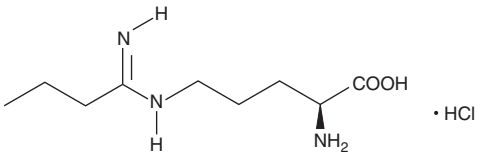
PRODUCT INFORMATION

Ethyl-L-NIO (hydrochloride)

Item No. 10012088

CAS Registry No.: 150403-97-7
Formal Name: N^5-(1-iminobutyl)-L-ornithine, monohydrochloride
Synonym: L-N^5-(1-Iminobutyl)ornithine
MF: $C_9H_{19}N_3O_2$ • HCl
FW: 237.7
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ethyl-L-NIO (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the ethyl-L-NIO (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Ethyl-L-NIO (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ethyl-L-NIO (hydrochloride) in ethanol and DMSO is approximately 2 mg/ml and approximately 0.3 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of ethyl-L-NIO (hydrochloride) can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of ethyl-L-NIO (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Ethyl-L-NIO, the saturated analog of vinyl-L-NIO, is a modestly selective NOS inhibitor. The K_i values for inhibition of nNOS, eNOS, and iNOS by ethyl-L-NIO are 5.3, 18, and 12 µM, respectively, as determined using initial rate measurements.[1] However when evaluating the K_i/K_m ratio, ethyl-L-NIO does not show biologically significant selectivity for nNOS over eNOS, and instead favors iNOS (K_i/K_m = 3.79, 5, and 0.96 µM, respectively).[1] Although ethyl-L-NIO inhibits nNOS, it does not inactivate nNOS in the presence of NADPH and O_2.[1]

Reference

1. Babu, B.R. and Griffith, O.W. N^5-(1-Imino-3-butenyl)-L-ornithine. A neuronal isoform selective mechanism-based inactivator of nitric oxide synthase. *J. Biol. Chem.* **273**, 8882-8889 (1998).

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