**Secondary metabolites of lichens have cytotoxic effects on lichen photobionts and free-living algae**

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Influence of lichen secondary metabolites, namely evernic acid, orcinol and usnic acid, on selected species of algae: *Trebouxia erici* (photobiont of lichen *Cladonia cristatella* producing typical lichen secondary metabolites)*, Coccomyxa solorinae-saccatae* (photobiont of lichen *Solorina saccata* not producing typical secondary metabolites) and free-living aquatic alga *Scenedesmus quadricauda* was evaluated in the present study. For determination of cytotoxic effects, we cultivated algae on the surface of discs composed from glass microfibers, in quantities of 0.1 mg/disc for each metabolite. Microfibers resembling mycobiont hyphae and pores in discs enable access nutrients from the cultivation media. After two weeks prolonged cultivation of algae we analysed selected physiological parameters, including growth, chlorophyll *a* fluorescence, content of ascorbic acid, content of reduced and oxidized glutathione and content of aliphatic organic acids. We found that presence of these secondary compounds typically inhibited growth of tested algae and chlorophyll *a* fluorescence. In the presence of typical lichen secondary metabolites as were evernic acid and usnic acid, we observed decrease of ascorbic acid content, decrease of reduced glutathione and significant changes in composition of aliphatic organic acids.

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