

Anti-HIV drugs reduce the cause of some forms of vision loss

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A potential new therapeutic use for anti-HIV drugs known as protease inhibitors has been suggested by a team of researchers from Harvard Medical School, Boston, and Inserm U848, France, as a result of their work in a mouse model of retinal detachment.

An important cause of vision loss in many diseases of the eye is the death (by a process known as apoptosis) of nerve cells in the eye (known as photoreceptors) after retinal detachment. In the study, administration of HIV protease inhibitors by mouth markedly decreased photoreceptor apoptosis in the mouse model of retinal detachment.

Mechanistic analysis in mouse retinal cell cultures and in mice expressing decreased amounts of specific proteins established that the HIV protease inhibitors disrupted two molecular pathways that cause apoptotic cell death, both of which affect the cell compartments known as mitochondria.

As the same apoptotic cell death–inducing pathways were shown to be activated in human retinas after retinal detachment, the authors suggest that although the HIV protease inhibitors cannot reattach the retina, they might be of clinical benefit through their ability to prevent the photoreceptor apoptosis that has a central role in vision loss after retinal detachment.

Citation: Joan W. Miller, HIV protease inhibitors provide neuroprotection through inhibition of mitochondrial apoptosis in mice,

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