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HIV vaccine development strategies to be "flawed," told *Nature Medicine* that he was ambivalent about the issue. While he "recognizes the dangers of moving ahead with human testing," he has "seen how slowly other concepts are proceeding." He acknowledges that the "live-attenuated virus has shown the greatest efficacy of any vaccine concept in monkeys," but is troubled by its potential effects in older and immunosuppressed people.

Luc Montagnier, who together with Robert Gallo is credited with discovering the role of HIV in AIDS, is not in favor of the trial or the future use of a live-attenuated HIV vaccine. He believes that subunit vaccines offer a safer approach and says that "no one can predict the long-term impact of exogenous retrovirus in a human population." He, personally, would not volunteer for such a trial.

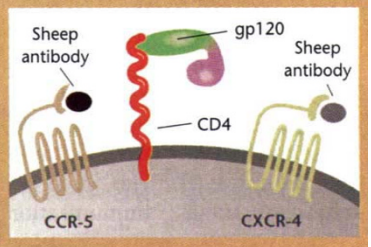
Gordon Nary, executive director of IAPAC, and a volunteer, thinks that, if approved, financial backing for the clinical element of the trial may come from the company currently developing a prototype of the Desrosiers vaccine — Therion Biologics — or even from the NIH.

The greatest expense, however, will be volunteer insurance, warns Nary. The trial cannot proceed without the guarantee of lifetime coverage — both medical and financial — for all volunteers in the event of any adverse reactions. However, Nary maintains that the cost of liability protection should be offset against the economic consequences of delaying its development. "What can we save in the long run by investing the money now in human trials of a vaccine?" asks Nary.

Thus, IAPAC's call for volunteers has brought the organization some publicity, but more importantly, it has forced a debate that could be a turning point for AIDS vaccine development.

KAREN BIRMINGHAM

Montagnier collaborates to develop HIV co-receptor antibodies



Luc Montagnier has given his support to an alternative immunotherapeutic strategy to tackle HIV. He is to collaborate with a UK-based drug development company to develop high-affinity, humanized-sheep antibodies that target the HIV co-receptors, CXCR-4 and CCR-5.

For an antibody to displace binding of HIV to its co-receptors, it requires a binding affinity greater than 10^{10} L/moL. Sheep-derived antibodies have this capacity, according to the managing director of KS-Biomedix Holdings, Kim Tan.

While Tan's company is looking to generate therapeutic agents from the venture, Montagnier told *Nature Medicine* that the agreement is intended to "foster development of new reagents for HIV research only" and not for any clinical applications. K.B.

From human rights to the human genome — stopping biopiracy

Genetic research by academic institutions and biotechnology companies around the globe is yielding long-sought-after clues to mutations that could help cure a wide range of diseases. This research is being increasingly conducted on tissue samples from native populations known to have increased frequencies of certain diseases, such as the Tristan de Cunha islanders who have a high propensity for asthma.

To address the rights of indigenous populations and the ethics involved in such research, this summer UNESCO published a draft of "A Universal Declaration on the Human Genome and Human Rights," which is the latest in a series of international treaties and declarations dealing with this issue. The document, which will pass before the UN General Assembly in November, serves more an "exhortatory than legal function for nations," according to Bartha Knoppers, professor at the Université de Montréal and member of the International Bioethics Committee of UNESCO.

It sets out guidelines that are intended to give indigenous peoples more negotiating power with biotechnology companies and universities, and will hopefully discourage what has been called "bleed and run" research — taking blood samples without returning any benefit to the subjects. Moreover, Knoppers believes that the declaration will encourage the exchange of appropriate "gifts" — such as helping a community build infrastructure, rather than encouraging the "commodification" of human life through the exchange of money for blood or DNA.

Knoppers compared the document to the 1948 Universal Declaration of Human Rights, and the Nuremberg Code, noting "the new declaration takes the next step, from human rights to the human genome." She acknowledged that, like these two international codes of law, it will take some time for the document guidelines to become known and adopted, but is optimistic that, over time, acceptance of its principles will occur.

Not waiting for international treaties to protect its people from genetic exploitation and "biopiracy," the Icelandic parliament may pass a law this autumn to prevent the export of human tissue. Companies wanting to do research on samples from the Icelandic population would need to maintain a presence in the country.

A supporter of the proposed legislation is Kari Stefansson, founder and CEO of DeCODE Genetics, a biotechnology company based in Reykjavik. "Ours is a powerful population for genetics research," says Stefansson. "A relatively small, homogeneous population, Icelanders don't have a lot of advantages, but we do possess a unique genetic heritage," he says.

Stefansson wants to ensure that any research done with the Icelandic population will also benefit them. To prevent what he calls "helicopter science" — samples being sent abroad for analysis — DeCODE has established a network of Icelandic physicians whose biomedical research it funds. However, some would say there is a conflict of interest because the company has access to samples from patients of physicians in its network, whereas researchers from abroad may not if the bill is passed.

The company, which is barely a year old, recently mapped the familial essential tremor gene, *FET1* (*Nature Genet.* 17, 84; 1997), and is pursuing targets such as multiple sclerosis, psoriasis, schizophrenia and manic depression. Stefansson says that he is prepared to publish data more rapidly than most researchers in order to benefit Icelandic patients sooner.

VICKI BROWER
New York