

Studies on the Coumarin Derivatives. VIII. Syntheses of 3-Alkyl-coumarin and 3-Alkyl- $\beta$ -naphthocoumarin, and their Anthelmintic Action.

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Summary

1) Because of the extremely strong pharmacological action of 3-methylcoumarin, seven kinds of 3-alkylcoumarins and seven kinds of 3-alkyl- $\beta$ -naphthocoumarins were prepared and their *ni vitro* activities were tested in order to examine the change of pharmacological action by the size of the alkyl group in 3-position.

2) Of these compounds prepared, 3-butyl, 3-hexyl, and 3-octylcoumarins and 3-isopropyl, 3-butyl, 3-hexyl, and 3-octyl- $\beta$ -naphthocoumarins are new compounds.

3) The pharmacological action of 3-alkylcoumarins differs remarkably according to the size of the alkyls but no such difference could be detected in 3-alkyl- $\beta$ -naphthocoumarins. In general, the action of the latter was found to be weaker than that of the former.

4) In 3-alkylcoumarins, greater the size of the alkyl group smaller the paralytic and lethal actions, with longer period elapsing before the appearance of the excited state, and the duration of the excited state tended to become longer. These tendencies were assumed to be due to the decrease of absorption rate by the increase of molecular weight.

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