In the news

INTERFERING WITH HIV

Developing an effective treatment for HIV infection is the 'Holy Grail' for many researchers. New evidence reported in *Cell* (7 August 2008) now shows that HIV infection can be dramatically suppressed in a mouse model using RNA interference.

The authors developed a new method to deliver small interfering RNAs (siRNAs) to silence the expression of three genes specifically in T cells, thereby limiting HIV infection. According to the lead author of the study, Premlata Shankar, "No one has demonstrated before that HIV infection can be stopped *in vivo*, not just in cell lines, but in animals." (*The Independent*, 8 August 2008).

The method involves linking the siRNAs to an antibody that is specific for T-cell-expressed CD7. The siRNA–antibody complex is rapidly internalized after binding to CD7, thereby delivering the siRNAs directly into T cells.

One of the siRNAs targets the surface receptor used by HIV to enter T cells (CCR5), whereas the other two siRNAs suppress viral genes. These siRNAs were delivered to humanized mice, in which the mouse immune system is replaced with human immune cells, allowing them to be used as a model of HIV infection.

"Both prophylactic and therapeutic regimens proved successful. Apparently, the siRNAs kept HIV from entering most T cells, and kept it from replicating when it managed to slip inside," says Shankar (*Nature News*, 7 August 2008).

John Rossi, an expert in RNA-based therapeutics, sees this study as "a nice proof of principle that ... could be developed into a viable therapy." (*ScienceNews*, 7 August 2008). However, more research is needed to "confirm the findings in other animals, tweak the dosage, and tinker with the siRNA delivery vehicle" before progressing to clinical trials, says Shankar (*Biocompare*, 8 August 2008).

Olive Leavy