UNCONVENTIONAL TOXIC HETEROCYCLES OF CLITOCYBE ACROMELALGA

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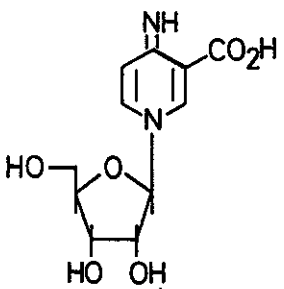
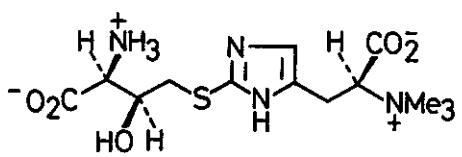
Clitocybe acromelalga Ichimura is a wild mushroom distributed in Japan only. It exhibits unique toxicity. Accidental ingestion of the mushroom causes intolerable pain in the extremities after several days and the pain lasts for about 2—4 weeks. In spite of these remarkable physiological activities, the mushroom has hitherto been chemically little studied, since it is not readily available.

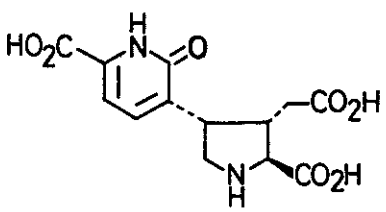
It was difficult to reproduce the above described symptoms in experimental animals, however. So we fractionated extracts of the mushroom testing the lethal dose on mice. Clitidine was a weakly toxic, a new nucleoside. Clithioneine, an unusual betaine, was nontoxic. From the most toxic fraction, acromelic acid A (ca. 110 μg) and B (ca. 40 μg) were isolated. Mainly on the basis of NMR and UV data, we propose formula 1 and 2 for A and B respectively. Evidence for these formulas will be presented and discussed.



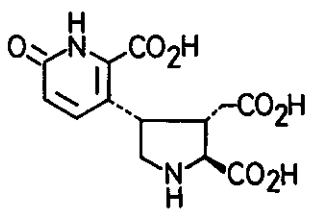
clitidine



clithioneine



acromelic acid A 1



acromelic acid B 2