Carbimazole

Cat. No.: HY-B0558

CAS No.: 22232-54-8

Molecular Formula: $C_7H_{10}N_2O_2S$

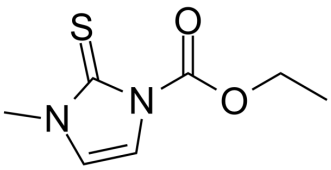
Molecular Weight: 186.23

Target: p38 MAPK

Pathway: MAPK/ERK Pathway

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (536.97 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	5.3697 mL	26.8485 mL	53.6970 mL
	5 mM	1.0739 mL	5.3697 mL	10.7394 mL
	10 mM	0.5370 mL	2.6849 mL	5.3697 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (13.42 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (13.42 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (13.42 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Carbimazole is an orally active antithyroid agent which rapidly converts to Methimazole after absorption and prevents thyroid peroxidase enzyme from iodinating and coupling the tyrosine residues on thyroglobulin, hence reducing the production of thyroxine. Carbimazole also displays anti-inflammatory and neuronal-protective activities, suggesting its application for hyperthyroidism and neurological research[1][2][3].

In Vitro

Carbimazole (0.01-2 mM, 6 h) inhibits the global translation of protein in SK-N-SH cells[1].
Carbimazole (0.5 mM, 12-72 h) inhibits hypoxic SK-N-SH cell injury and preserve intracellular ATP content in an oxygen-free

atmosphere through inhibiting protein synthesis and activating MAPK[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis [1]

Cell Line:	SK-N-SH
Concentration:	0.01-2 mM
Incubation Time:	6 h
Result:	Induced the phosphorylation of eEF2 at Thr56 in a dose- and time-dependent manner through the phosphorylation of AMPK, resulting in a global translational inhibition.

In Vivo

Carbimazole (10, 15, 20 mg/animal/day, p.o., 21 d) shows mainly dose-dependent responses of basic physiological parameters in rabbits[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	local breed adult healthy male rabbits
Dosage:	10, 15, 20 mg/animal/day
Administration:	Oral gavage (p.o.) for 21 d
Result:	Decreased rectal temperature, respiration rate, heart rate, the packed cell volume, Hb concentration and total leukocyte count, significantly decreased plasma glucose level; Increased serum levels of total protein, globulins while serum albumin level decreased; Lowered serum urea level while there was an increase in serum urea level with increase in dose level; Increased serum cholesterol level in a dose-dependent manner.

REFERENCES

[1]. Lehane C, et al. Carbimazole is an inhibitor of protein synthesis and protects from neuronal hypoxic damage in vitro. J Pharmacol Exp Ther. 2013 Dec;347(3):781-93.

[2]. H. Saeed, et al. Effects of Dose Level of Anti-thyroid Drug Carbimazole on Thermoregulation and Blood Constituents in Male Rabbits (Oryctolagus cuniculus). Advances in Research, 2014, 2(3), 129–144.

[3]. Nakashima, T. and A. Taurog, Rapid conversion of carbimazole to methimazole in serum; evidence for an enzymatic mechanism. Clin Endocrinol (Oxf), 1979. 10(6): p. 637-48.

Caution: Product has not been fully validated for medical applications. For research use only.

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