La. research may lead to AIDS vaccine for humans

By JOE GYAN JR. 
Advocate state writer

NEW ORLEANS — Four Tulane University Medical Center scientists and one from LSU have developed a vaccine for monkeys that could lead to an AIDS vaccine for humans in five to 10 years, members of the jubilant research team announced Thursday.

The prototype vaccine has proven effective after more than a year of testing on rhesus monkeys at Tulane University’s Delta Regional Primate Research Center in Covington and could lead to an AIDS vaccine for humans.

Five to 10 years, said Dr. Michael Murphy-Corb, a Delta researcher and head of the program.

Murphy-Corb told a large group of reporters that the development of a vaccine for a monkey infection called simian immunodeficiency virus — the virus responsible for acquired immunodeficiency syndrome — would provide an ideal model for a vaccine to protect humans from human immunodeficiency virus, or HIV.

HIV is the virus responsible for the acquired immunodeficiency syndrome in humans, while SIV is responsible for AIDS in monkeys, Murphey-Corb said. SIV is genetically very similar to HIV, he added.

The major significance of this study is that we have laid a cornerstone for the foundation of an AIDS vaccine for humans,” Murphy-Corb said.

The research team also includes Louis Martin, senior research scientist at the Delta facility; Gary Baskin, Delta’s senior veterinarian and associate director for research; Billie Davis-Fairburn, clinical veterinarian at Delta; and Dr. Ronald Montelaro, chair of LSU’s biochemistry department in Baton Rouge.

Rhesus monkeys at the primate center were observed to be suffering from immune deficiency in 1985, Murphy-Corb said, live SIV was injected into the monkeys. The 13-month waiting period allowed a maximum manifestation of the monkeys’ immune systems, she said.

“Eight of the nine monkeys showed no signs of infection, Murphy-Corb said. The ninth animal, which had been then known to develop any SIV-related symptoms, she said.

The ninth monkey is significant, Murphy-Corb said, because it can be used to determine if unvaccinated monkeys exposed to SIV usually die within seven months. The ninth monkey is still healthy more than 14 months after it was injected with the live virus, she said.

Davis-Fairburn described all nine monkeys as “extremely healthy-looking animals.”

“There have been no observable negative side effects,” Murphy-Corb said.

Delta Regional Primate Research Center Director Farrar emphasized the development of a prototype for an AIDS vaccine represents a “giant step forward” in combating a disease that has killed 66,000 Americans.

The results of the investigative team’s work provide “unambiguous proof” that a human AIDS vaccine is
within reach, Murphey-Corb said.

The Delta research scientist said she is “optimistic” that such a vaccine can be developed in 10 years.

“I have set a personal goal of five years, but there are no promises,” Murphey-Corb said, adding that the team is working “as quickly as humanly possible” to produce an AIDS vaccine for humans.

“I think we can no longer be so pessimistic (about the chances of developing an AIDS vaccine),” she said. “In fact, I know we are no longer so pessimistic.”

Murphey-Corb said the fact that eight of the nine rhesus monkeys tested SIV-negative demonstrates an efficiency rate “that is good enough for human use,” but she cautioned that the AIDS vaccine prototype “may not be safe for human use” in its present form.

“I think it’s a major step, but there are many more that must follow,” she said.

Montelaro, who was in San Antonio, Texas, on Thursday to help review the microbiology program of the Southwestern Research Foundation, said in a prepared statement that the AIDS vaccine prototype “could be risky in terms of humans because you have to have confidence that there is absolutely no infectious virus left.”

Gerone said it is “very likely” that the research team will develop an AIDS vaccine for humans, and he said the team’s efforts to date have provided a “resounding answer” to animal rights activists who question the use of rhesus monkeys in a laboratory setting for research purposes.

Gerone also said the work being performed at the Delta facility is “good use of taxpayers’ money.”

In March, the National Institute of Allergy and Infectious Diseases awarded the research center a five-year grant in excess of $7 million to develop an AIDS vaccine.

In addition to his work with the Delta team, Montelaro has led a research group at LSU since 1979 that has been looking at the biochemistry of an AIDS-like virus in horses called equine infectious anemia virus.

Like AIDS, EIAV causes long-term, persistent infection.

LSU’s biochemistry department is working with a $2 million grant from the National Institutes of Health to develop an AIDS vaccine prototype using EIAV as a model.

Dr. Michael Murphey-Corb, who developed a vaccine against the AIDS virus in rhesus monkeys, poses in a laboratory at Tulane University Medical Center in New Orleans Thursday

Montelaro also is collaborating with Stanford University and the University of Colorado on a $1.5 million project looking at an AIDS-like disease in cats.