

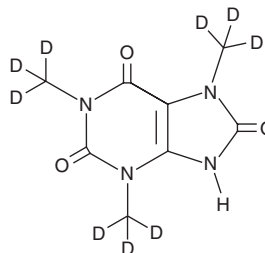
# PRODUCT INFORMATION



## 1,3,7-Trimethyluric Acid-d<sub>9</sub>

Item No. 9003567

**CAS Registry No.:** 117490-42-3  
**Formal Name:** 7,9-dihydro-1,3,7-tri(methyl-d<sub>3</sub>)-1H-purine-2,6,8(3H)-trione  
**Synonyms:** 8-oxo Caffeine-d<sub>9</sub>, TMU-d<sub>9</sub>  
**MF:** C<sub>8</sub>HD<sub>9</sub>N<sub>4</sub>O<sub>3</sub>  
**FW:** 219.2  
**Chemical Purity:** ≥95% (1,3,7-Trimethyluric Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>9</sub>); ≤1% d<sub>0</sub>  
**UV/Vis.:** λ<sub>max</sub>: 236, 290 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-d<sub>9</sub> is intended for use as an internal standard for the quantification of 1,3,7-trimethyluric acid (Item No. 16949) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

1,3,7-Trimethyluric acid-d<sub>9</sub> is supplied as a crystalline solid. A stock solution may be made by dissolving the 1,3,7-trimethyluric acid-d<sub>9</sub> in the solvent of choice, which should be purged with an inert gas. 1,3,7-Trimethyluric acid-d<sub>9</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 1,3,7-trimethyluric acid-d<sub>9</sub> in ethanol is approximately 1 mg/ml and approximately 30 mg/ml in DMSO and DMF.

### Description

1,3,7-Trimethyluric acid is a derivative of uric acid (Item No. 16219) and a metabolite of caffeine (Item No. 14118).<sup>1</sup> 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.<sup>2</sup>

### 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., and Madyastha, K.M. 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.

#### WARRANTY AND LIMITATION OF REMEDY

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#### 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