

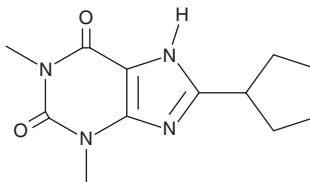
# PRODUCT INFORMATION



## 8-Cyclopentyl-1,3-dimethylxanthine

Item No. 29870

**CAS Registry No.:** 35873-49-5  
**Formal Name:** 8-cyclopentyl-3,9-dihydro-1,3-dimethyl-1H-purine-2,6-dione  
**Synonyms:** CPT, 8-Cyclopentyltheophylline, NSC 101806  
**MF:** C<sub>12</sub>H<sub>16</sub>N<sub>4</sub>O<sub>2</sub>  
**FW:** 248.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 275 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

8-Cyclopentyl-1,3-dimethylxanthine (CPT) is supplied as a crystalline solid. A stock solution may be made by dissolving the CPT in the solvent of choice, which should be purged with an inert gas. CPT is soluble in the organic solvent dimethyl formamide at a concentration of approximately 1 mg/ml.

CPT is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CPT should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. CPT has a solubility of approximately 0.04 mg/ml in a 1:20 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

CPT is an adenosine A<sub>1</sub> receptor antagonist (K<sub>i</sub> = 10.9 nM).<sup>1</sup> It is selective for adenosine A<sub>1</sub> over A<sub>2</sub> receptors (K<sub>i</sub> = 1,440 nM). CPT inhibits hypoxia-induced depression of evoked synaptic potentials in rat hippocampal slices in a concentration-dependent manner.<sup>2</sup> It increases secondary after-discharge duration in electrically induced seizures in rats when administered at doses of 2.5 mg/kg or higher.<sup>3</sup> CPT increases the response rate under a fixed-interval schedule of stimulus-shock termination in squirrel monkeys (ED<sub>50</sub> = 2.5 μmol/kg), indicating psychomotor stimulant effects.<sup>4</sup>

### References

1. Jacobson, K.A., Kiriasis, L., Barone, S., et al. Sulfur-containing 1,3-dialkylxanthine derivatives as selective antagonists at A<sub>1</sub>-adenosine receptors. *J. Med. Chem.* **32(8)**, 1873-1879 (1989).
2. Gribkoff, V.K., Bauman, L.A., and VanderMaelen, C.P. The adenosine antagonist 8-cyclopentyltheophylline reduces the depression of hippocampal neuronal responses during hypoxia. *Brain Res.* **512(2)**, 353-357 (1990).
3. Dragunow, M. and Robertson, H.A. 8-Cyclopentyl 1,3-dimethylxanthine prolongs epileptic seizures in rats. *Brain Res.* **417(2)**, 377-379 (1987).
4. Spealman, R.D. Psychomotor stimulant effects of methylxanthines in squirrel monkeys: Relation to adenosine antagonism. *Psychopharmacology (Berl.)* **95(1)**, 19-24 (1988).

#### 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, 10/05/2022

#### 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