

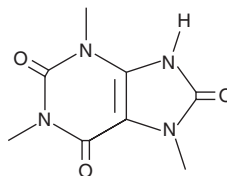
PRODUCT INFORMATION



1,3,7-Trimethyluric Acid

Item No. 16949

CAS Registry No.: 5415-44-1
Formal Name: 7,9-dihydro-1,3,7-trimethyl-1H-purine-2,6,8(3H)-trione
Synonyms: 8-oxo Caffeine, NSC 11259, NSC 95858, TMU
MF: C₈H₁₀N₄O₃
FW: 210.2
Purity: ≥98%
UV/Vis.: λ_{max}: 235, 289 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

1,3,7-Trimethyluric acid is supplied as a crystalline solid. A stock solution may be made by dissolving the 1,3,7-trimethyluric acid in the solvent of choice, which should be purged with an inert gas. 1,3,7-Trimethyluric acid is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 1,3,7-trimethyluric acid in these solvents is approximately 20 and 5 mg/ml, respectively.

1,3,7-Trimethyluric acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 1,3,7-trimethyluric acid should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 1,3,7-Trimethyluric acid has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

1,3,7-Trimethyluric acid is a derivative of uric acid (Item No. 16219) and a metabolite of caffeine (Item No. 14118).¹ It is formed from caffeine by the cytochrome P450 (CYP) isoform CYP3A4. 1,3,7-Trimethyluric acid (500 μM) scavenges hydroxyl radicals in a cell-free assay and inhibits t-butyl hydroperoxide-induced lipid peroxidation by 56.5% in isolated human erythrocyte membranes.²

References

1. Tassaneeyakul, W., Birkett, D.J., McManus, M.E., *et al.* Caffeine metabolism by human hepatic cytochromes P450: contributions of 1A2, 2E1 and 3A isoforms. *Biochem. Pharmacol.* **47(10)**, 1767-1776 (1994).
2. Bhat, V.B., Sridhar, G.R., Madyastha, K.M., *et al.* Efficient scavenging of hydroxyl radicals and inhibition of lipid peroxidation by novel analogues of 1,3,7-trimethyluric acid. *Life Sci.* **70(4)**, 381-393 (2001).

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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