Evaluation of the Antimicrobial Activity of the Acetone Extract of the Lichen *Ramalina farinacea* and its (+)-Usnic Acid, Norstictic Acid, and Protocetraric Acid Constituents

Turgay Tay[a], Ayşen Özdemir Türk[b,*], Meral Yılmaz[b], Hayrettin Türk[a], and Merih Kıvanç[b]

[a] Anadolu University, Department of Chemistry, 26470 Eskişehir, Turkey
[b] Anadolu University, Department of Biology, 26470 Eskişehir, Turkey.
Fax: +90 222 320 49 10. E-mail: aturk@anadolu.edu.tr

* Author for correspondence and reprint requests

Z. Naturforsch. **59 c**, 384–388 (2004); received December 18, 2003/January 26, 2004

The acetone extract of the lichen *Ramalina farinacea* and its (+)-usnic acid constituent showed antimicrobial activity against *Bacillus subtilis*, *Listeria monocytogenes*, *Proteus vulgaris*, *Staphylococcus aureus*, *Streptococcus faecalis*, *Yersinia enterocolitica*, *Candida albicans*, and *Candida glabrata.* Norstictic acid was active against *Aeromonas hydrophila* as well as the above microorganisms except *Yersinia enterocolitica.* Protocetraric acid showed activity only against the tested yeasts *Candida albicans* and *Candida glabrata.* The MIC values of the extract as well as of the three substances were determined. No antifungal activity of the acetone extract has been observed against ten filamentous fungi.

Key words: Ramalina farinacea, Antimicrobial Activity, Lichen Compounds