In the news

BIRD-FLU VACCINE

The highly pathogenic avian influenza virus A subtype H5N1, which has spread from China and Southeast Asia to Europe and Africa, could result in a global pandemic if mutations occur that confer the capacity for person-to-person transmission. Therefore, there is a great need for a suitable vaccine. However, a recent study published in *Proceedings of the National Academy of Sciences* (21 February 2006) indicates that a generic H5N1 vaccine, which has been ordered by the British Government, might not be effective (*Times Online*, 14 February 2006). The avian influenza virus was first identified in Guangdong Province (China) in 1996 and has been in constant circulation in market poultry ever since. It can be carried by apparently healthy migratory birds, and there are distinct regional viral sublineages. The researchers conclude that "The antigenic diversity of viruses currently circulating in Southeast Asia and southern China challenges the wisdom of reliance on a single vaccine for pandemic preparedness." A spokesperson for GlaxoSmithKline, one of the companies developing such a generic vaccine, stated that "We know that the virus will mutate, but we think there will be a lot of value in creating something that acts against H5N1." (*Times Online*, 14 February 2006.)

In another story, the United States Health and Human Services Secretary, Mike Leavitt, has announced that he is ready to make use of new, controversial legislation that gives him the power to protect vaccine manufacturers from liability lawsuits over pandemic influenza vaccines. "If you're a manufacturer, you're likely to not want to move to [trials] without the protection", said Leavitt (*United Press International*, 13 February 2006). Democrats have attacked the plan, which could see companies avoid lawsuits even if they are negligent in safeguarding vaccine purity during manufacturing.

Olive Leavy

IFN α tips the balance towards APOBEC3G

The cytidine deaminase APOBEC3G is a host protein that becomes packaged into HIV virions, where its enzymatic activity induces the degradation of HIV DNA. HIV counters this form of host defence through virion infectivity factor (Vif), which targets APOBEC3G for proteasomal degradation. However, in a report published in *The Journal of Experimental Medicine*, it has now been shown that interferon- α (IFN α) can increase the expression of APOBEC3G by macrophages to such an extent that the effects of Vif are overcome and HIV replication is markedly decreased.

IFN α can inhibit the infection of macrophages by HIV in many ways. So, because IFN α has been shown to induce the expression of an RNA-specific adenosine deaminase, Peng *et al.* set out to determine whether

LYMPHOCYTE DEVELOPMENT

The journey begins for $\alpha\beta$ and $\gamma\delta$ T cells

During T-cell development in the thymus, T-cell progenitors progress through a series of developmental stages, which lead to the generation of two subsets of mature T cells: $\alpha\beta$ T cells and $\gamma\delta$ T cells. But how are

these distinct T-cell lineages generated? Until now, research has been hampered by our inability to distinguish between the earliest developing $\alpha\beta$ and $\gamma\delta$ T cells. Reporting in *Immunity*, Ellen Rothenberg and colleagues identify the cell-surface molecule CD27 as a marker for T-cell progenitors that are beginning to undergo commitment to the $\alpha\beta$ or $\gamma\delta$ T-cell lineages, and they show that these newly emerging $\alpha\beta$ and $\gamma\delta$ T-lineage cells have early differences in dependence on Notch-Delta signalling and have distinct patterns of gene expression.

The authors had previously shown that cell-surface CD27 distinguishes between cells undergoing T- and B-cell development. In this study, they set out to examine CD27 expression at the various stages of T-cell development. At the double-negative 3 (DN3) stage of development — at which cells