

# Hopes fade on perfect animal model for AIDS

Phyllida Brown

PIGTAIL macaques will be pleased to know that they may not be the ideal animal model for AIDS after all. Just weeks after scientists in Seattle announced that they had succeeded in infecting this species of macaque with HIV-1, three other teams have admitted they cannot repeat the results in their own laboratories. Some have not even been able to infect the monkeys' cells with the virus in laboratory cultures.

AIDS researchers urgently need a better animal model. Chimpanzees can be infected with HIV-1, but they do not appear to become ill—and research is limited because chimps are a protected species. Macaques can be infected with SIV, the simian immunodeficiency virus, but there

are important differences between SIV and HIV-1. When a team at the University of Washington, Seattle, announced that they had infected pigtail macaques with HIV-1 the news was greeted with huge excitement by researchers as it seemed to solve the problem (This Week, 27 June).

However, the failure of other laboratories to reproduce the results has dampened hopes. "I strongly feel that HIV-1 infection of pigtails is not going to be useful," says Patricia Fultz, of the University of Alabama.

Meanwhile, a second animal model is attracting much more excitement. SHIV, a chimeric virus that consists of a genetically altered form of SIV, made its appearance at the International AIDS Conference in Amsterdam. SHIV has the envelope protein of HIV-1 and two of HIV's regulatory genes,

*tat* and *rev*, which allow it to replicate. Two teams, one in Japan and another in the US, have succeeded in infecting cynomolgus macaques with SHIV. Unlike pigtails, cynomolgus macaques are already widely available in research laboratories in the US and Europe.

Norman Letvin, a member of the American team from the New England Regional Primate Center near Boston, says SHIV can be used to test human vaccines based on HIV's envelope protein, as most of the existing human HIV vaccines under development are.

Most scientists think the chimeric viruses will be useful, but a few question their safety. Two AIDS researchers have developed antibodies to SIV in laboratory accidents (This Week, last issue), and there is an equal risk that SHIV could infect workers. Albert Osterhaus, from the National Institute of Public Health and Environmental Protection in the Netherlands, warns that the risk should be borne in mind.

Privately, other researchers have questioned whether SHIV is a greater risk than SIV. In some countries it is an offence to modify an organism that naturally infects only humans, such as bacteria of the genus *Salmonella*, so that it can infect an animal. SHIV is unusual among genetically modified organisms because it is probably lethal to humans, but it would not be released into the environment, because infected monkeys are kept under strictly regulated conditions.

Letvin says there is probably an equal risk to researchers from HIV, SIV and SHIV, but this will not deter researchers. "These are all dangerous viruses," he says, "but we need a vaccine and tens of millions of people are infected with HIV." □

## Writs fly over animal experiments

AN AMERICAN animal rights group is taking legal action against the University of California at Berkeley for censoring reports on how animals used in research died. The group, In Defense of Animals, is also suing the university for trying to discredit it.

Under the Animal Welfare Act, laboratories must perform autopsies on animals that die in questionable circumstances. Elliot Katz, president of IDA, asked the university to send him reports on the work of six researchers whom he believed were not treating their laboratory animals with the care required by law. When, after seven months, the university had still not sent them, Katz filed a legal claim to get the documents. Berkeley finally sent 95 reports but had blacked out the names of the researchers, the species and sex of the animals and the type of research.

Katz says that without this information it is impossible to analyse any pattern of abuse in the laboratories. Roy Hendrickson, director of the university's office of laboratory animal care, says that the action was necessary to protect the researchers from possible harassment and death threats. IDA has won cases against the university in the past. In 1983, IDA sued the US Department of Agriculture for failing to ensure that the university complied with the Animal Welfare Act. The USDA fined the university \$12 000.

During the 1980s, researchers at Berkeley kept some animals in cupboards instead of proper cages, says Katz. Some animals died from brain infections as a result of dirty surgery. Katz says the researchers conducted their work with "amazing sloppiness because they were arrogant and greedy and tried to bring in as many federal dollars as they could". The university vet, Maxwell Redfearn, resigned in frustration at the conditions in the laboratories.

The university admits that it was negligent in the past but says it has improved conditions and is now building a \$14.3-million facility to raise the standards of its animal care. But Katz contends that

instead of improving the conditions its animals were living in, the university used the fact it was fined to plead for funds.

For its part, the university accuses Katz of trying to raise funds for IDA's campaign against Berkeley by using photographs taken at other laboratories and cases that are more than a decade old. Katz replies that he cannot use recent figures because the reports the university provided are useless. IDA is suing the university for claiming that its campaign is based on false information. Katz says that the university has written to its financial supporters alleging that Katz was misappropriating funds.

The case is due to be heard in the county courts on 9 September, when the judge will decide whether the university has to turn over all its information on the autopsies. □

## Monks give Mongolians their medicine

MONGOLIANS are turning to monks for their medical treatment, in a reaction against remedies imported from the West. In the past, the Mongolians relied on monks trained at Manba Datsans, medical monasteries where the monks learnt traditional remedies and medical practices. Then, in the late 1930s, the Manba Datsans were destroyed in favour of Western medicine.

Now, political change has made way for the return to traditional medical practices. A Mongolian monk, Lama Natsagdorj, is re-establishing the Manba Datsan in Ulan Bator. It will differ from its predecessor, however, because Western medical practices will be incorporated in the curriculum.

Lama Natsagdorj, who trained as a doctor in India, believes Western and Mongolian doctors can learn from one another. "The goal is obviously the same—the patient's wellbeing," says the Lama. "It's not important which type of medicine is better, it's a matter of how the two in combination could increase our ability to treat the patient more completely."

Last month the Lama visited London to



Shelf life: traditional remedies still preferred

tour hospitals and medical schools. "Here, science and technology are well developed, but machines, for example, cannot diagnose correctly. Contact with the patient is needed, too."

The Lama would like doctors to come to the monastery on exchanges. "We need to cooperate to find the appropriate combination of Eastern and Western ways." □

Tim Malyon