Chemical Properties

Product Name: 2-Iminobiotin
Cas No.: 13395-35-2
M.Wt: 243.3
Formula: C10H17N3O2S
Synonyms: Guanidinobiotin
Chemical Name: (3aR,6S,6aS)-2-amino-3a,4,6,6a-tetrahydro-1H-thieno[3,4-d]imidazole-6-pentanoic acid
Canonical SMILES: [H][C@](NC1=N)(CS[C@H]2CCCCC(O)=O)[C@@]2(N1)[H]
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: Others
Pathways: iNOS
Description:

2-Iminobiotin is a novel, potent, selective inhibitor of neuronal and inducible nitric oxide synthase.

Nitric oxide synthases (NOS) are a family of enzymes catalyzing the five-electron oxidation of L-arginine to citrulline and nitric oxide. NO produced by NOS is an important cellular signaling molecule implicated in modulating vascular tone, airway tone, insulin secretion, and peristalsis,
angiogenesis and neural development [2].

In vitro: 2-Iminobiotin is a reversible inhibitor of murine iNOS and rat n-cNOS with the Ki values of 21.8 and 37.5 μM, respectively. The guanidino group of 2-iminobiotin is essential for binding. 2-iminobiotin carboxy derivatives were also inhibitors of iNOS which indicates that the free carboxyl group is not required for binding.

In vivo: A dose of 30 mg/kg per day of 2-iminobiotin after hypoxia-ischemia resulted in significant long-term neuro-protection [3]. 2-iminobiotin (2-IB) reduced hypoxia-ischemia (HI)-induced brain damage in neonatal rats. In P7 rat pups, 2-Iminobiotin treatment reduced long-term brain damage in female but not male rats [4].

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. Shortterm 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.