

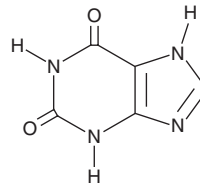
PRODUCT INFORMATION



Xanthine

Item No. 31499

CAS Registry No.: 69-89-6
Formal Name: 3,9-dihydro-1H-purine-2,6-dione
Synonyms: 2,6-Dihydroxypurine, NSC 14664
MF: C₅H₄N₄O₂
FW: 152.1
Purity: ≥98%
UV/Vis.: λ_{max}: 268 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

Xanthine is supplied as a crystalline solid. A stock solution may be made by dissolving the xanthine in the solvent of choice, which should be purged with an inert gas. Xanthine is soluble in the organic solvent DMSO (gently warmed) at a concentration of approximately 1 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of xanthine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of xanthine in PBS (gently warmed), pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Xanthine is a purine base and intermediate in the biosynthesis of uric acid (Item No. 16219).^{1,2} It is formed during mammalian purine catabolism in the liver via oxidation of hypoxanthine (Item No. 22254) by xanthine oxidase (XO), which also oxidizes xanthine to produce uric acid.^{1,3} Xanthine is also formed from guanine, xanthosine, or hypoxanthine during purine catabolism in plants.⁴ It has been found in a variety of commercial foodstuffs, including beer yeast, mushrooms, vegetables, fish, and beef.⁵ Urinary xanthine levels are decreased in patients with primary gout.⁶ Xanthine has also been used in the synthesis of xanthine derivatives that have anticancer or anti-inflammatory activities *in vitro*.⁷

References

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3. Garcia-Gil, M., Camici, M., Allegrini, S., et al. *Int. J. Mol. Sci.* **19(11)**, 3598 (2018).
4. Zrenner, R., Stitt, M., Sonnewald, U., et al. *Annu. Rev. Plant Biol.* **57**, 805-836 (2006).
5. Kaneko, K., Aoyagi, Y., Fukuuchi, T., et al. *Biol. Pharm. Bull.* **37(5)**, 709-721 (2014).
6. Puig, J.G., Mateos, F.A., Jiménez, M.L., et al. *Am. J. Med.* **85(4)**, 533-537 (1988).
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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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