International Conference on Natural Products and Physiologically Active Substances (ICNPAS-2004)
September 12-17, 2004, Novosibirsk, Russia
Poster Presentation

Identification of Allelochemicals from the Lichen *Cladonia uncialis*: Insecticidal Activity

Maria Yu. Panchenko[1], Dina V. Korchagina[1], Nina I. Komarova[1], Marina P. Polovinka[1], Viktor V. Glupov[2], Nariman F. Salakhutdinov[1]

[1] *N.N. Vorozhtsov Novosibirsk Institute of Organic Chemistry*
Siberian Branch, Russian Academy of Sciences
9, Lavrentiev ave., 630090 Novosibirsk
e-mail: polovina@nioch.nsc.ru
[2] *Institute of Animal Systematics and Ecology, SB RAS*

Lichens, symbiotic organisms of fungi and algae, synthesize numerous metabolites, “lichen substances”, which comprise aliphatic, cycloaliphatic, aromatic and terpenic compounds. Lichen and their metabolites have a manifold biological activity: antiviral, allergenic, antibiotic, antitumor, plant growth inhibitory antiherbivore and enzyme inhibitory. Lichens allelochemicals have long been used by humans.

In researching compounds with biological activity, we have focused our attention on metabolites of lichen from Altay - Cladonia uncialis. Air-dried plant material was ground and exhaustively extracted with hexane, ethyl acetate and ethanol. Composition of extractive substances was detected by HPLC analysis. Hexane extract yielded sixteen metabolites. This extract was chromatographed to afford perlatolic acid, main component of extract (46%), identified by spectroscopic methods. Usnic acid detected as main component from ethyl acetate and ethanol extracts. From bioassay the insecticidal activity was found to reside in hexane extract.