

Product Data Sheet

Product Name: Batimastat (BB-94)

Cat. No.: GC16530

Chemical Properties

Cas. No. 130370-60-4

Chemical Name (2S,3R)-N1-hydroxy-3-isobutyl-N4-((S)-1-(methylamino)-1-oxo-3-phenylpropan-2-yl)-2-(thiophen-2-ylthio)succinamide

SMILES CNC([C@@H](NC([C@@H]([C@H](CSC1=CC=CS1)C(NO)=O)CC(C)C)=O)CC2=CC=CC=C2)=O

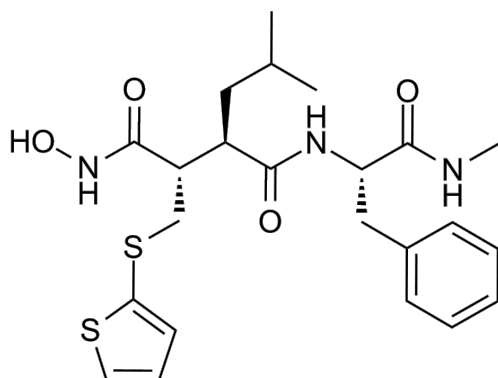
Formula $C_{23}H_{31}N_3O_4S_2$ M.Wt 477.64

Solubility $\geq 23.88\text{mg/mL}$ in DMSO Storage Store at 4°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.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Cell lines HL-60, F36P, H929 cells

Preparation Method Cells were incubated with 5 μ M Batimastat (BB-94) for 48h, and the levels of phosphorylated ERK1/2 were measured by immunoblotting.

Reaction
Conditions 5 μ M; 48h

Applications The exposure to 5 μ M of Batimastat (BB-94) leads to a significant increase in ERK1/2 phosphorylation in HL-60, F36P, and H929 cells.

Animal experiment [2]:

Animal models Sprague-Dawley rats

Colitis was induced in 40 rats by intracolonic administration of trinitrobenzensulfonic acid (TNB). Animals were divided into four groups of ten rats each: group 1 received only intracolonic TNB, group 2 received TNB+5mg/kg intraperitoneal Batimastat (BB-94), group 3 TNB+10mg/kg Batimastat (BB-94) and group 4 TNB+20mg/kg Batimastat (BB-94). The MMP inhibitor was administered 30min before induction of colitis and twice daily until death. Ten rats receiving only intracolonic 0.9% saline served as controls. Animals were killed after seven days; segments of colon were removed and used for histological score of inflammation and myeloperoxidase (MPO) activity.

Dosage form 5, 10, 20mg/kg; i.p.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Applications Treatment with Batimastat (BB-94) has dose-dependent beneficial effects on the inflammatory alterations in rat experimental colitis.

References:

- [1] Alves R, Pires A, Jorge J, et al. Batimastat Induces Cytotoxic and Cytostatic Effects in In Vitro Models of Hematological Tumors[J]. International Journal of Molecular Sciences, 2024, 25(8): 4554.
- [2] Di Sebastiano P, Di Mola F F, Artese L, et al. Beneficial effects of Batimastat (BB-94), a matrix metalloproteinase inhibitor, in rat experimental colitis[J]. Digestion, 2001, 63(4): 234-239.

Background

Batimastat (BB-94) is a potent broad-spectrum inhibitor of matrix metalloproteinases (MMPs), capable of inhibiting MMP-1, MMP-2, MMP-9, MMP-7 and MMP-3, with IC₅₀ values of 3nM, 4nM, 4nM, 6nM and 20nM, respectively^[1]. Batimastat (BB-94) belongs to the hydroxamic acid class of compounds, which can chelate zinc ions, thereby inhibiting the activity of MMPs^[2]. Batimastat (BB-94) can cause cell cycle disturbances in ovarian cancer cells^[3].

In vitro, Batimastat (BB-94) (5μM) treatment of hematological tumor cell lines (HL-60, F36P, H929 cells) for 48h reduced cell viability and cell density, and significantly increased intracellular ERK1/2 phosphorylation^[4].

In vivo, Batimastat (BB-94) (5, 10, 20mg/kg) treated with intraperitoneal injection in rats with colitis improved the inflammation score and reduced myeloperoxidase (MPO) activity in a dose-dependent manner^[5]. Batimastat (BB-94) (30mg/kg) treated with intraperitoneal injection in rats with periodontal disease significantly increased periodontal bone destruction and had a deleterious effect on the progression of periodontal disease^[6].

References:

- [1] Yin Z, Sada A A, Reslan O M, et al. Increased MMPs expression and decreased contraction in the rat myometrium during pregnancy and in response to prolonged stretch and sex hormones[J]. American Journal of Physiology-Endocrinology and Metabolism, 2012, 303(1): E55-E70.
- [2] Ferry G, Boutin J A, Hennig P, et al. A zinc chelator inhibiting gelatinases exerts potent in vitro

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

anti-invasive effects[J]. European journal of pharmacology, 1998, 351(2): 225-233.

[3] Erba E, Ronzoni S, Bassano L, et al. The metalloproteinase inhibitor batimastat (BB-94) causes cell cycle phase perturbations in ovarian cancer cells[J]. Annals of Oncology, 1999, 10(5): 589-591.

[4] Alves R, Pires A, Jorge J, et al. Batimastat Induces Cytotoxic and Cytostatic Effects in In Vitro Models of Hematological Tumors[J]. International Journal of Molecular Sciences, 2024, 25(8): 4554.

[5] Di Sebastiano P, Di Mola F F, Artese L, et al. Beneficial effects of Batimastat (BB-94), a matrix metalloproteinase inhibitor, in rat experimental colitis[J]. Digestion, 2001, 63(4): 234-239.

[6] Björnsson M J, Havemose-Poulsen A, Stoltze K, et al. Influence of the matrix metalloproteinase inhibitor batimastat (BB-94) on periodontal bone destruction in Sprague-Dawley rats[J]. Journal of periodontal research, 2004, 39(4): 269-274.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA