

1. SUMMARY

Sulphur containing compounds occur in nature as plant products, many having interesting biological activities. Organic sulphur compounds also find uses as synthetic intermediates. In view of these important uses synthesis of organic sulphur compounds for biological evaluation and exploring the utility of some of them as synthons would be of interest.

This report deals with synthesis of a variety of sulphur containing monoterpenes, some of them related to qing-hao-su, for biological evaluation as antimalarial agents. These included sulphides and episulphides of (-)-carvone. Utility of an intermediate sulphur containing compound as a "multifunctional synthon" is discussed. Many intermediates have been subjected to antifungal testing.

The report is presented in three Parts.

Part 1 describes the synthesis of some monoterpene sulphides and episulphides for biological evaluation as antimalarial and antifungal agents.

In Part 2, some reactions of the "multifunctional synthon", 8,9-dihydro-9-(toluene-p-thio)-carvone obtained as a byproduct in the reaction of (-)-carvone with toluene-p-thiol, are described and the potential of this multifunctional synthon in short syntheses of zingiberene and juvabione is discussed.

Results of the antifungal assay of 26 sulphur containing compounds obtained in this study against Colletotrichum gloeosporioides, Cladosporium cladosporioides and Aspergillus niger are presented in Part 3 of this report.

Only four compounds were found to show some activity. (-)-2,3-Dihydro-3-thioacetoxycarvone was found to have significant activity against the fungus, Colletotrichum gloeosporioides.