

Cytotoxic Activity of Halogenated Monoterpenes from *Plocamium cartilagineum*

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Z. Naturforsch. **59c**, 339–344 (2004); received October 13/November 12, 2003

Nine halogenated monoterpenes isolated from the red alga *Plocamium cartilagineum* have been evaluated for their cytotoxic effects on the tumor cell lines CT26 (murine colon adenocarcinoma), SW480 (human colon adenocarcinoma), HeLa (human cervical adenocarcinoma) and SkMel28 (human malignant melanoma) with several multidrug resistance mechanisms and the mammalian non-tumor cell line CHO (Chinese hamster ovary cells). The activities of these compounds were compared with those of the insecticide γ -hexachlorocyclohexane (lindane) due to chemical structure similarities. Compounds **1**, **2**, **3**, and **5** exhibited selective cytotoxicity against colon and cervical adenocarcinoma cells. Interestingly, the effect of compound **3** was specific and irreversible to human colon adenocarcinoma SW480 cells, which overexpress the transmembrane P-glycoprotein often related to chemoresistance. None of the anti-tumor doses of these compounds was cytotoxic against CHO cells. Furthermore, analysis of cellular extracts after incubation with the test compounds and rotenone (positive uptake control) demonstrated the intracellular accumulation of **1**, **2**, **3**, and **5**.

Key words: Halogenated Monoterpenes, Cytotoxicity, Tumor Cells