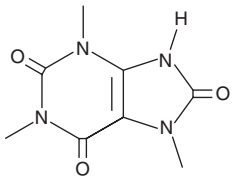
PRODUCT INFORMATION

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:	$C_8H_{10}N_4O_3$
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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM