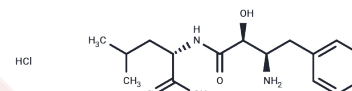


Bestatin hydrochloride

Chemical Properties

CAS No. : 65391-42-6
 Formula: C₁₆H₂₅ClN₂O₄
 Molecular Weight: 344.84
 Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.



Biological Description

Description	Bestatin hydrochloride (Ubenimex hydrochloride) is an inhibitor of aminopeptidase N (APN)/CD13 and aminopeptidase B.
Targets(IC50)	Aminopeptidase, Antibacterial, Antibiotic, Integrin
In vitro	Bestatin, also known as Ubenimex (INN), is a competitive protease inhibitor. It is an inhibitor of aminopeptidase B, leukotriene A4 hydrolase, aminopeptidase N. It is being studied for use in the treatment of acute myelocytic leukemia. Bestatin can be administered, with low toxicity, to cultured cells, intact animals and humans. It has become a useful tool in elucidating the physiological role of some mammalian exopeptidases in the regulation of the immune system, in the growth of tumors and their invasion of surrounding tissues, and in the degradation of cellular proteins.
In vivo	Bestatin is an active anti-angiogenic agent that may inhibit tumor angiogenesis in vivo and tube-like formation of endothelial cells in vitro through its inhibition of APN/CD13 activity. Oral administration of Bestatin (100-200 mg/kg/day) is found to significantly inhibit the melanoma cell-induced angiogenesis in a mouse dorsal air sac assay.
Kinase Assay	Cells are harvested, washed, and lysed in NP-40 lysis buffer (50 mM Tris-HCl [pH 7.5], 150 mM NaCl, 0.5% NP-40). Total cell protein is quantified using the Bradford assay and 1-mg/mL protein aliquots are made. Ten microliters of total cell protein is mixed with 290 µL of substrate solution (0.1 mg/mL dithiothreitol [DTT], 0.1 mg/mL albumin, and 1 mM alanine-β-naphthylamide). Fluorometric measurements (340 nm excitation, 400 nm emission) are made after 15 and 30 min. The slope of the line between the 15- and 30-min measurements is used to represent aminopeptidase activity. Total cell protein is preincubated with bestatin, amastatin, puromycin, EDTA, and/or ZnCl ₂ for 20 min before the fluorometric aminopeptidase assay.
Cell Research	Growing cells (1×10 ⁶ to 2×10 ⁶ cells/mL) are diluted to 1.0×10 ³ cells/mL and transferred (3 mL) into a well in a 12-well multiwell plate (2.5-cm diameter/well). Cells are treated with 0, 10, 50, 100, 300, or 600 µM Bestatin and allowed to grow at 21°C shaking at 180 rpm for 48 h. A hemocytometer is used to measure cell density after 0, 24, and 48 h.

Solubility Information

A DRUG SCREENING EXPERT

Solubility	DMSO: 237 mg/mL (687.28 mM),Sonication is recommended. H2O: 20 mg/mL (58 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (14.5 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8999 mL	14.4995 mL	28.999 mL
5 mM	0.580 mL	2.8999 mL	5.7998 mL
10 mM	0.290 mL	1.4499 mL	2.8999 mL
50 mM	0.058 mL	0.290 mL	0.580 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

- Hossain A, et al. Protective effects of bestatin in the retina of streptozotocin-induced diabetic mice. *Exp Eye Res.* 2016 Aug;149:100-6.
- Zhu X, Liu S, Wang X, et al. Contribution of porcine aminopeptidase N to porcine deltacoronavirus infection. *Emerging Microbes & Infections.* 2018 Apr 11;7(1):65
- Qian X, et al. Inhibition of p38 MAPK Phosphorylation Is Critical for Bestatin to Enhance ATRA-Induced Cell Differentiation in Acute Promyelocytic Leukemia NB4 Cells. *Am J Ther.* 2016 May-Jun;23(3):e680-9.
- Lis M, et al. The effects of bestatin on humoral response to sheep erythrocytes in non-treated and cyclophosphamide-immunocompromised mice. *Immunopharmacol Immunotoxicol.* 2013 Feb;35(1):133-8.
- Poloz Y, et al. Bestatin inhibits cell growth, cell division, and spore cell differentiation in *Dictyostelium discoideum*. *Eukaryot Cell.* 2012 Apr;11(4):545-57.
- Zhu X, Liu S, Wang X, et al. Contribution of porcine aminopeptidase N to porcine deltacoronavirus infection[[J](#)]. *Emerging microbes & infections.* 2018 Apr 11;7(1):65.

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