

# Cytotoxic Activity of Orsellinates

Alcir T. Gomes<sup>a</sup>, Neli K. Honda<sup>a,\*</sup>, Fernanda M. Roese<sup>a</sup>, Rozanna M. Muzzi<sup>a</sup>,  
and Leandro Sauer<sup>b</sup>

<sup>a</sup> Universidade Federal de Mato Grosso do Sul, Departamento de Química, C. Postal 549,  
79070-900, Campo Grande, Mato Grosso do Sul, Brazil. Fax (+55)(67)3453552.

E-mail: nkhonda@nin.ufms.br

<sup>b</sup> Universidade Federal de Mato Grosso do Sul, Departamento de Computação e Estatística,  
Campo Grande, Mato Grosso do Sul, Brazil

\* Author for correspondence and reprint requests

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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*