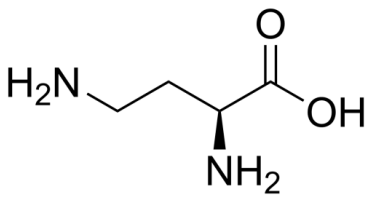
Data Sheet

Product Name:	L-DABA
Cat. No.:	CS-6314
CAS No.:	1758-80-1
Molecular Formula:	$C_4H_{10}N_2O_2$
Molecular Weight:	118.13
Target:	Endogenous Metabolite; GABA Receptor
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease; Neuronal Signaling
Solubility:	H2O : 1 mg/mL (8.47 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

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***. IC50 & Target: IC50: larger than 500 μM (GABA transaminase)[1] ***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]. ***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].

PROTOCOL (Extracted from published papers and Only for reference)

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].

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.

CAIndexNames:

Butanoic acid, 2,4-diamino-, (2S)-

SMILES:

O=C(O)[C@@H](N)CCN

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

Tel: 610-426-3128 Fax: 888-484-5008 E-mail: sales@ChemScene.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA