In the news

SOAK UP THE SUN

Tumour suppression by p53 might be related not only to its ability to protect against DNA damage but also to its ability to promote sun tanning, researchers at the Dana Farber Cancer Institute in Boston have reported.

Previous work has shown that α-melanocyte-stimulating hormone (αMSH), which promotes melanin production, is produced from the precursor pro-opiomelanocortin (POMC), and that POMC levels increase when cells are exposed to UV rays. In the March 9 issue of Cell, David Fisher and colleagues show that p53 transcriptionally activates POMC to trigger the activation of this pathway.

Fisher, the study's senior author, noted that "the number one risk factor for melanoma is an inability to tan. This study suggests that p53 … has a powerful role in protecting us against sun damage" (http://www.dfci.harvard.edu, 8 March 2007). Barbara Gilchrest, chair of the Department of Dermatology at Boston University School of Medicine, added: "Once you have that tan, your DNA is better protected for the next time that you're out in the sun," as the nucleus is shielded from UV by melanin (http://www.sciam.com, 9 March 2007).

Understanding the tanning cascade might help prevent skin cancers in people with fair skin. "If we can identify where the block to tanning occurs, we can develop drugs to address that," said Fisher (http://www.boston.com, 9 March 2007).

The research has other interesting implications. This pathway might influence people's desire to spend time in the sun by increasing β-endorphin, an opioid also derived from the POMC precursor. Furthermore, Fisher suggests that this finding could be harnessed to "give people tans without needing the sun" (http://www.sciam.com, 9 March 2007).

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