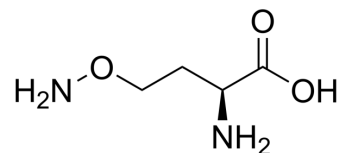


## L-Canaline

<b>Cat. No.:</b>	HY-129476	
<b>CAS No.:</b>	496-93-5	
<b>Molecular Formula:</b>	C <sub>4</sub> H <sub>10</sub> N <sub>2</sub> O <sub>3</sub>	
<b>Molecular Weight:</b>	134.13	
<b>Target:</b>	Endogenous Metabolite; Parasite	
<b>Pathway:</b>	Metabolic Enzyme/Protease; Anti-infection	
<b>Storage:</b>	Powder	-20°C 3 years
	In solvent	-80°C 6 months
		-20°C 1 month



### BIOLOGICAL ACTIVITY

<b>Description</b>	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 <i>Plasmodium falciparum</i> with an IC <sub>50</sub> of 297 nM. L-Canaline has anticancer and antiproliferative effects <sup>[1][2][3]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Plasmodium
<b>In Vitro</b>	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 IC <sub>50</sub> of 0.26 mM. L-Canaline is slightly less toxic to PBMCs stimulated via the mixed lymphocyte reaction (IC <sub>50</sub> of 0.54 mM) <sup>[1]</sup> . L-canaline inhibits L-lysine flux competitively (K <sub>i</sub> of 4.6 mM) in astrocytes and astrocytoma cells <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>In Vivo</b>	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 <sup>[2]</sup> . 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 <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### REFERENCES

- [1]. Bence AK, et al. The antiproliferative and immunotoxic effects of L-canavanine and L-canaline. *Anticancer Drugs*. 2002 Mar;13(3):313-20.
- [2]. Rosenthal GA. L-canaline: a potent antimetabolite and anti-cancer agent from leguminous plants. *Life Sci*. 1997;60(19):1635-41.
- [3]. Berger BJ. Antimalarial activities of aminoxy compounds. *Antimicrob Agents Chemother*. 2000 Sep;44(9):2540-2.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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