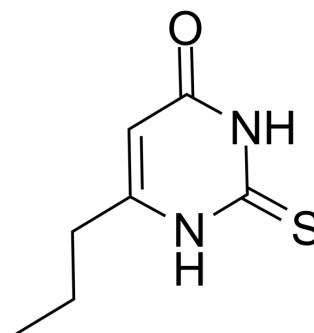


## Propylthiouracil

Cat. No.:	HY-B0346		
CAS No.:	51-52-5		
Molecular Formula:	C <sub>7</sub> H <sub>10</sub> N <sub>2</sub> OS		
Molecular Weight:	170.23		
Target:	Others		
Pathway:	Others		
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 (587.44 mM)  
 H<sub>2</sub>O : < 0.1 mg/mL (ultrasonic) (insoluble)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM		5.8744 mL	29.3720 mL	58.7441 mL
	5 mM		1.1749 mL	5.8744 mL	11.7488 mL
	10 mM		0.5874 mL	2.9372 mL	5.8744 mL

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (14.69 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (14.69 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (14.69 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Propylthiouracil (6-n-Propylthiouracil), a thioamide antithyroid agent, is an orally active thyroperoxidase and type-1 deiodinase (DIO1) inhibitor. Propylthiouracil can be used for the Graves disease and hyperthyroidism research<sup>[1]</sup>.

#### In Vitro

Propylthiouracil (5.5-330 μg/mL; 24 h) induces growth retardation and cytotoxicity in a dose-dependent manner in U-937 cells<sup>[2]</sup>.

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

#### Cell Viability Assay<sup>[2]</sup>

Cell Line:	U-937 cells
Concentration:	5.5 µg/mL, 11 µg/mL, 110 µg/mL, 220 µg/mL, 330 µg/mL
Incubation Time:	24 hours
Result:	Induced cytotoxicity in a dose-dependent manner.

#### In Vivo

Propylthiouracil induces hypothyroidism in adult C57BL/6J and wild-derived WSB/EiJ male mice by given an iodine-deficient diet supplemented with 0.15% Propylthiouracil<sup>[1]</sup>.

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

Animal Model:	Adult C57BL/6J and wild-derived WSB/EiJ male mice (8-weeks old) <sup>[1]</sup>
Dosage:	1.5 g/kg diet
Administration:	Iodine-deficient diet; for 7 weeks
Result:	Induced hypothyroidism in adult C57BL/6J and wild-derived WSB/EiJ male mice.

## REFERENCES

[1]. Lamis Chamas, et al. A Fine Regulation of the Hippocampal Thyroid Signalling Protects Hypothyroid Mice against Glial Cell Activation. *Int J Mol Sci.* 2022 Oct 8;23(19):11938.

[2]. Utsana Puapermpoonsiri, et al. Synergistic effect of phospholipid-based liposomes and propylthiouracil on U-937 cell growth. *J Liposome Res.* 2005;15(3-4):215-27.

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

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