REPLY TO 'INTRACEREBRAL *MYCOBACTERIUM LEPRAE* DO NOT ENHANCE SUBSEQUENT FOOTPAD INFECTIONS IN MICE'

Sir,

The hypothesis[1] states that suppression develops as a result of continuous and steadily increasing leakage of antigen into the circulation from foci in peripheral nerves. It seems unlikely that a single intracerebral injection of *Mycobacterium leprae* would meet this requirement unless the bacilli were to multiply unchecked in the central nervous system of the mouse. To my knowledge this has not been previously demonstrated, nor has the Carville group reported the counts of bacilli in the brain at the conclusion of the present experiments.

It is of interest that intracerebral inoculations of allogeneic cells into mice[2] and rabbits[3] are capable of sensitizing the host. Therefore, the apparent immunizing, rather than tolerizing, effect of intracerebral *M. leprae* is not surprising.

It might be possible to duplicate the hypothesized venous drainage of increasing amounts of antigen in a developing leprosy infection by direct intravenous injection of *M. leprae*. Mackaness and Lagrange[4] attempted to simulate the immunological effect of a leprosy infection by injecting sheep red blood cells (SRBC) into CD-1 mice in daily 2-fold increments starting with 50 and reaching a cumulative dose of 10^9 25 days later. The first 10 injections were intravenous and the remainder were intraperitoneal. They found that a weak delayed-type hypersensitivity to SRBC appeared by day 10, but was soon replaced by a

persistent unresponsiveness. They concluded that 'the cell-mediated attack on a source of antigen, whether it be a tumour or a slowly enlarging population of microorganisms (as in leprosy), may be interrupted prematurely if the antigenic stimulus develops too slowly'. Similar repetitive injections of increasing numbers of viable *M. leprae* might produce a suppressed CMI leading to an enhanced footpad infection, if the injections are properly times in relation to the footpad inoculation.

G L STONER

Department of Health and Human Services
Public Health Service
National Institute of Health
Bethesda, Maryland 20205, USA

References

1 Stoner GL. Importance of the neural predilection of *M. leprae* in leprosy. *Lancet,* 1979; **2,** 994–6.

2 Scheinberg LC, Levy A, Edelman F. Is the brain an 'immunologically privileged site'? II. Studies in induced host resistance to transplantable mouse glioma following irradiation of prior implants. *Arch Neurol,* 1965, **13,** 283–6.

3 Scheinberg LC, Kotsilimbas DG, Karpf R, Mayer N. Is the brain 'an immunologically privileged site'? III. Studies based on homologous skin grafts to the brain and subcutaneous tissues. *Arch Neurol,* 1966, **15,** 62–7.

4 Mackaness GB, Lagrange PH. Restoration of cell-mediated immunity to animals blocked by a humoral response. *J Exp Med,* 1974, **140,** 865–70.