

## THE DISCOVERER OF HUMAN IMMUNODEFICIENCY VIRUS

Compiled by Chris Sails



Dr. Luc Montagnier

**H**uman Immunodeficient Virus (HIV) has generated a huge amount of literature in the relatively short period of time since AIDS was first described. Investigators quickly discovered the aetiological agent of this new and deadly disease, established its main genotypic determinants, and found an effective treatment—an amazing record in the field of virology. With such an enormous amount

of information, which includes several journals devoted exclusively to the virus and its related conditions, the history of HIV is well documented. Luc Montagnier, the discoverer of the human immunodeficient virus will be remembered for ever.

Luc Montagnier was born in 1932 in Chabris, near Tours, France. He studied natural sciences at the University of Poitiers and received his license of sciences from the University of Paris in 1955. In 1960 he qualified for his doctorate in medicine at the same university. Montagnier became research director of the Centre National de la Recherche Scientifique (CNRS) in 1974 and in 1985 professor at the Pasteur Institute.

Luc Montagnier is a French virologist. In 1982 he was asked for assistance with establishing the possible underlying retroviral cause of a mysterious new syndrome, AIDS, by Dr. Willy Rozenbaum, a clinician at the Hôpital Bichat hospital in Paris. Rozenbaum's role was vital, as he had been openly speculating at scientific meetings that the cause of the disease might be a retrovirus, and it was from a lymph node biopsy taken from one of Rozenbaum's patients that the breakthrough was to come.

In the years before the onset of the AIDS epidemic, Montagnier made many significant discoveries concerning the nature of viruses, and contributed to the understanding of how viruses can alter the genetic information of host organisms, thereby significantly advancing cancer research. His investigation of interferon, one of the body's defenses against viruses, also opened avenues for medical cures for viral diseases.

Dr. Montagnier is best known for his 1983 discovery of the human immunodeficiency virus (HIV), which has been identified as the cause of AIDS. This discovery led directly to the development of a test for detecting the presence of HIV in blood samples.

By 1983, this group of scientists and doctors, led by this time by the aforementioned Montagnier discovered the causative virus (Barré-Sinoussi et al., 1983). They gave it the name lymphadenopathy-associated virus, or LAV. A year later a team led by Dr. Robert Gallo of the United States confirmed the discovery of the virus, but they renamed it human T lymphotropic virus type III (HTLV-III) (Popovic et al., 1984). He eventually discovered HIV and encountered international disdain after declaring in 1990 that HIV cannot cause AIDS on its own, but needed a cofactor which he believes is a mycoplasma.

Montagnier's research was conducted at the Pasteur Institute in Paris. The identity of the first group to isolate HIV (which is generally accepted by the mainstream medical and scientific communities to be the underlying cause of AIDS) was for many years the subject of an acrimonious disputed between the French, represented by Dr. Montagnier, and American Dr. Robert Gallo. This is because the striking similarity between the first two human immunodeficiency virus type 1 (HIV-1) isolates Lai/LAV (formerly LAV, isolated at the Pasteur Institute) and Lai/IIIB (formerly HTLV-IIIB, reported to be isolated from a pooled culture at the Laboratory of Tumor Cell Biology (LTCB) of the National Cancer Institute) provoked considerable controversy in light of the high level of variability found among subsequent HIV-1 isolates. Since then, there has been considerable and often acrimonious controversy over the priority for the discovery of HIV, including accusations that Gallo improperly used a sample of HIV produced at the Institut Pasteur. In November 1990, the Office of Scientific Integrity at the National Institutes of Health commissioned a group at Roche to analyse archival samples established at the Pasteur Institute and the Laboratory of Tumor Cell Biology (LTCB) of the National Cancer Institute between 1983 and 1985. They concluded that the origin of the HIV-1 Lai/IIIB isolate discovered by Robert Gallo was the same as that discovered by Montagnier. The two scientists continued to dispute each other's claims until 1987, and it was not until President Mitterrand of France and President Reagan of the USA met that the major issues were ironed out. The scientific protagonists finally agreed to share credit for the discovery of HIV, and in 1986, both the French and the US names (LAV and HTLV-III) were dropped in favour of the new term human immunodeficiency virus (HIV) (Coffin, 1986).

Luc Montagnier is the co-founder of the World Foundation for AIDS Research and Prevention and co directs the Program for International Viral Collaboration. He has received more than 20 major awards, including the Commandeur de la Legion d'Honneur, the Lasker Prize, and the Gairdner Prize.

But in 1992 the scientific community agreed it was Montagnier that should be credited with the discovery.

In 1998, Professor Montagnier expanded his research efforts to the United States by accepting an endowed professorship at Queens College, New York. He is in charge of the Center for Molecular and Cellular Biology, where research efforts are focused on HIV therapeutics and vaccines. Professor Montagnier also continues his research efforts in Paris at both the Pasteur Institute and his World Foundation AIDS Research and Prevention.

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