L-DABA

Cat. No.: HY-101414

CAS No.: 1758-80-1

Molecular Formula: $C_4H_{10}N_2O_2$

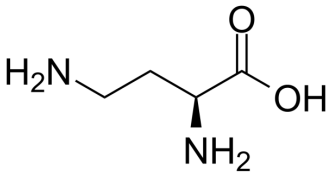
Molecular Weight: 118.13

Target: GABA Receptor; Endogenous Metabolite

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 1 mg/mL (8.47 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	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.

BIOLOGICAL ACTIVITY

Description

L-DABA (L-2,4-Diaminobutyric acid) is a week GABA transaminase inhibitor with an IC_{50} of larger than 500 μM; exhibits antitumor activity in vivo and in vitro.

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

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[1]. 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[2]. 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 24-h incubation at 37°C are 12.5 mM for the human fibroblasts and 20 mM for the glioma cell line[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	Treatment with L-DABA results in 43.4% reduction of tumor growth[1]. L-DABA is a more effective inhibitor of GABA transaminase in vivo than in vitro[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [2]	Mice: Male Sprague Dawley rats (150-200g) are used in the study. LDABA is dissolved in 09.% 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[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Ronquist G, et al. Antitumor activity of L-2,4 diaminobuturic 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.

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