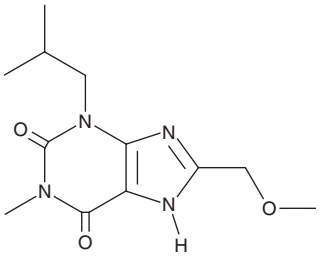
PRODUCT INFORMATION

8-Methoxymethyl-3-isobutyl-1-methylxanthine

Item No. 39151

CAS Registry No.: 78033-08-6
Formal Name: 3,9-dihydro-8-(methoxymethyl)-1-methyl-3-(2-methylpropyl)-1H-purine-2,6-dione
Synonyms: 8-MeOMeMIX, 8-methoxymethyl IBMX, 8-MM-IBMX, MMPX
MF: $C_{12}H_{18}N_4O_3$
FW: 266.3
Purity: ≥98%
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

8-Methoxymethyl-3-isobutyl-1-methylxanthine is supplied as a solid. A stock solution may be made by dissolving the 8-methoxymethyl-3-isobutyl-1-methylxanthine in the solvent of choice, which should be purged with an inert gas. 8-Methoxymethyl-3-isobutyl-1-methylxanthine is slightly soluble in chloroform and methanol.

Description

8-Methoxymethyl-3-isobutyl-1-methylxanthine is an inhibitor of phosphodiesterase 1 (PDE1; IC_{50} = 5 µM) and a derivative of IBMX (Item No. 13347).[1] It is selective for PDE1 over PDE2, PDE3, and PDE4 but also inhibits PDE5 (IC_{50}s = 37, >400, >400, and 2 µM, respectively). 8-Methoxymethyl-3-isobutyl-1-methylxanthine (30 µM) enhances forskolin-induced increases in intracellular calcium levels in isolated rat olfactory receptor neurons.[2] It induces relaxation of isolated human saphenous vein segments in the absence of endothelium (EC_{50} = 31 µM).[3] *In vivo*, 8-methoxymethyl-3-isobutyl-1-methylxanthine (200 µg/kg) enhances decreases in pulmonary artery pressure and vascular resistance induced by iloprost (Item No. 18215) in a rabbit model of pulmonary hypertension induced by the TP receptor agonist U-46619 (Item No. 16450).[4]

References

1. O'Grady, S.M., Jiang, X., Maniak, P.J., *et al.* Cyclic AMP-dependent Cl secretion is regulated by multiple phosphodiesterase subtypes in human colonic epithelial cells. *J. Membr. Biol.* **185(2)**, 137-144 (2002).
2. Otsuguro, K.-i., Gautam, S.H., Ito, S., *et al.* Characterization of forskolin-induced Ca^{2+} signals in rat olfactory receptor neurons. *J. Pharmacol. Sci.* **97(4)**, 510-518 (2005).
3. Gonçalves, R.L., Lugnier, C., Keravis, T., *et al.* The flavonoid dioclein is a selective inhibitor of cyclic nucleotide phosphodiesterase type 1 (PDE1) and a cGMP-dependent protein kinase (PKG) vasorelaxant in human vascular tissue. *Eur. J. Pharmacol.* **620(1-3)**, 78-83 (2009).
4. Schermuly, R.T., Inholte, C., Ghofrani, H.A., *et al.* Lung vasodilatory response to inhaled iloprost in experimental pulmonary hypertension: Amplification by different type phosphodiesterase inhibitors. *Respir. Res.* **6(1)**, 76 (2005).

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