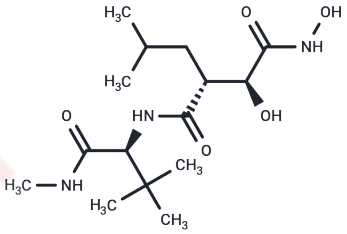
Data Sheet (Cat.No.T6885)

TargetMol

Marimastat

Chemical Properties



CAS No. : 154039-60-8

Formula: C15H29N3O5

Molecular Weight: 331.41

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	Marimastat (BB2516) (BB-2516) is a potent, broad spectrum matrix metalloprotease (MMP) inhibitor. MMP-9 (IC50=3 nM), MMP-1 (IC50=5 nM), MMP-2 (IC50=6 nM), MMP-14 (IC50=9 nM)and MMP-7 (IC50=13 nM).
Targets(IC50)	MMP
In vitro	Marimastat (BB-2516) is a broad-spectrum MMPI with an enzyme inhibitory spectrum very similar to batimastat. [1] Marimastat inhibits CD30 shedding in Karpas 299 cells with an IC50 of 1 microM [2] and also inhibits LPS-induced soluble TNF-alpha production in a dose-dependent manner. The enzyme, tumor necrosis factor alpha convertase (TACE), reported to be closely related to matrix metalloproteinases, is responsible for the processing of pro-TNFalpha to TNFalpha and is specifically inhibited by Marimastat with an IC50 of 3.8 nM.[3]
In vivo	Marimastat has a favorable pharmacokinetic profile in humans, as it is almost completely absorbed after oral administration, with a high and predictable bioavailability and a half-life of approximately 15 hr (justifying twice a day dosing), making it a much more palatable treatment option for Clinicalal trials than batimastat. Marimastat is rapidly metabolized in rodents, undergoing a very high first-pass effect, making testing of marimastat in rodents difficult, as sustained plasma concentrations in this species are difficult to obtain. [1]
Kinase Assay	Compounds 1, 2, 7-9 and 11-16 are pre-incubated with MMP-1 or MMP-3 (10 nM) at different concentrations (0-10 μM) in a mixture of Tris-HCl (50 mM, pH 7.5), NaCl (150 mM), CaCl2 (10 mM), NaN3 (0.02%) and Brij-35 (0.05%) for 1 hour at 37°C. Residual activity is measured using the fluorogenic MMP substrate (2 μM) by fluorescence increase (emission at 393 nm and excitation at 325 nm) on a fluorescence plate reader. The data are fitted to the tight binding inhibitor equation: v=[(E-I-k+[(E-I-k)2+4Ek]1/2)/(2E)], where v is the velocity of the reaction, E is the enzyme concentration, I is the initial inhibitor concentration, and k is the apparent inhibition constant, using the software Prism.

Solubility Information

Solubility	DMSO: 257.5 mg/mL (776.98 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: 2 mg/mL (6.03 mM),Sonication is recommended. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.0174 mL	15.0871 mL	30.1741 mL
5 mM	0.6035 mL	3.0174 mL	6.0348 mL
10 mM	0.3017 mL	1.5087 mL	3.0174 mL
50 mM	0.0603 mL	0.3017 mL	0.6035 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

Rasmussen HS, et al. Pharmacol Ther. 1997, 75(1), 69-75.
auf dem Keller U, et al. Cancer Res. 2010, 70(19), 7562-7569.
Ulasov I, et al. Cancer Med.2013, 2(4), 457-467.
Sinno M, et al. Stem Cells Dev. 2013, 22(3), 345-358.
Maekawa K, et al. Clin Exp Metastasis. 2002, 19(6), 513-518.