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# Mutations keep HIV ahead

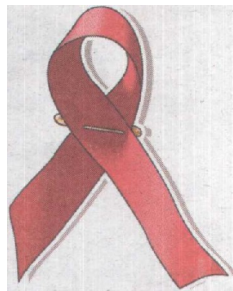
**PARIS:** A team of scientists on Wednesday said the human immunodeficiency virus (HIV) was swiftly evolving to avoid the body's immune defences, a phenomenon that adds to the challenge of crafting an AIDS vaccine.

Mutations in HIV enable it to rapidly sidestep genetic variations that offer a better natural shield against the deadly pathogen, they said in a study released by the journal *Nature*.

"Even in the short time that HIV has been in the human population, it is doing an effective job of evading our best efforts at natural immune control of the virus," said Oxford University researcher Philip Goulder.

"This is high-speed evolution that we're seeing in the space of just a couple of decades."

Goulder's team analysed the genetic codes and viral strain of 2,800 infected people in North America, the Carib-



bean, Europe, sub-Saharan Africa, Australia and Japan.

Their big focus was on so-called human leukocyte antigen (HLA) genes.

These control specialised proteins whose job is to act as a signaller against intruders. The proteins present little pieces of HIV to the body's heavy armour, T cells, which then seek out the virus and kill it.

Since HIV was identified as the cause of AIDS, more than a quarter of a century ago, doc-

tors have learnt that even though no one appears to be naturally immune to the virus, people progress to the full-blown disease at different rates.

Without anti-retroviral drugs, some individuals may develop AIDS as little as a year after infection, while others take as long as two decades.

The span depends largely on inherited luck, for there are variants of HLA genes that are far better at combating HIV than others.

A tiny difference in DNA can make a huge difference in holding back the virus.

Goulder's team came across some bad news. They found that the virus is able to mutate when facing the more successful variants of these genes.

This "escape mutation" is then transmitted on to the viral progeny and handed on to the human population when another person becomes infected. —AFP