daily administration is sufficient, though twice daily corticosteroids may suppress fever more effectively.²⁵ Rifampicin increases the metabolism of steroids thus the dosage of corticosteroid must be doubled to achieve similar effects.²⁶ As with antituberculous treatment, the use of corticosteroids should be supervised by a practitioner with an interest in the condition.

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Monkey business over AIDS vaccine

Problems with the paradigm

Over the past month the AIDS research community has been buzzing with consternation over the unexpected and perplexing research at the United Kingdom's National Institute of Standards and Control. Led by Dr Jim Stott, a team of investigators at the institute reported its surprising findings at a Medical Research Council AIDS conference last month and in a letter in last week's *Nature*.¹ Like several other groups in the United States, Stott *et al* had previously reported, with much fanfare, that macaque monkeys could be protected against infection with simian immunodeficiency virus (SIV), a close relative of HIV, by prior immunisation with purified virus inactivated by formalin or with inactivated cells that had been infected with SIV.² Now they have shown that immunisation with similar preparations of uninfected cells affords partial protection too.¹

This is a totally unexpected result. Although it is well known that enveloped viruses pick up cellular antigens when budding from the cell membrane, host cell components have not previously been shown to afford protection against viral infection. It means that strategies for producing vaccines against HIV require re-evaluation, and further basic studies on the mechanism of protection are needed.

Stott *et al* find that protection against SIV infection does not parallel titres of neutralising antibodies to SIV in the immunised monkeys but does correlate with titres of anticellular antibodies. It should be borne in mind that these results are preliminary, having been obtained in just four monkeys in each vaccine group (plus and minus viral antigens in the immunogen), and that the cellular material was of human, not simian, origin.

Taken aback by these results, some AIDS researchers have criticised the group at the institute for not having explored the effects of control vaccine preparations earlier. On the other hand, Stott *et al* are the first group in the world to have used

controls in this way and to have realised what they had stumbled on. Furthermore, the minimum number of monkeys were used for humanitarian and economic considerations. It would surely have been unethical to conduct "placebo" vaccine tests until there was a good indication that the experimental vaccine containing the virus exhibited some protective activity. So the research team really deserves credit for proceeding in an orderly way and in alerting other AIDS researchers as soon as it obtained its surprising results.

Why human T lymphocytes inactivated by formalin help to protect macaques from SIV infection remains to be elucidated. If the end point was the development of clinical AIDS recent hypotheses on an autoimmune component in the pathogenesis of HIV and SIV might be invoked.^{3,4} But in this case the efficacy of the experimental vaccines was determined from early evidence of infection by virus isolation, genome detection, and seroconversion. Contrary to the view expressed in an editorial in *Nature*,⁵ the results of Stott *et al* pertain neither to the aetiology of AIDS nor to its pathogenesis. They do, however, show that vaccination will be a more complex process than many were previously led to believe.

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