene known to activate autophagy. Here, Zhao *et al*. identify an autophagy-independent role for UVRAG in chromosomal stability. First, UVRAG was shown to interact with the DNA-dependent protein kinase (DNA–PK) complex, which has a central role in the non-homologous end joining (NHEJ) pathway of DNA repair. Interestingly, this interaction was found to promote double-strand break repair in an autophagy-independent manner. Second, the authors observed that UVRAG is targeted to the centrosome by centrosome protein 63. Association of UVRAG with the centrosome was required for centrosome stability and correct chromosome segregation. Thus, the authors propose that the ternary role of UVRAG in autophagy, DNA repair and centrosome stability may explain why it is frequently mutated in cancers.

ORIGINAL RESEARCH PAPER Zhao, Z. *et al*. A dual role for UVRAG in maintaining chromosomal stability independent of autophagy. *Dev. Cell* 26 Apr 2012 (doi:10.1016/j.devcel.2011.12.027)

STEM CELLS

Ready to die fast

Embryonic stem (ES) cells — the integrity of which is crucial for embryonic development — are highly sensitive to DNA damage, but the mechanisms underlying rapid death are unclear. Dumitru *et al*. now show that BAX, a pro-apoptotic member of the B cell lymphoma 2 (BCL-2) family, is maintained in its active form at the *trans*-Golgi network (TGN) of healthy ES cells and is transferred to mitochondria to induce apoptosis following DNA damage. By contrast, in healthy non-ES cells BAX is only found in the cytosol in an inactive conformation and needs to be both activated and transferred to mitochondria in response to apoptotic stimuli. The authors also show that apoptosis after DNA damage in ES cells depends on p53, which is required for the TGN-to-mitochondria translocation of active BAX. Thus, active BAX at the TGN keeps undifferentiated ES cells primed for rapid death.

ORIGINAL RESEARCH PAPER Dumitru, R. *et al*. Human embryonic stem cells have constitutively active Bax at the Golgi and are primed to undergo rapid apoptosis. *Mol. Cell* 3 May 2012 (doi:10.1016/j.molcel.2012.04.002)