Product Data Sheet

Chemical Properties

Product Name: L-Canaline
Cas No.: 496-93-5
M.Wt: 134.1
Formula: C4H10N2O3

Chemical Name: O-amino-L-homoserine
Canonical SMILES: N[C@@H](CCON)C(O)=O
Solubility: Soluble in DMSO
Storage: Store at -20°C

General tips: For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shopping Condition: Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

Targets: Metabolism
Pathways: Transaminase

Description:
L-Canaline is a well-known irreversible inhibitor of ornithine aminotransferase (OAT). The natural L-enantiomer reacts by oxime formation with pyridoxal 5′-phosphate in the active site of the enzyme [1]. L-Canaline is naturally found in plants such as legumes, and has been involved in the metabolism of L-canavanine, an aminooxy analog of arginine [2]. Ornithine aminotransferase (OAT) is a mitochondrial enzyme involved in catalyzing the interaction of L-ornithine and α-ketoglutarate to produce glutamic-y-semialdehyde and glutamate [3].
In vitro: Canaline strongly inhibited the activity of pyridoxal-dependent enzymes, including amino acid decarboxylases, 5-hydroxytryptophan decarboxylase, aminotransferases, tyrosine aminotransferase, ornithine transcarbamylase and plasma diamino-oxidase. The canaline inhibition was due to complex formation between canaline and the pyridoxal coenzyme. L-canaline is one of the most potent inhibitors of pyridoxal enzymes. The IC50 value of L-canaline against Ornithine aminotransferase was 3 ×10⁻⁶M [4].

In vivo: Intraperitoneal administration of 500 mg of DL-canaline/kg body wt. only produced a transient inhibition of OAT in brain and liver by 65-70%, suggesting that DL-canaline was not a useful tool in studies of biological consequences of OAT inhibition. [1].

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

ApexBio Technology

www.apexbt.com

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: info@apexbt.com