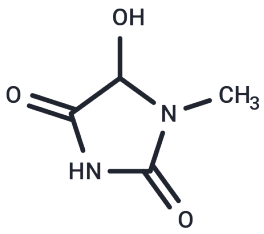
Data Sheet (Cat.No.T28222)

TargetMol

5-Hydroxy-1-methylhydantoin

Chemical Properties



CAS No. : 84210-26-4

Formula: C4H6N2O3

Molecular Weight: 130.1

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	5-Hydroxy-1-methylhydantoin (HD-003) is an antioxidant potentially for the treatment of renal failure. A creatinine metabolite, 5-Hydroxy-1-methylhydantoin , a hydroxyl radical scavenger, has previously been shown to confer renoprotection by inhibiting the progression of chronic kidney disease in rats. 5-Hydroxy-1-methylhydantoin is a novel anti-oxidant drug completely suppressed the expression of B2-kinin receptors (B2KR) in response to high glucose (25 mM) stimulation in VSMC and was also shown to attenuate the effects of BK on VSMC remodeling. 5-Hydroxy-1-methylhydantoin inhibited the BK-induced increase in MAPK phosphorylation and attenuated the increase in connective tissue growth factor (CTGF) protein levels in VSMC. These findings suggest that 5-Hydroxy-1-methylhydantoin may confer vascular protection against high glucose concentrations and BK-stimulation to ameliorate vascular injury and remodeling through its anti-oxidant properties.
Targets(IC50)	Reactive Oxygen Species,Bradykinin Receptor,ROS

Solubility Information

Solubility	DMSO: 60 mg/mL (461.18 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.6864 mL	38.432 mL	76.864 mL
5 mM	1.5373 mL	7.6864 mL	15.3728 mL
10 mM	0.7686 mL	3.8432 mL	7.6864 mL
50 mM	0.1537 mL	0.7686 mL	1.5373 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

Ienaga K, Sohn M, Naiki M, Jaffa AA. Creatinine metabolite, HMH (5-hydroxy-1-methylhydantoin; NZ-419), modulates bradykinin-induced changes in vascular smooth muscle cells. J Recept Signal Transduct Res. 2014 Jun; 34(3):195-200.

Ienaga K, Park CH, Yokozawa T. Protective effect of an intrinsic antioxidant, HMH (5-hydroxy-1-methylhydantoin; NZ-419), against cellular damage of kidney tubules. Exp Toxicol Pathol. 2013 Jul;65(5):559-66. doi: 10.1016/j.etp. 2012.05.001. PubMed PMID: 22749566.

Ienaga K, Yokozawa T. Creatinine and HMH (5-hydroxy-1-methylhydantoin, NZ-419) as intrinsic hydroxyl radical scavengers. Drug Discov Ther. 2011 Aug;5(4):162-75. PubMed PMID: 22466296.

Hasegawa G, Nakano K, Ienaga K. Serum accumulation of a creatinine oxidative metabolite (NZ-419: 5-hydroxy-1-methylhydatoin) as an intrinsic antioxidant in diabetic patients with or without chronic kidney disease. Clin Nephrol. 2011 Oct;76(4):284-9. PubMed PMID: 21955863.

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