

Human Test of AIDS Vaccine Approved

Federal officials announced this week that they have granted approval for the testing of a potential AIDS vaccine using human volunteers. The preliminary experiments, scheduled to begin within a few months, will be the first testing of an AIDS-vaccine candidate in humans allowed in the United States.

According to the U.S. Food and Drug Administration and the National Institute of Allergy and Infectious Diseases (NIAID), MicroGeneSys of West Haven, Conn., received approval to initiate human testing of its proposed vaccine this fall. Other U.S. companies are seeking similar approval for their own AIDS vaccines, and French scientists announced last March they had injected a possible AIDS vaccine into humans, with promising results (SN: 3/28/87, p.198).

Testing of the MicroGeneSys vaccine will be coordinated by NIAID scientists, who plan to study its effects in 60 homosexual and 3 heterosexual male volunteers. The volunteers, who must be healthy and test negative for infection with the AIDS virus, will be examined for adverse side effects and any changes in their immune system, and will be compared with 18 controls given a placebo. Only when the vaccine's safety is ensured will studies be planned to determine whether it can actually prevent AIDS infection, NIAID Director Anthony S. Fauci said in this week's announcement.

To make the vaccine, researchers at the biotechnology company concentrated on a viral protein called gp 160, taken from the "envelope" structure surrounding a custom-made AIDS virus supplied by NIAID. They then inserted a gene coding for gp 160 into another type of virus called baculovirus, which infects moths and butterflies. In order to obtain large amounts of gp 160 material, the researchers are growing genetically engineered baculoviruses in cultures containing insect cells.

Human vaccine testing is complicated by the question of whether all AIDS vaccines should first be tested in chimpanzees, apparently the only nonhuman animals that can be infected by the human AIDS virus (SN: 4/4/87, p.213). Costly and time-consuming, tests in chimpanzees nonetheless may provide data essential to the vaccine search, as shown by a report in the Aug. 20 NATURE.

In that study, scientists at Oncogen in Seattle, the Yerkes Regional Primate Research Center in Atlanta and the Southwest Foundation for Biomedical Research in San Antonio, Tex., tested Oncogen's AIDS vaccine, made by inserting envelope proteins from the AIDS virus into vaccinia viruses. The procedure is sim-

ilar to that used by the French researchers who injected their vaccine into humans, says Oncogen's Shiu-Lok Hu.

Chimps immunized with the recombinant vaccinia viruses developed general antibodies against the AIDS virus, as well as cells that attack the virus, say the authors. But unlike the French researchers who worked with humans, the U.S. group did not detect any so-called neutralizing antibodies — which prevent viruses from infecting cells — in the vaccinated chimps. As a consequence, the researchers found viruses inside the cells of both immunized and nonimmunized animals. They plan to follow the

chimps for several years to detect any sign of disease.

Although two of the unvaccinated chimps developed a pre-AIDS condition, there are few examples of infected chimps going on to develop clinical symptoms of AIDS, says Hu. He told SCIENCE NEWS that the presence of the virus in vaccinated chimps may help solve the mystery of why, in humans as well as chimps, infection with the AIDS virus may not necessarily lead to development of the disease. It also could indicate differences in the response to AIDS between humans and chimps, he says. — D.D. Edwards

High-risk sex studied in women, men

With sexual contact a principal conduit of AIDS infection, studies of sexual practices are important in predicting how far the viral disease may move through the population. Last week, scientists reported on two such behavioral studies — among the female sex partners of infected men and among male homosexuals in a low-incidence area. While the first study found male-to-female transmission of the AIDS virus, the second concludes that widespread "unsafe" sex persists among male homosexuals living in areas lacking large numbers of AIDS cases.

In a study of 97 female partners of 93 men known to be infected with the AIDS virus, an overall 23 percent of the women had acquired the AIDS virus, say researchers at the University of California at Berkeley and at the health departments of San Francisco and California. The source of the male partner's infection appeared to be important: 21 to 25 percent of the female partners of AIDS-infected bisexual men, hemophiliacs and those infected through transfusions had themselves been infected, compared with 42 percent of the female partners of intravenous drug users. Although the majority of women were partners of men who had developed AIDS or AIDS-related complex, there was no association between the men's disease status and transmission of the virus, say the authors.

Likelihood of infection increases with the total number of sexual exposures to the infected male partner, as well as with the practice of anal intercourse with the infected partner, Berkeley's Nancy Padian told SCIENCE NEWS. Padian and her coauthors report in the Aug. 14 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (JAMA) that in-

fecting women were nearly five times more likely than uninfected women "to have had more than 100 sexual exposures with their infected partner." Also, those who practiced anal intercourse were more than twice as likely to be among the infected group. But the scientists found no relationship to the total number of sexual partners, the woman's history of sexually transmitted diseases or oral sex.

Padian says the women in the study are closer to the "average, middle-class" person than the subjects of some AIDS studies. She emphasizes that "you simply cannot generalize from this group to the general population," because the male partners were *known* carriers of the virus.

Despite general awareness about AIDS, those not directly confronted with victims of the disease have been slow to change risky behavior, says New Mexico's state epidemiologist, Harry F. Hull of Santa Fe. With others in the state's health department and at the Centers for Disease Control in Atlanta, Hull reports in the Aug. 14 JAMA on a study testing visitors to New Mexico's sexually transmitted disease clinics between mid-1985 and January 1986. Tests showed that 14 percent of the homosexual and bisexual men studied were infected with the AIDS virus, a figure comparable to that found in San Francisco in 1980. Hull says the incidence in New Mexico has since risen to 20 percent, evidence that AIDS continues to spread despite educational efforts.

"Everywhere in the country, we're seeing denial," says Hull. "I hope [low-incidence areas like New Mexico, with less than 4 percent the rate reported in New York City] can learn the bitter lessons vicariously" — D.D. Edwards