



European Medicines Agency
Celebrating ten years – 1995 – 2005

“A Scientific Perspective on the Future of Medicines”
11 March 2005

*Topic: Mandatory therapeutic fields in the centralised
procedure, and scientific/public health challenges for the
future - HIV and Vaccines*

Prof. Luc Montagnier
President, World Foundation for AIDS Research and
Prevention

Luc Montagnier
An update on the research on
Vaccines against HIV/AIDS

Abstract

Despite the decrease in mortality among HIV-positive individuals due to the availability, in developed countries, of new antiretroviral drugs, the development of a protective vaccine for HIV infection remains the only logical long-term solution for this pandemic, because antiretroviral drugs fail to eliminate HIV-infected reservoirs and, therefore, do not cure the patients while prevention by education and information meets some limitation.

After more than 20 years of intensive research, both in academic and pharmaceutical laboratories, many candidate vaccines have been proposed and tested in phase 1 and 2, but very few have reached the phase 3 and those have failed.

There are obvious technical and logistic reasons for this, the most important technical problem being to counteract the strategy evolved by the virus to escape immune defenses.

Recent knowledge acquired on the conformational changes occurring when the protein of the viral envelope binds its receptors at the target cell, allows the design of vaccines inducing antibodies neutralizing a large spectrum of viral strains.

The design of efficacy trials (phase 3) however raises several important ethical issues, not easy to resolve.

Finally, a stepwise approach is probably the best solution: first, test several formulations as therapeutic vaccines, whose efficacy is easy to measure, and then derive a prophylactic vaccine from the best formulation.

Therapeutic vaccines may be given in HIV infected patients after an initial antiretroviral therapy has achieved decrease of the virus load and induced a partial restoration of the immune system. This restoration may be reinforced by giving non specific immunostimulants (antioxidants). Then the immune system will be able to respond to the vaccine. The efficacy of the immunization will be assessed by the lack of virus rebound, after the antiretroviral therapy had been interrupted.