

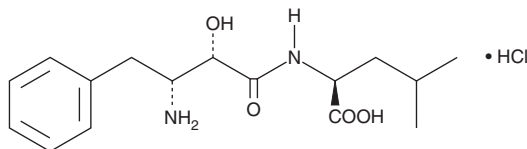
# PRODUCT INFORMATION



## Bestatin (hydrochloride)

Item No. 70520

**CAS Registry No.:** 65391-42-6  
**Formal Name:** N-(3R-amino-2S-hydroxy-1-oxo-4-phenylbutyl)-L-leucine, monohydrochloride  
**MF:** C<sub>16</sub>H<sub>24</sub>N<sub>2</sub>O<sub>4</sub> • HCl  
**FW:** 344.8  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

Bestatin (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the bestatin (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Bestatin (hydrochloride) is soluble in the organic solvent DMSO at a concentration of approximately 2.5 mg/ml.

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 bestatin (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of bestatin (hydrochloride) in PBS, pH 7.2, is approximately 0.15 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Bestatin is an aminopeptidase inhibitor originally isolated from *S. olivoreticuli*.<sup>1</sup> It inhibits aminopeptidase B (IC<sub>50</sub> = 0.05 µg/ml), aminopeptidase N (IC<sub>50</sub> = 16.9 µM), leucine aminopeptidase (IC<sub>50</sub> = 0.01 µg/ml), and the aminopeptidase activity of leukotriene A<sub>4</sub> (LTA<sub>4</sub>) hydrolase (K<sub>app</sub> = 172 nM).<sup>1-3</sup> It is selective for these aminopeptidases over aminopeptidase A, trypsin, chymotrypsin, elastase, papain, pepsin, and thermolysin.<sup>1</sup> Bestatin inhibits the production of LTB<sub>4</sub> (Item No. 20110) in erythrocytes when used at a concentration of 70 µM.<sup>3</sup> It increases the expression of Akt, inhibits proliferation, migration, and invasion, and induces autophagy and apoptosis in 5637 bladder cancer cells.<sup>4</sup> Bestatin (5 and 15 mg/kg) decreases serum levels of LTB<sub>4</sub> and reduces tumor growth in a patient-derived xenograft (PDX) mouse model of colorectal cancer.<sup>5</sup>

### References

1. Umezawa, H., Ayoagi, T., Suda, H., *et al.* *J. Antibiot. (Tokyo)* **29(1)**, 97-99 (1976).
2. Melzig, M.F. and Bormann, H. *Planta Med.* **64(7)**, 655-657 (1998).
3. Örneking, L., Krivi, G., and Fitzpatrick, F.A. *J. Biol. Chem.* **266(3)**, 1375-1378 (1991).
4. Wang, X., Liu, Y., Liu, W., *et al.* *Mol. Med. Rep.* **17(3)**, 4531-4539 (2018).
5. Zhao, S., Yao, K., Li, D., *et al.* *EBioMedicine* **44**, 361-374 (2019).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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