The quantitative evaluation of skin reactions in cases of delayed hypersensitivity

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Previous techniques of evaluation of wheal and erythema of challenge sites in cases of delayed hypersensitivity have, at best, required the estimation of erythema

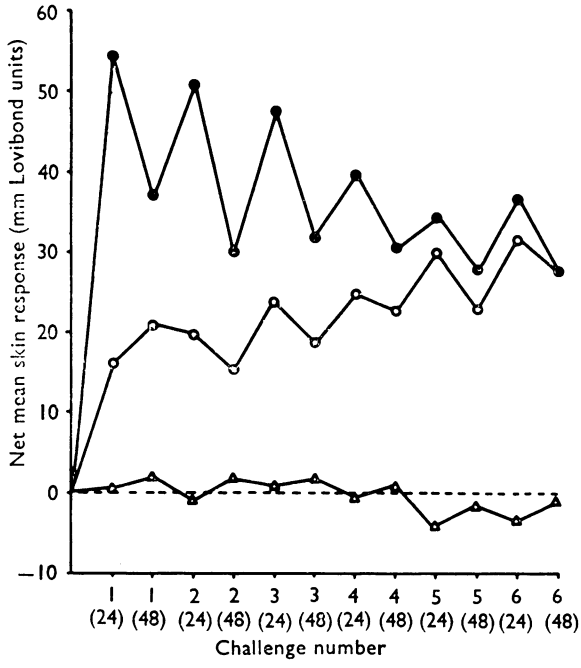

FIG. 1. Net mean skin response against challenge number (with number of hr after challenge in parenthesis), for guinea-pigs sensitized with BCG and challenged with tuberculin (●); sensitized and challenged with 1-hydrazinophthalazine (○) and sensitized and challenged with saline (△).

on an arbitrary scoring system, by an experienced operator. A numerical assessment of erythema is made with a Lovibond–Jolles portable tintometer (Lovibond Tintometer Ltd., Salisbury). This instrument, first described by Jolles and Mitchell (1957), allows the operator to evaluate any colour, which is defined in terms of the amount of each of three filters (red, blue and yellow) required for colour match. In all instances, challenge sites are observed 24 and 48 hr after each challenge.

For each reading taken, the numbers corresponding to the three colours are totalled and the difference between the total before and after challenge is multiplied by the reaction site diameter in millimetres, to give a value, " the skin response." The mean skin response for each group of ten control animals is calculated and subtracted from those of the groups of test animals, giving the " net mean skin

response" for each group of test animals. This value is plotted against challenge number; producing a line rising above the abscissa in cases of hypersensitivity, and fluctuating about it in cases of nonhypersensitivity. The height of the line above the abscissa is a direct measure of the degree of hypersensitivity.

REFERENCE

JOLLES, B. & MITCHELL, R. G. (1957). A hand tintometer for radiological and dermatological work. *Lancet*, **1**, 1333.

Cholinesterases and cholineacetylase in the nervous system of the rat

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Klingman, Klingman & Poliszczuk (1968) recently published a report of a quantitative study of cholinesterases using homogenates of the rat sympathetic nervous system. In the present investigation, cholinesterases and cholineacetylase were measured in lyophilized sections of the rat sympathetic nervous system and spinal cord. The advantage of lyophilized sections is that ganglionic tissue can be dissected free from the connective tissue capsule. Total cholinesterase (ChE_T), acetylcholinsterase (AChE) and cholineacetylase (ChAc) were assayed using [^{14}C] acetylcholine, [^{14}C] acetyl-β-methyl choline and [^{14}C] acetyl CoA respectively. The 6 μ sections were lyophilized and weighed on a fish-pole balance (Buckley, Evans & Nowell,

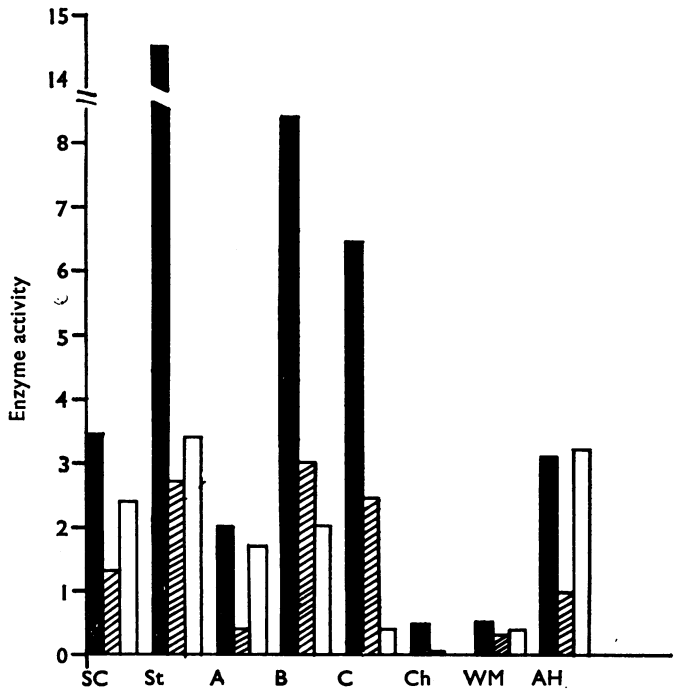

FIG. 1. Total cholinesterase ■, acetyl cholinesterase ▨, and cholineacetylase □ activity in rat nervous system. Activities expressed as moles/μg/hr $\times 10^{9}$, CHE_T and AChE; and $\times 10^{11}$, ChAc, using acetylcholine 3×10^{-3}M, acetyl-β-methyl choline 3×10^{-3}M and acetyl CoA $4{\cdot}65\times10^{-5}$M respectively.