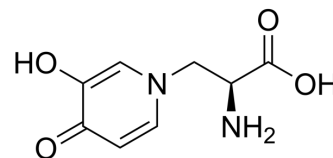


## Mimosine

Cat. No.:	HY-N0928
CAS No.:	500-44-7
Molecular Formula:	C <sub>8</sub> H <sub>10</sub> N <sub>2</sub> O <sub>4</sub>
Molecular Weight:	198.18
Target:	Apoptosis
Pathway:	Apoptosis
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

In Vitro	H <sub>2</sub> O : 5 mg/mL (25.23 mM); ultrasonic and warming and adjust pH to 2 with HCl and heat to 60°C)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	5.0459 mL	25.2296 mL	50.4592 mL
		5 mM	1.0092 mL	5.0459 mL	10.0918 mL
10 mM		0.5046 mL	2.5230 mL	5.0459 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	1. Add each solvent one by one: PBS Solubility: 2 mg/mL (10.09 mM); Clear solution; Need ultrasonic				

### BIOLOGICAL ACTIVITY

Description	Mimosine, a tyrosine analog, can act as an antioxidant by its potent iron-binding activity <sup>[1]</sup> . Mimosine is a known chelator of Fe(III) <sup>[2]</sup> . Mimosine induces apoptosis through metal ion chelation, mitochondrial activation and ROS production in human leukemic cells <sup>[3]</sup> . Anti-cancer, antiinflammation.
In Vitro	Mimosine, a known chelator of Fe(III), may facilitate Fe(III) uptake in leucaena by serving as a phytosiderophore <sup>[2]</sup> . Mimosine, a bidentate iron-binding ligand, may also play a role in cellular translocation of iron within leucaena <sup>[2]</sup> . Mimosine is a toxic nonprotein amino acid that is a major constituent of the tropical legumes Leucaena and Mimosa <sup>[4]</sup> . Mimosine (400 μM), through iron chelation, reversibly blocks cell cycle progression in MDA-MB-453 human breast cancer cells <sup>[4]</sup> . Mimosine (400 μM) reduces DNA synthesis by greater than 90% of control within 4 hr of treatment, and suppresses total proline-directed protein kinase activity to less than 10% of control after 16 hr treatment <sup>[4]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Mimosine (30, and 60 mg/kg) decreases sperm concentration <sup>[5]</sup> .

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Animal Model:	ICR male mice (6-8 weeks) <sup>[5]</sup>
Dosage:	15, 30, or 60 mg/kg
Administration:	Injected (i.p.) for 7 consecutive days
Result:	Could significantly reduce sperm concentration as compared to the control or low dose mimosine group (15 mg/kg) at doses of 30 and 60 mg/kg.

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## REFERENCES

- [1]. Keiko Murakami, et al. Generation of reactive oxygen species by hydroxypyridone compound/iron complexes. Redox Rep. 2020 Dec;25(1):59-63.
- [2]. Michael D H Honda, et al. Mimosine facilitates metallic cation uptake by plants through formation of mimosine-cation complexes. Plant Mol Biol. 2020 Mar;102(4-5):431-445.
- [3]. MaherHallakMSc, et al. Mimosine Induces Apoptosis through Metal Ion Chelation, Mitochondrial Activation and Reactive Oxygen Species Production in Human Leukemic Cells. Blood. 2004, Nov 16, 104 (11): 4481.
- [4]. K S Kulp, et al. Mimosine blocks cell cycle progression by chelating iron in asynchronous human breast cancer cells. Toxicol Appl Pharmacol. 1996 Aug;139(2):356-64.
- [5]. Pipatpong Kanla, et al. Acute Effects of Mimosine Purified from *Leucaena leucocephala* on Male Reproductive System of Adult Mice. Int. J. Morphol., 36(2):507-512, 2018.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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