

Cytotoxic Activity of Orsellinates

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The series of 2,4-dihydroxy-6-methylbenzoates **2–10** (methyl to hexyl orsellinates) prepared by alcoholysis of lecanoric acid (**1**) – a natural product from the lichen *Parmotrema tinctorum* (Nyl.) Hale – was submitted to the brine shrimp lethality test (BST), which was also performed for 2,4-dihydroxy-6-methylbenzoic acid (**11**) (orsellinic acid) and the derivative ethyl-2-hydroxy-4-methoxy-6-methylbenzoate (**12**) (4-methoxy-ethyl orsellinate), in order to detect new substances with probable antineoplastic activity. Results showed that chain elongation – increase in lipophilicity ($\log P$) – causes a rise in the cytotoxic activity of orsellinates. Hexyl orsellinate (**7**) showed the highest cytotoxic activity ($LC_{50} = 31 \mu M$). A correlation between lipophilicity ($\log P$) and cytotoxic activity ($\log 1/LC_{50}$) is presented. Compounds with ramified chains – *iso*-propyl, *sec*-butyl and *tert*-butyl orsellinates (**8–10**) – were less active than those with the correspondent linear chain. The activities presented by 4-methoxy-ethyl orsellinate (**12**) and ethyl orsellinate (**3**) suggest that the hydroxy group at the C-4 position causes effect in the cytotoxic activity of orsellinates against *Artemia salina*.

Key words: Orsellinates, Lichen, *Artemia salina*, *Parmotrema tinctorum*