Product Data Sheet

Product Name: Methimazole D3
Cat. No.: GC39582

Chemical Properties

Cas. No.	1160932-07-9		
SMILES	S=C1NC=CN1C([2H])([2H])[2H]		
Formula	$C_4H_3D_3N_2S$	M.Wt	117.19
Solubility	DMSO : ≥ 100 mg/mL (853.32 mM); H_2O : ≥ 50 mg/mL (426.66 mM)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Methimazole D3		

Background

Methimazole-d_3 is intended for use as an internal standard for the quantification of methimazole by GC- or LC-MS. Methimazole is an inhibitor of thyroid hormone synthesis.[1,2] It is a substrate for thyroid peroxidase that traps oxidized iodide, preventing its use by thyroglobulin for thyroid hormone synthesis. Methimazole (0.4 mg/kg) inhibits the absorption of radiolabeled iodide by the thyroid gland in rats by 80.9%.[3] It reduces the incidence of lymphocytic thyroiditis in the insulin-dependent type 1 diabetic BB/W rat.[4] Methimazole has been used to induce hypothyroidism in mice.[5,6] Formulations containing methimazole have been used in the treatment of hyperthyroidism.

1.Davidson, B., Soodak, M., Neary, J.T., et al.The irreversible inactivation of thyroid peroxidase by methylmercaptoimidazole, thiouracil, and propylthiouracil in vitro and its relationship to in vivo findingsEndocrinology103(3)871-872(1978) 2.Cooper, D.S.Antithyroid drugsN. Engl. J. Med.352(9)905-917(2005) 3.Brock, R.E., and Head, W.F., Jr.Mechanisms of antithyroidal activity of methimazoleJ. Pharm. Sci.55(8)822-825(1966)

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

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4.Allen, E.M., Rajatanavin, R., Nogimori, T., et al.The effect of methimazole on the development of spontaneous lymphocytic thyroiditis in the diabetes-prone BB/W ratAm. J. Med. Sci.292(5)267-271(1986) 5.Bortolotto, V.C., Pinheiro, F.C., Araujo, S.M., et al.Chrysin reverses the depressive-like behavior induced by hypothyroidism in female mice by regulating hippocampal serotonin and dopamineEur. J. Pharmacol.82278-84(2018) 6.Bortolotto, V.C., Araujo, S.M., Pinheiro, F.C., et al.Modulation of glutamate levels and Na+,K+-ATPase activity contributes to the chrysin memory recovery in hypothyroidism micePhysiol. Behav.222112892(2020)

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