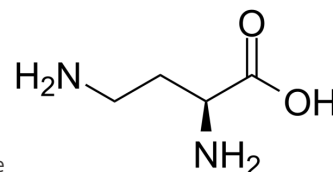


## L-DABA

Cat. No.:	HY-101414
CAS No.:	1758-80-1
Molecular Formula:	C <sub>4</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub>
Molecular Weight:	118.13
Target:	GABA Receptor; Endogenous Metabolite
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease
Storage:	<div> <div>Powder</div> <div>-20°C    3 years</div> <div>4°C    2 years</div> </div> <div> <div>In solvent</div> <div>-80°C    2 years</div> <div>-20°C    1 year</div> </div>



## SOLVENT & SOLUBILITY

In Vitro	H <sub>2</sub> O : 1 mg/mL (8.47 mM; Need ultrasonic)					
	Preparing Stock Solutions	<div><div>Solvent</div><div>Concentration</div></div>	Mass	1 mg	5 mg	10 mg
		1 mM	8.4653 mL	42.3263 mL	84.6525 mL	
		5 mM	1.6931 mL	8.4653 mL	16.9305 mL	
		10 mM	---	---	---	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: PBS					
	Solubility: 100 mg/mL (846.53 mM); Clear solution; Need ultrasonic					

## BIOLOGICAL ACTIVITY

Description	L-DABA (L-2,4-Diaminobutyric acid) is a weak GABA transaminase inhibitor with an IC <sub>50</sub> of larger than 500 μM; exhibits antitumor activity in vivo and in vitro.
IC <sub>50</sub> & Target	Human Endogenous Metabolite
In Vitro	<p>The tumor cells are irreversibly and totally damaged by incubation with 10 mM L-2,4-Diaminobutyric acid for 24 h at 37°C. The cell-destructive effect by L-DABA is probably due to an osmotic lysis induced by the non-saturated intracellular accumulation of L-DABA. The harmful effect of L-DABA could be abolished by concomitant incubation with L-alanine and L-methionine<sup>[1]</sup>. Kinetic studies indicates that L-DABA is a non-linear, non-competitive inhibitor of GABA transaminase activity. The L-DABA-induced elevation of GABA levels parallels the inhibition of GABA transaminase activity<sup>[2]</sup>. L-2,4-Diaminobutyric acid, an amino acid analogue, produces a cytolytic effect with a human glioma cell line, SKMG-1, and normal human fibroblasts. The concentrations of L-DABA necessary to reduce the cell count to 50% of control following a</p>

	24-h incubation at 37°C are 12.5 mM for the human fibroblasts and 20 mM for the glioma cell line <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>In Vivo</b>	Treatment with L-DABA results in 43.4% reduction of tumor growth <sup>[1]</sup> . L-DABA is a more effective inhibitor of GABA transaminase in vivo than in vitro <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

<b>Animal Administration</b> <sup>[2]</sup>	Mice: Male Sprague Dawley rats (150-200g) are used in the study. LDABA is dissolved in 0.9% saline and diluted in appropriate medium. L-DABA is administered intraperitoneally at a dose of 764 mg/kg in a volume of 4 mL/kg in acute studies. Chronically treated rats receives daily intraperitoneally injections (2.5mM/kg in saline) for 3 days. Mice are sacrificed and the brain regions are dissected for analysis <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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## REFERENCES

- [1]. Ronquist G, et al. Antitumor activity of L-2,4 diaminobutyric acid against mouse fibrosarcoma cells in vitro and in vivo. J Cancer Res Clin Oncol. 1980;96(3):259-68.
- [2]. Beart PM, et al. L-2,4-Diaminobutyric acid and the GABA system. Neurosci Lett. 1977 Jul;5(3-4):193-8.
- [3]. Panasci L, et al. The cytolytic effect of L-2,4 diaminobutyric acid with malignant glioma cells and fibroblasts. Cancer Chemother Pharmacol. 1988;21(2):143-4.

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

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