



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

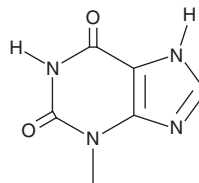
# PRODUCT INFORMATION



## 3-Methylxanthine

Item No. 34288

**CAS Registry No.:** 1076-22-8  
**Formal Name:** 3,9-dihydro-3-methyl-1H-purine-2,6-dione  
**Synonyms:** 3-MX, NSC 515466  
**MF:** C<sub>6</sub>H<sub>6</sub>N<sub>4</sub>O<sub>2</sub>  
**FW:** 166.1  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 272 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Description

3-Methylxanthine is a cGMP phosphodiesterase (PDE) inhibitor and a metabolite of theophylline (Item No. 23760) and caffeine (Item No. 14118).<sup>1-3</sup> It is formed from theophylline by the cytochrome P450 (CYP) isoform CYP1A2 and from caffeine via 6A5NF-1,3-dimethyluracil, 1,3,7-trimethyluric acid, or theobromine intermediates. 3-Methylxanthine inhibits cGMP PDE in isolated guinea pig trachealis muscle with an IC<sub>50</sub> value of 920 μM.<sup>1</sup> It is neurotoxic to mice, inducing convulsions with an ED<sub>50</sub> value of 1,107 nmol/kg.<sup>4</sup>

### References

1. Tanaka, H., Ogawa, K., Takagi, K., *et al.* Inhibition of cyclic GMP phosphodiesterase by xanthine derivatives relaxes guinea-pig trachealis smooth muscle. *Clin. Exp. Pharmacol. Physiol.* **18(3)**, 163-168 (1991).
2. Camandola, S., Plick, N., and Mattson, M.P. Impact of coffee and cacao purine metabolites on neuroplasticity and neurodegenerative disease. *Neurochem. Res.* **44(1)**, 214-227 (2019).
3. Ha, H.R., Chen, J., Freiburghaus, A.U., *et al.* Metabolism of theophylline by cDNA-expressed human cytochromes P-450. *Br. J. Clin. Pharmacol.* **39(3)**, 321-326 (1995).
4. Yamamoto, K., Toyama, E., Kawakami, J., *et al.* Neurotoxic convulsions induced by theophylline and its metabolites in mice. *Biol. Pharm. Bull.* **19(6)**, 869-872 (1996).

#### 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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 07/26/2021

#### 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