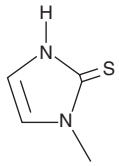
PRODUCT INFORMATION

Methimazole

Item No. 23718

CAS Registry No.: 60-56-0
Formal Name: 1,3-dihydro-1-methyl-2H-imidazole-2-thione
Synonym: NSC 38608
MF: $C_4H_6N_2S$
FW: 114.2
Purity: ≥98%
Supplied as: A solid
Storage: 4°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Methimazole is supplied as a solid. A stock solution may be made by dissolving the methimazole in the solvent of choice, which should be purged with an inert gas. Methimazole is slightly soluble in chloroform and methanol.

Description

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.

References

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 findings. *Endocrinology* **103(3)**, 871-872 (1978).
2. Cooper, D.S. Antithyroid drugs. *N. Engl. J. Med.* **352(9)**, 905-917 (2005).
3. Brock, R.E. and Head, W.F., Jr. Mechanisms of antithyroidal activity of methimazole. *J. Pharm. Sci.* **55(8)**, 822-825 (1966).
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 rat. *Am. 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 dopamine. *Eur. J. Pharmacol.* **822**, 78-84 (2018).
4. 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 mice. *Physiol. Behav.* **222**, 112892 (2020).

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