

Studies on the Coumarin Derivatives. XI. Anthelmintic
Action of Thiocoumarin Derivatives.

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Summary

1) Although coumarin derivatives do not react with carbonyl reagents, thiocoumarin derivatives undergo condensation with them. In order to find the role of the lactone ring in coumarin derivatives on their anthelmintic action by comparison of the anthelmintic actions of these derivatives, 10 kinds of thiocoumarin derivatives were prepared and their anthelmintic action was tested.

2) Compounds tested were thiocoumarin, and 3-methyl-, 4-methyl-*, 5-methyl-*, 6-methyl-*, 7-methyl-, 8-methyl-*, 4, 7-dimethyl-, 3, 4, 7-trimethyl-, and 3-ethyl-* thiocoumarin (those with * are new compounds).

3) Whatever is taken as the standard for anthelmintic action, thiocoumarin derivatives in general had weaker effect than the corresponding coumarin derivatives and the order of efficacy of methylcoumarin and methylthiocoumarin derivatives was not parallel.

4) The effect of 3-alkylthiocoumarins tended to decrease with the lengthening of the alkyl group.

5) If the spasmodic and paralytic actions of santonin, the chief cause of its anthelmintic action, are to be attributed to the ketone group and the lactone ring in its molecule, thiocoumarin derivatives should have stronger anthelmintic action than coumarin derivatives. Since this was found to be reverse of the case by experiments, it was assumed that coumarin derivatives should also possess some amount of ketonic properties.

(Reprinted from Journ. Pharm. Soc. Japan. 74, 898 (1954))