BIOLOGICAL ACTIVITY

**Description**
L-Canaline is a nonprotein amino acid stored in many leguminous plants. L-Canaline is a cytotoxic metabolite catalyzed by L-canavanine and its arginase. L-Canaline is a potent and irreversible inhibitor of ornithine aminotransferase. L-Canaline inhibits the growth of the malaria parasite *Plasmodium falciparum* with an IC₅₀ of 297 nM. L-Canaline has anticancer and antiproliferative effects.[1][2][3].

<table>
<thead>
<tr>
<th>IC₅₀ &amp; Target</th>
<th>IC₅₀: 297 nM (<em>Plasmodium falciparum</em>)[3]; Ornithine aminotransferase[1]</th>
</tr>
</thead>
</table>

**In Vitro**
L-Canaline treatment inhibits the proliferation of PBMCs after stimulation by phorbol 12-myristate-13-acetate (PMA) or via the mixed lymphocyte reaction. The greatest effect is seen with PMA-stimulated cells, where L-canaline has an IC₅₀ of 0.26 mM. L-Canaline is slightly less toxic to PBMCs stimulated via the mixed lymphocyte reaction (IC₅₀ of 0.54 mM)[1]. L-canaline inhibits L-lysine flux competitively (Kᵢ of 4.6 mM) in astrocytes and astrocytoma cells[2].

**In Vivo**
L-Canaline decreases the aspartic acid content of tissues of the medulla oblongata of male Wistar rats, but it does not affect the evoked release of this nonprotein amino acid into these tissues[2]. Intraseptal injection of 100 μg of L-canaline into male Sprague-Dawley rats causes a 90% decrease in the ornithine aminotransferase activity of the septum tissues evaluated from animals killed 1 h later[2].

**REFERENCES**

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: 609-228-6898  Fax: 609-228-5909  E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA