

The Nobel Prize for Medicine 2008

The Nobel Prize for Medicine this year is shared by the French and German scientists for discovery of the HIV virus, and the role of the human papilloma virus (HPV) in cervical cancer, respectively.

THE FIGHT TO DISCOVER THE AIDS VIRUS

Twenty five years ago, American scientist Antony Gallo and French scientist Luc Montagnier were locked in such a bitter dispute that the then President of the United States Ronald Reagan and French Prime Minister Jacques Chirac had to intervene.

It started when in 1981 a new disease was described in gay men with lymphadenopathy and peculiar infections. The first descriptions of AIDS sparked off explosive research activity to isolate the virus. Dr Luc Montagnier of the Pasteur Institute in Paris and Dr Anthony Gallo of the National Cancer Institute in Washington were neck to neck in the global race.

On January 23, 1983, Montagnier found a suspect virus he called LAV (Lymphadenopathy Associated Virus) and published his findings in May 1983. In July, the Pasteur Institute sent a sample of LAV to Gallo. Another sample of LAV was sent in September, and by December, Gallo's lab was successfully cultivating LAV.

Gallo believed that AIDS was due to a type of HTLV virus and announced in a press conference that he had discovered the cause of AIDS and it was HTLV 3. It turned out that that the pictures he showed were of the LAV virus sent to him by Montagnier. The same day he filed a US patent for a blood test which detects the virus in humans.

The controversy really took off when the US Government refused the French scientists a patent for the blood test but awarded it to Gallo. The Pasteur Institute challenged the patent in court. The

dispute ended in an out of court settlement with a decision to share the credit. Today it is generally agreed that Montagnier's group was the first to identify HIV, although Gallo's group insists it contributed significantly to demonstrating that it causes AIDS.

THE PERSISTENT GERMAN SCIENTIST

In the 1970's Harald zur Hausen from Heidelberg, Germany, hypothesised that the human papilloma virus (HPV) induces cervical cancer, which few could swallow. This was followed by a laborious struggle to prove it. He said if the HPV is oncogenic, its viral DNA must be found integrated into cervical cancer cells. For 10 long years he searched in cervical cancer tissue for the viral genome. A difficult job considering there are 100 HPV types and only a part of the viral genome is integrated. Finally he found the novel viral DNA in cervical cancer cells. In 1983 he discovered the oncogenic HPV 16 and in 1984 he cloned HPV 16 and 18 which can be found in 70% of cervical cancer tissues from all over the world.

Worldwide, the burden of disease due to HPV is enormous. Cervical cancer is the second commonest cancer in women and HPV accounts for 5% of all cancers. Oral, vulval and penile cancers are also linked to HPV. Of the 100 serotypes, 15 predispose women at high risk to cervical cancer. Human papilloma virus can be detected in 99.7% of women with histologically confirmed cervical cancer, affecting some 500,000 women per year. This discovery resulted in the development of the HPV vaccine which can prevent >95% of cervical cancer due to HPV 16 and HPV18. (http://nobelprize.org/nobel_prizes/medicine/laureates/2008/press.html, *The London Free Press 27 October 2008*)

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