to hydrolyse,[8] so that local concentrations of free acid may not build up with the chloroacids. However, despite this necrotic damage, the ester-treated animals with the exception of those given ethyl tribromoacetate, increased in body weight during the period of injections at rates which were only slightly less than those of uninjected controls.

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Dimethanesulphonic Acid Esters of Sugar Alcohols

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THE finding of an interesting degree of tumour inhibiting activity in 1,6-dimethanesulphonyl-D-mannitol (I)[1] and the possibility that this activity might depend upon stereochemical and other structural factors led us to investigate some appropriate isomers and analogues in the sugar alcohol series. In brief, all the following compounds were found to be inactive or very feebly active as inhibitors of growth of the Walker tumour, in comparison with (I).

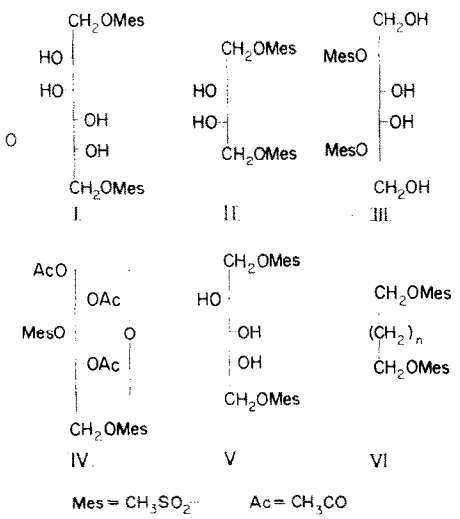

FIG. 1

1,4-Dimethanesulphonyl-erythritol (II); 2,5-dimethanesulphonyl-galactitol (III); 1,2,4-triacetyl-3,6-dimethanesulphonyl-D-glucose (IV); 2,3,4-triacetyl-1,5-dimethanesulphonyl-ribitol; 1,5-dimethanesulphonyl-D-arabitol (V) and its triacetyl derivative; the 2,3,4,5-tetra-acetyl-1,6-dimethanesulphonyl derivatives of D-glucitol and galactitol, which are stereo-isomers of the tetraacetyl derivative of (I), and finally, the enantimorph (or L-form) of (I). 1,4-Dimethanesulphonyl-2,3-diacetyl-DL-threitol, a stereoisomer of (II), has also been made. Since the tetra-acetyl derivative of (I) has approximately the same activity as the parent substance (I) and since both (V) and its triacetyl derivative are very feebly active we have provisionally argued that the 1,6-dimethanesulphonyl derivatives of D-glucitol and galactitol would have little activity, like their tetra-acetyl derivatives.

Comparison of our compounds with the previous series of $\alpha\ \omega$-dimethanesulphonoxyalkanes (VI)[2, 3] shows that in the latter case the biological activity decreases as the chain length increases beyond five carbon atoms (VI; n = 3) although the alkylating ability remains about the same; on the other hand in the sugar alcohol series it appears, upon the basis of the compounds so far examined, that activity increases greatly when the chain length is extended to six carbon atoms although the alkylating ability would remain about the same. Clearly therefore the structural features which determine activity are different in this series and appear to depend very much on the stereochemical structure. Detailed accounts of these investigations will be published later.

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