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The Rôle of the Fatty Acid Compounds of the Phagocytes in Neutralizing Bacterial Toxins.

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The rôle of the phagocytes in the mechanism of resistance to infection has been recognized since the early work of Metchnikoff in this field. Little work, however, has been published on the fate of the toxins of the ingested bacteria. The present study was undertaken with the view of determining the rôle of fatty acid compounds of the phagocytes in neutralizing diphtheritic toxin.

Pus from various types of abscesses was studied, particularly with reference to its ability to neutralize diphtheritic toxin. One gram of pus, it was found, would neutralize from one to 4 M.L.D's of toxin, depending upon the nature of the material and the time of contact. The pus was then dessicated and extracted with alcohol and ether in order to remove the fatty acid compounds. The residue, it was found, possessed no neutralizing properties whatever. The extracted fatty acids which were chiefly of the oleic series, when saponified, neutralized diphtheritic toxin in ratios comparable to those published in earlier work from this laboratory.[1]

It is not only the salts of the unsaturated fatty acid series which neutralize toxins. Some of the esters, such as lecithin, cholesterin, and kefalin also possess active detoxifying properties. It seems probable, therefore, that the fatty acid compounds of the body play an important rôle in the mechanism of resistance to bacterial toxins.

[1] Colloid Symposium Monograph, iii, 152.