Data Sheet (Cat.No.T72009)

TargetMol

N-Phenylthiourea

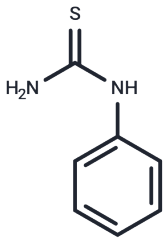
Chemical Properties

CAS No. : 103-85-5

Formula: C7H8N2S

Molecular Weight: 152.22

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	N-Phenylthiourea (Phenylthiocarbamide) is a phenyl ring-containing organothiourea that acts as an EC 1.14.18.1 (tyrosinase) inhibitor, a diphenolase inhibitor, and a non-competitive inhibitor of the PvdP tyrosinase of Pseudomonas, which inhibits melanogenesis, and is able to be used in genetic taste testing.
Targets(IC50)	Others,Endogenous Metabolite,Tyrosinase
In vitro	N-Phenylthiourea acts as a reversible competitive inhibitor of tyrosinase in DOPA oxidation assays (Ki = 0.21μM), significantly reducing DOPA-chrome formation[1].
In vivo	In zebrafish embryos, co-treatment with N-Phenylthiourea (100μM) and $HgCl_2$ significantly reduced mercury toxicity, with both mortality and hepatic Hg levels decreasing by 60-fold. In contrast, co-treatment with CH_3HgCl increased toxicity, leading to higher mortality and a 2-fold increase in hepatic Hg accumulation. These results indicate that N-Phenylthiourea has opposite modulatory effects on the toxicity of inorganic and organic mercury[2].

Solubility Information

Solubility	DMSO: 250 mg/mL (1642.36 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 10 mg/mL (65.69 mM),Solution. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (21.68 mM),Sonication is recommended. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.5694 mL	32.8472 mL	65.6944 mL
5 mM	1.3139 mL	6.5694 mL	13.1389 mL
10 mM	0.6569 mL	3.2847 mL	6.5694 mL
50 mM	0.1314 mL	0.6569 mL	1.3139 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

Ryazanova AD, Alekseev AA, Slepneva IA. The phenylthiourea is a competitive inhibitor of the enzymatic oxidation of DOPA by phenoloxidase. J Enzyme Inhib Med Chem. 2012 Feb;27(1):78-83.
MacDonald TC, Nehzati S, Sylvain NJ, James AK, Korbas M, Caine S, Pickering IJ, George GN, Krone PH. Phenylthiourea alters toxicity of mercury compounds in zebrafish larvae. J Inorg Biochem. 2015 Oct;151:10-7.