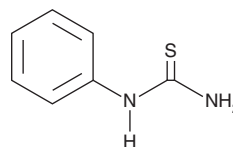


PRODUCT INFORMATION

N-Phenylthiourea

Item No. 30855

CAS Registry No.: 103-85-5
Formal Name: N-phenyl-thiourea
Synonyms: 1-Phenyl-2-thiourea, NSC 5779, Phenylthiocarbamide, Phenylthiourea, PTC, PTU
MF: C₇H₈N₂S
FW: 152.2
Purity: ≥98%
UV/Vis.: λ_{max}: 265 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

N-Phenylthiourea is supplied as a crystalline solid. A stock solution may be made by dissolving the N-phenylthiourea in the solvent of choice, which should be purged with an inert gas. N-Phenylthiourea is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of N-phenylthiourea in these solvents is approximately 30 mg/ml.

N-Phenylthiourea is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, N-phenylthiourea should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. N-Phenylthiourea has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

N-Phenylthiourea is a tyrosinase inhibitor ($K_i = 0.21 \mu\text{M}$ in an enzyme assay using L-DOPA as a substrate) and building block.^{1,2} It increases the susceptibility of SK-MEL-188 melanoma cells in melanogenesis-inducing conditions to γ -radiation-induced cytotoxicity when used at a concentration of $0.01 \mu\text{M}$.³ N-Phenylthiourea has been used as a precursor in the synthesis of compounds with antibacterial and antifungal activities.² It has also been used as a genetic marker for taste because only some people detect it as a bitter taste.⁴

References

1. Ryzanovna, A.D., Alekseev, A.A., and Slepneva, I.A. The phenylthiourea is a competitive inhibitor of the enzymatic oxidation of DOPA by phenoloxidase. *J. Enzyme Inhib. Med. Chem.* **27**(1), 78-83 (2012).
2. Soni, B., Bhandari, A.A., Ranawat, M.S., et al. Synthesis and antimicrobial activity of 2-substituted benzothiazole containing azomethine linkage. *Pharmacophore* **2**(1), 24-33 (2011).
3. Brożyna, A.A., VanMiddlesworth, L., and Slominski, A.T. Inhibition of melanogenesis as a radiation sensitizer for melanoma therapy. *Int. J. Cancer* **123**(6), 1448-1456 (2008).
4. Drewnowski, A. and Rock, C.L. The influence of genetic taste markers on food acceptance. *Am. J. Clin. Nutr.* **62**(3), 506-511 (1995).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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