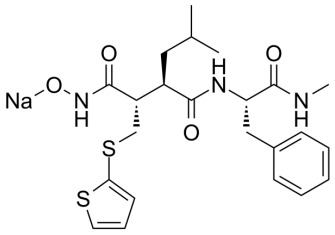
Batimastat sodium salt

Cat. No.:	HY-13564A
CAS No.:	130464-84-5
Molecular Formula:	$C_{23}H_{30}N_3NaO_4S_2$
Molecular Weight:	499.62
Target:	MMP
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Batimastat sodium salt is a potent broad spectrum MMP inhibitor with IC_{50} of 3, 4, 4, 6, and 20 nM for MMP-1, MMP-2, MMP-9, MMP-7 and MMP-3, respectively.
IC_{50} & Target	IC50: 3 nM (MMP-1), 4 nM (MMP-2), 4 nM (MMP-9), 6 nM (MMP-7), 20 nM (MMP-3)[1]
In Vitro	Batimastat (BB-94) is a potent matrix metalloproteinase inhibitor, exhibits an unexpected mode of binding. Batimastat inhibits gelatinases A and B with IC_{50} values of 4 nM and 10 nM, respectively. The IC_{50} with the structurally similar collagenase Ht-d is 6 nM, which is comparable with values for MMP-1 (3 nM), MMP-8 (10 nM), and MMP-3 (20 nM)[2]. CD30 shedding from the cell line Karpas299 can effectively be blocked by the hydroxamic acidbased metalloproteinase inhibitor Batimastat (BB-94, IC_{50}=230 nM)[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Intraperitoneal administration of Batimastat (BB-94) effectively blocks growth of human ovarian carcinoma xenografts and murine melanoma metastasis and delays the growth of primary tumors in an orthotopic model of human breast cancer without cytotoxicity and without affecting mRNA levels[2]. Batimastat (BB-94) is a synthetic matrix metalloproteinase inhibitor that has shown antineoplastic and antiangiogenic activity in various tumor models. Treatment with Batimastat (60 mg/kg i.p. every other day, for a total of eight injections) concomitantly with Cisplatin (4 mg/kg i.v., every 7 days for a total of three injections) completely prevents growth and spread of both xenografts, and all animals are alive and healthy on day 200[4]. Kaplan-Meier analysis of survival (at 48 h) shows that animals treated with Batimastat (BB-94) have increased survival (95.2%) in comparison with controls (75%), and differences are almost statistically significant (p=0.064)[5]. Matrix density is analyzed in saline- or Batimastat (40 mg/kg)-pretreated animals 4 h after E_2 administration, the time point at which collagen density is observed to be at its lowest after hormone treatment[6]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [5][6]	Mice[5] Six-weeks-old female BALB/c mice are used. Mice are treated i.p. with Batimastat (BB-94, 50 mg/kg) 1 h before and 24 h post-infection. Batimastat is suspended at 50 mg/mL in DMSO and stored frozen at -20°C. Prior to use, it is diluted 20-fold in phosphate buffered saline (PBS), and 500 µL are injected into animals. Control mice are injected with 500 µL of 5% DMSO in PBS. Animals are sacrificed 48 h after i.c. challenge.

Rats[6]

Female Sprague-Dawley rats are administered a single physiological dose of E_2 (40 μg/kg in a 0.9% NaCl, 0.4% EtOH vehicle) by intraperitoneal (i.p.) injection at the indicated time intervals prior to tissue collection at necropsy. This in vivo dose level of E_2 has been shown to induce changes in uterine wet weight, tissue architecture, and gene expression characteristic of estrogen receptor activation. For all other experiments, animals are i.p. administered a single 40 μg/kg bolus of E_2 4 h prior to tissue harvest, while control animals receive vehicle only in all studies. Batimastat is administered i.p. at a dose level (40 mg/kg in a 1× PBS, 0.1% Tween-20 vehicle) shown to be effective at inhibiting MMPs in vivo 4 h prior to E_2 or saline control.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Rep. 2019 Oct 15;29(3):603-616.e5.
- J Neuroinflammation. 2019 Nov 28;16(1):242.
- Osteoarthritis Cartilage. 2019 Jan;27(1):148-157.
- Mol Cell Endocrinol. 2020 Dec 1;518:111005.
- Endocrine. 2021 Jan 7.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Yin Z, et al. Increased MMPs expression and decreased contraction in the rat myometrium during pregnancy and in response to prolonged stretch and sex hormones. Am J Physiol Endocrinol Metab. 2012 Jul 1;303(1):E55-70.

[2]. Botos I, et al. Batimastat, a potent matrix mealloproteinase inhibitor, exhibits an unexpected mode of binding. Proc Natl Acad Sci U S A. 1996 Apr 2;93(7):2749-54.

[3]. Hansen HP, et al. Inhibition of metalloproteinases enhances the internalization of anti-CD30 antibody Ki-3 and the cytotoxic activity of Ki-3 immunotoxin. Int J Cancer. 2002 Mar 10;98(2):210-5.

[4]. Giavazzi R, et al. Batimastat, a synthetic inhibitor of matrix metalloproteinases, potentiates the antitumor activity of cisplatin in ovarian carcinoma xenografts. Clin Cancer Res. 1998 Apr;4(4):985-92.

[5]. Ricci S, et al. Inhibition of matrix metalloproteinases attenuates brain damage in experimental meningococcal meningitis. BMC Infect Dis. 2014 Dec 31;14:726.

[6]. Russo LA, et al. Regulated expression of matrix metalloproteinases, inflammatory mediators, and endometrial matrix remodeling by 17beta-estradiol in the immature rat uterus. Reprod Biol Endocrinol. 2009 Nov 4;7:124.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA