

Table 1. EFFECT OF VARIOUS STILBENE COMPOUNDS ON THE PHAGOCYtic ACTIVITY OF THE RETICULO-ENDOTHELIAL SYSTEM

Compound used	Phagocytic index (K value)	Oestrogenic activity (R.U.)
4 : 4' Dihydroxy-diethyl stilbene	105	0.001 mgm.
3 : 4' Di(<i>p</i> -hydroxyphenyl)-2 : 4-hexadiene	84	0.004 "
4 : 4' Dihydroxy- α -ethyl- β phenyl stilbene	55	0.003 "
2 : 3 Di(<i>p</i> -hydroxyphenyl)-2-hexene	37	0.001 "
Triphenyl-ethylene	25	10 "
α -(4-Hydroxyphenyl)-stilbene	24	0.25 "
2 : 2' Dihydroxy-diethyl stilbene	20	1 "
4 : Hydroxydibenzyl	13	Negative
4 : 4' Dihydroxystilbene	11	5 mgm.
4 : 4' Dihydroxydibenzyl	11	10 "
Stilbene	11	25 "
Control values for 25 animals	13	

features are modified the compounds have little or no effect on phagocytosis or may even act as mild depressants. It should also be noted that the strongest stimulants all possess high oestrogenicity.

Further work is proceeding to find, if possible, a compound with a high level of phagocytic stimulation but without oestrogenicity.

We are indebted to Prof. D. H. Hey for help in the interpretation of the above results and to Sir Charles Dodds for generously supplying these compounds.

We also gratefully acknowledge assistance from the Central Research Fund of the University of London and from the Medical Research Council.

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Cytochromes of *Micrococcus lysodeikticus*

IN an investigation of the difference spectra of bacterial cytochromes, Smith^{1,2} found that *Micrococcus lysodeikticus*, strain 4698 A.T.C.C., possessed cytochromes *a* and *c*, but no absorption peak corresponding to cytochrome *b* was detected.

Working with *Micrococcus lysodeikticus*, strain N.C.T.C. 2665, derived from the original strain isolated by Fleming, we have found by direct visual spectroscopy that this organism contains cytochromes *a*, *b*, and *c*, the absorption maxima of the *a* and *c* components corresponding to those reported by Smith for strain 4698 A.T.C.C. Some concentration of the cytochrome *b* and partial separation of it from cytochromes *a* and *c* was effected by a method involving lysis of the cells with egg-white lysozyme, successive precipitations with ammonium sulphate and trichloroacetic acid, and digestion of the residues with taka-diastase. The separation of cytochromes *a* and *c* from the *b* component was facilitated if a small quantity of ribonuclease was added with the lysozyme. The cytochrome *b* was found to remain associated with a particulate fraction which could be collected by centrifugation at 20,000*g*.

The concentrated cytochrome *b* preparations had associated with them considerable quantities of the yellow pigment of the organism, which has recently been reported to be a carotenoid³. This could be removed by extraction with *n*-butanol, but in the process there was some loss of cytochrome *b*. Moreover, the absorption band of the reduced cytochrome *b* after butanol treatment was less sharply defined than in the untreated preparations, a change which probably indicated a deleterious action of butanol on the cytochrome.

Spectrophotometric examination of the residues containing cytochrome *b* was carried out after reduction of the cytochrome with sodium dithionite and suspension of the material in glycerol to minimize light scattering. The absorption maximum of the cytochrome *b* component was at 563 m μ , which was the same as the position of the maximum seen in the whole-cell suspensions by visual spectroscopy.

It has been shown by Lightbown and Jackson⁴ that 2-heptyl-4-hydroxyquinoline-N-oxide, an antagonist of streptomycin, inhibits electron transport in the cytochrome systems of certain bacteria and of heart muscle preparations. Visual spectroscopic experiments with whole-cell suspensions of *M. lysodeikticus* showed that addition of the antagonist, with succinate present as substrate, inhibited the oxidation of reduced cytochrome *b*, a result similar to that obtained with *Bacillus subtilis* and with heart muscle preparations⁴. The quinoline-N-oxide is effective as a streptomycin antagonist with *M. lysodeikticus*.

We wish to thank the Medical Research Council for a grant to assist this work, a detailed account of which will be published later.

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Isolation of *Salmonella infantis* from an Aborted Bovine Foetus

WHEREAS abortion in cattle associated with *Brucella* or *Vibrio* infection is very common, it can, in some rare cases, also be caused by *Salmonella* species. The *Salmonella* strain most frequently held responsible for bovine abortion is *Salmonella dublin*; this strain has already been found in the Belgian Congo in a bovine foetus. *Salmonella infantis*, a world-wide *Salmonella* type, which has already been isolated from man and several animal species, has not yet been recorded, so far as we can ascertain, as causing bovine abortion.

A five-month-old bovine foetus was presented for bacteriological examination, and, as brucellosis is widely spread in native cattle in the Congo, it was at first suspected that it was infected with this pathological agent. The stomach contents and various parts of the internal organs were seeded on the usual mediums, including MacConkey agar. After a 24-hr. incubation period the Petri dishes were harvested and a pure culture of Gram-negative rods