nature cell biology

Focus on apoptosis

In this issue of *Nature Cell Biology*, we hope to highlight a few recent developments in the apoptosis field.

Apoptosis is a process of programmed cell death that is important for many biological functions. Until the 1990s, research in apoptosis was essentially descriptive of the morphology of dying cells. Tremendous progress has since been made in our understanding of the molecular mechanisms that underlie apoptosis and its regulation. Furthermore, dysfunction of the apoptotic process has been linked to pathologies, such as cancer and neurodegeneration. In this issue of *Nature Cell Biology,* we hope to highlight a few recent developments in the apoptosis field. In a commentary on page E139, Barbara Conradt discusses how phagocytic cells are not only involved in the clearance of dead cells, but how they can also actively participate in the induction of cell death. Six primary research papers show that in *Drosophila melanogaster,* the *in vivo* induction of cell death by the Reaper, Hid and Grim family of proteins requires the downregulation of the *Drosophila* inhibitor of apoptosis protein, DIAP1. Furthermore, they show that the selective ubiquitination of DIAP1 (which involves the E2 ubiquitin-conjugating enzyme, UBCD1, and a novel ubiquitin-conjugase-related protein, Morgue) and proteasomal degradation contribute to the downregulation of DIAP1. A general shut-down of protein translation induced by Reaper-like proteins may also reduce DIAP1 protein levels. These studies are discussed further in a News and Views article by Barbara Osborne and Tanapat Palaga on pE149. More provocative research is displayed on p462, where Robin Fahraeus and colleagues describe p53/47, an alternative translation product of the tumour suppressor gene p53, and the possible selective functions of p53 and p53/47 in the regulation of cell cycle and apoptosis, respectively. In a News and Views article on pE152, Pier Paolo Pandolfi also discusses recently published data investigating the function of the de-ubiquitinating enzyme HAUSP in the control of p53 stability.

We are happy to offer free access to this issue for a month (http://cellbio.nature.com), and we have also taken this opportunity to create a focus site on apoptosis (http://cellbio.nature.com/focus/apoptosis). This site will provide links to research and review articles on apoptosis that have been published in past issues of *Nature Cell Biology*, and will be updated on a monthly basis. On this occasion, *Nature Cell Biology* has teamed up with two other journals of the Nature Publishing Group, and links will be provided to *Nature Reviews Molecular Cell Biology*'s June focus issue on apoptosis and to *Cell Death and Differentiation*'s April focus issue, both featuring relevant review material.

We are pleased to acknowledge the financial support of Maxim Pharmaceutical. *Nature Cell Biology* carries sole responsibility for all editorial content and peer review. As always, we welcome feedback on the contents of our focus issue on apoptosis. □