Product Datasheet

BEC hydrochloride

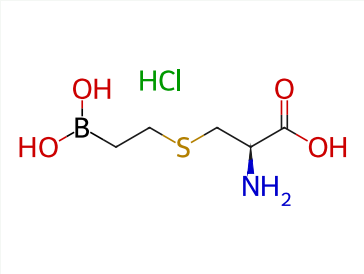
Catalog No. **BP-01989A** · CAS **222638-67-7** · Form **salt · hydrochloride** · Physical state **solid** · Color **white to yellow** · Version **1.0** · Revision **2026-09-10**

FOR RESEARCH USE ONLY. NOT FOR HUMAN OR VETERINARY USE.

Target	Research area
Arginase	**Metabolic Disease**

Molecular formula	**$C_5H_{13}BClNO_4S$**
Molecular weight	**229.4900**

STRUCTURE



DESCRIPTION

BEC hydrochloride is a slow-binding and competitive Arginase II inhibitor with Ki of 0.31 μM and 30 nM at pH 7.5 and pH 9.5, respectively.

BIOLOGICAL ACTIVITY

In Vitro

The X-ray crystal structure of the arginase-BEC complex has been determined at 2.3 resolution from crystals perfectly twinned by hemihedry. The structure of the complex reveals that the boronic acid moiety undergoes nucleophilic attack by metal-bridging hydroxide ion to yield a tetrahedral boronate anion that bridges the binuclear manganese cluster, thereby mimicking the tetrahedral intermediate (and its flanking transition states) in the arginine hydrolysis reaction.

In Vivo

Administration of the arginase inhibitor BEC decreases arginase activity and causes alterations in NO homeostasis, which are reflected by increases in S-nitrosylated and nitrated proteins in the lungs from inflamed mice. BEC enhances perivascular and peribronchiolar lung inflammation, mucus metaplasia, NF-κB DNA binding, and mRNA expression of the NF-κB-driven chemokine genes CCL20 and KC, and leads to further increases in airways hyperresponsiveness.

SOLUBILITY

Soluble in DMSO/water

REFERENCES

[1]. Colleluori DM, et al. Classical and slow-binding inhibitors of human type II arginase. Biochemistry. 2001 Aug 7;40(31):9356-62.

[2]. Kim NN, et al. Probing erectile function: S-(2-boronoethyl)-L-cysteine binds to arginase as a transition state analogue and enhances smooth muscle relaxation in human penile corpus cavernosum. Biochemistry. 2001 Mar 6;40(9):2678-88.

[3]. Ckless K, et al. Inhibition of arginase activity enhances inflammation in mice with allergic airway disease, in association with increases in protein S-nitrosylation and tyrosine nitration. J Immunol. 2008 Sep 15;181(6):4255-64.

Tel: +86 20 31130026 · Fax: +86 20 36822386 · tech@biochemprobe.com · www.biochemprobe.com