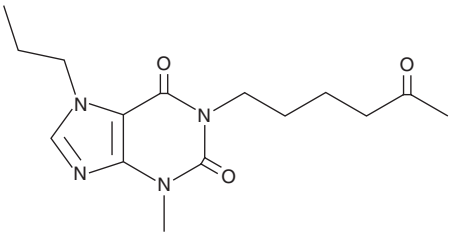
PRODUCT INFORMATION

Propentofylline

Item No. 29431

CAS Registry No.:	55242-55-2
Formal Name:	3,7-dihydro-3-methyl-1-(5-oxohexyl)-7-propyl-1H-purine-2,6-dione
Synonyms:	HOE 285, HWA 285
MF:	$C_{15}H_{22}N_4O_3$
FW:	306.4
Purity:	≥95%
UV/Vis.:	λ_{max}: 274 nm
Supplied as:	A 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

Propentofylline is supplied as a solid. A stock solution may be made by dissolving the propentofylline in the solvent of choice, which should be purged with an inert gas. Propentofylline is slightly soluble in acetonitrile and chloroform.

Description

Propentofylline is a xanthine derivative and neuroprotective agent.[1,2] It increases NGF production in primary mouse astroglia when used at concentrations ranging from 0.12 to 3.33 mM, with the maximum increase observed at 1.11 mM.[1] Propentofylline (20 µg/ml) reduces cell death induced by amyloid-β (1-42) (Aβ42; Item No. 20574) in primary rat hippocampal neurons.[2] Intravenous infusion of propentofylline (0.01, 0.05, and 0.1 mg/kg per minute) reduces infarct volume in a rat model of ischemic brain damage induced by permanent middle cerebral artery occlusion (MCAO) when administered following MCAO.[3] It inhibits cAMP phosphodiesterases, is an antagonist of adenosine A_1 and A_2 receptors, and binds to adenosine transporters.[4,5]

References

1. Shinoda, I., Furukawa, Y., and Furukawa, S. Stimulation of nerve growth factor synthesis/secretion by propentofylline in cultured mouse astroglial cells. *Biochem. Pharmacol.* **39(11)**, 1813-1816 (1990).
2. Koriyama, Y., Chiba, K., and Mohri, T. Propentofylline protects β-amyloid protein-induced apoptosis in cultured rat hippocampal neurons. *Eur. J. Pharmacol.* **458(3)**, 235-241 (2003).
3. Park, C.K. and Rudolphi, K.A. Antiischemic effects of propentofylline (HWA 285) against focal cerebral infarction in rats. *Neurosci. Lett.* **178(2)**, 235-238 (1994).
4. Nagata, K., Ogawa, T., Omosu, M., *et al.* In vitro and in vivo inhibitory effects of propentofylline on cyclic AMP phosphodiesterase activity. *Arzneimittelforschung* **35(7)**, 1034-1036 (1985).
5. Fredholm, B.B., Fastbom, J., Kvanta, A., *et al.* Further evidence that propentofylline (HWA 285) influences both adenosine receptors and adenosine transport. *Fundam. Clin. Pharmacol.* **6(3)**, 99-111 (1992).

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