

Failure of Interferon to Modify Scrapie in the Mouse

(Accepted 14 February 1969)

Because of the unusual properties of scrapie agent and doubt as to its being truly a virus, experiments were undertaken to find out if an interferon stimulating agent might influence the development or course of the disease following inoculation of infective material into mice. A group of 12 three-week-old male mice was inoculated intraperitoneally with 0.1 ml. of 5 % Statolon made up in sterile 1 % sodium bicarbonate solution one week before challenge with 0.1 ml. 10^{-1} scrapie mouse brain suspension injected intraperitoneally. A second Statolon injection was given the next day and at weekly intervals until the end of the experiment. At the same time six similar mice were inoculated intraperitoneally with the same scrapie material to serve as controls.

Experimental and control animals both developed clinical signs after 7 months, with no difference between the groups as to incubation period or the way in which signs evolved. All animals were examined histologically for confirmation of disease. No measurement of interferon production was attempted in this work. However, Kleinschmidt & Murphy (1967) found that a single injection of Statolon afforded protection against a fatal inoculation of MM virus for 2 weeks and a considerable measure of protection was still observed after 29 days. On the other hand the same authors found that a second injection of Statolon produced a lower interferon response than the first. Whether subsequent inoculations produce continually diminishing responses is not known, but they are ineffective in modifying the development of scrapie.

The failure of Statolon to influence the development or course of scrapie accords with Gresser & Pattison's finding (1968) that potent interferon preparations were likewise ineffective. Katz & Koprowski (1968), moreover, found that 'scrapie per se does not appear to induce synthesis of interferon nor does it seem able to prevent synthesis of interferon when the appropriate stimulus is provided'. Unlike classical neurotropic viruses (Vainio, Gwatkin & Koprowski, 1961; Hitchcock & Porterfield, 1961) scrapie would seem to be a phenomenon unconnected with and uninfluenced by interferon.

The authors would like to thank Dr W. J. Kleinschmidt of the Eli Lilly Laboratories for the gift of Statolon and for helpful criticism.

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(Received 14 January 1969)