

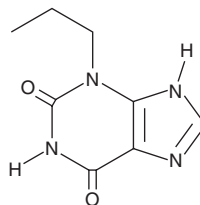
PRODUCT INFORMATION



3-Propylxanthine

Item No. 21746

CAS Registry No.: 41078-02-8
Formal Name: 3,9-dihydro-3-propyl-1H-purine-2,6-dione
Synonyms: D 4028, Enprofylline
MF: C₈H₁₀N₄O₂
FW: 194.2
Purity: ≥95%
UV/Vis.: λ_{max}: 271 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

3-Propylxanthine is supplied as a crystalline solid. A stock solution may be made by dissolving the 3-propylxanthine in the solvent of choice, which should be purged with an inert gas. 3-Propylxanthine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 3-propylxanthine in these solvents is approximately 0.5, 30, and 20 mg/ml, respectively.

3-Propylxanthine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 3-propylxanthine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 3-Propylxanthine 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

3-Propylxanthine is a xanthine derivative that antagonizes adenosine receptors (K_is = 44, 32, and 6.3 μM for A₁, A_{2A}, and A_{2B}, respectively) and cAMP phosphodiesterase (K_i = 42 μM).¹⁻³ Through these actions, 3-propylxanthine induces smooth muscle relaxation, blocks smooth muscle contraction and VEGF secretion driven by adenosine receptor agonists, and reduces bronchial hyperresponsiveness.^{2,4,5}

References

1. Linden, J., Thai, T., Figler, H., *et al.* Characterization of human A_{2B} adenosine receptors: Radioligand binding, western blotting, and coupling to Gq in human embryonic kidney 293 cells and HMC-1 mast cells. *Mol. Pharmacol.* **56**(4), 705-713 (1999).
2. Ogawa, K., Takagi, K., and Satake, T. Mechanism of xanthine-induced relaxation of guinea-pig isolated trachealis muscle. *Br. J. Pharmacol.* **97**(2), 542-546 (1989).
3. Schwabe, U., Ukena, D., and Lohse, M.J. Xanthine derivatives as antagonists at A₁ and A₂ adenosine receptors. *Naunyn-Schmiedeberg's Arch. Pharmacol.* **330**, 212-221 (1985).
4. Høier, B., Olsen, K.M., Nyberg, M., *et al.* Contraction-induced secretion of VEGF from skeletal muscle cells is mediated by adenosine. *Am. J. Physiol. Heart. Circ. Physiol.* **299**(3), H857-H862 (2010).
5. Koëter, G.H., Kraan, J., Boorsma, M., *et al.* Effect of theophylline and enprofylline on bronchial hyperresponsiveness. *Thorax* **44**(12), 1022-1026 (1989).

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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