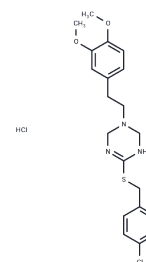


MAC13243 HCl

Chemical Properties

CAS No. :	1071638-38-4
Formula:	C ₂₀ H ₂₅ Cl ₂ N ₃ O ₂ S
Molecular Weight:	442.4
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	MAC13243 HCl, an inhibitor of LolA, a periplasmic chaperone that transports lipoproteins from the inner membrane to the outer membrane, is an antimicrobial agent with specificity and significant inhibitory effects on Gram-negative bacteria.
Targets(IC50)	Antibacterial
In vitro	We investigated the impact of a prototype drug (MAC13243 HCl) interfering with the Gram-negative outer membrane protein LolA on the faecal microbiota. Faecal suspensions from two healthy human donors were exposed to MAC13243 HCl (16, 32, or 64 mg/L) using an in vitro gut model (CoMiniGut). Samples collected 0, 4, and 8 h after exposure were subjected to viable cell counts, 16S rRNA gene quantification and V3-V4 sequencing using the Illumina MiSeq platform. MAC13243 HCl exhibited concentration-dependent killing of coliforms in both donors after 8 h. Concentrations of ≤ 32 mg/L reduced the growth of aerobic bacteria without influencing the microbiota composition and diversity. An expansion of Firmicutes at the expense of Bacteroidetes and Actinobacteria was observed in the faecal microbiota from one donor following exposure to 64 mg/L of MAC13243 HCl. At all concentrations tested, MAC13243 HCl did not lead to the proliferation of Escherichia coli nor a reduced abundance of beneficial bacteria, which are typical changes observed in antibiotic-induced dysbiosis. These results support our hypothesis that a drug interfering with a specific target in Gram-negative bacteria has a low impact on the commensal gut microbiota and, therefore, a low risk of inducing dysbiosis.[3]

Solubility Information

Solubility	DMSO: 45 mg/mL (101.72 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 (4.52 mM), Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2604 mL	11.302 mL	22.604 mL
5 mM	0.4521 mL	2.2604 mL	4.5208 mL
10 mM	0.226 mL	1.1302 mL	2.2604 mL
50 mM	0.0452 mL	0.226 mL	0.4521 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

Barker CA, et al. Degradation of MAC13243 and studies of the interaction of resulting thiourea compounds with the lipoprotein targeting chaperone LolA. *Bioorg Med Chem Lett*. 2013 Apr 15;23(8):2426-31.

Pathania R, et al. Chemical genomics in *Escherichia coli* identifies an inhibitor of bacterial lipoprotein targeting. *Nat Chem Biol*. 2009 Nov;5(11):849-56.

Svanberg Frisinger F, et al. Impact of the Gram-Negative-Selective Inhibitor MAC13243 on In Vitro Simulated Gut Microbiota. *Pharmaceuticals (Basel)*. 2022 Jun 9;15(6):731.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481