

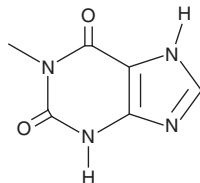
# PRODUCT INFORMATION



## 1-Methylxanthine

Item No. 35245

CAS Registry No.: 6136-37-4  
Formal Name: 3,9-dihydro-1-methyl-1H-purine-2,6-dione  
Synonyms: 1-MTX, 1-MX  
MF:  $C_7H_8N_4O_2$   
FW: 166.1  
Purity:  $\geq 98\%$   
UV/Vis.:  $\lambda_{\max}$ : 267 nm  
Supplied as: A solid  
Storage:  $-20^{\circ}\text{C}$   
Stability:  $\geq 4$  years  
Item Origin: Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

1-Methylxanthine is supplied as a solid. A stock solution may be made by dissolving the 1-methylxanthine in the solvent of choice, which should be purged with an inert gas. 1-Methylxanthine is slightly soluble in DMSO. It is also slightly soluble in water.

### Description

1-Methylxanthine is an active metabolite of caffeine (Item No. 14118).<sup>1,2</sup> It enhances ionizing radiation-induced DNA double-strand break formation in RKO colorectal cancer cells when used at a concentration of 3 mM.<sup>1</sup> 1-Methylxanthine (100  $\mu\text{M}$ ) inhibits the uptake of 6-carboxyfluorescein (Item No. 21233) in CHO cells overexpressing human organic anion transporter 1 (OAT1).<sup>2</sup> It has also been used as a biomarker of caffeine consumption.<sup>3</sup>

### References

1. Youn, H., Kook, Y.H., Oh, E.-T., *et al.* 1-Methylxanthine enhances the radiosensitivity of tumor cells. *Int. J. Radiat. Biol.* **85**(2), 167-174 (2009).
2. Rengelshausen, J., Lindenmaier, H., Cihlar, T., *et al.* Inhibition of the human organic anion transporter 1 by the caffeine metabolite 1-methylxanthine. *Biochem. Biophys. Res. Commun.* **320**(1), 90-94 (2004).
3. González-Domínguez, R., Castellano-Escuder, P., Carmona, F., *et al.* Food and microbiota metabolites associate with cognitive decline in older subjects: A 12-year prospective study. *Mol. Nutr. Food Res.* **65**(23), e2100606 (2021).

#### 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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