SEDATIVE EFFECT OF THE CRUDE EXTRACT OF PHYLLIDIA VARICOSA ON RATS

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The presence of bisbolane isonitrile compounds in the nudibranch Phyllidia spp. has been reported (1). Some of the therapeutically used sedatives such as barbiturates possess structural similarities to these isonitrile derivatives in having -C-N-C- linkage associated with π electron systems. Therefore, it is possible that these isonitriles may also exhibit sedative effects. This possibility was investigated in the current study.

Specimense of Phyllidia varicosa were collected from the coastal waters of Trincomalee. Dichloromethane : methanol (1:1) extract was prepared and it's polyvinylpyrrolidone co-precipitate was made. This was administered (8.00-9.00 hr) intra peritonially (at 25, 50 or 100 mg/ml dose levels) to healthy adult male rats, and their exploratory behaviour was monitored using rat hole board technique.

The extract caused a significant dose dependent impairement in locomotor activity and rears. In contrast, head dippings and average time spent on head dipping remained unaltered. Activity directed fractionation of the crude extract by solvent partitioning into hexane and chloroform solubles followed by chromatographic separation of the chloroform solubles on SiO in dichloromethane-hexane demonstrated that the sedative effect was present in the fraction containing the isonitriles.

These results indicate that naturally occuring isonitriles may provide a useful source of secondary metabolites for investigation as potential sedative agents.

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References:

(1) Gulavita, N.K., De Silva, E.D., Hugadone, M.R., Karuso, P. and Scheuer, P.J. (1986), J.Org.chem, 51, 5136