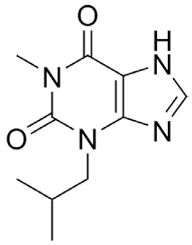
IBMX

Catalog Number P019-100MG

Catalog Number P019-1G



ARBOR ASSAYS®

FEATURES

- Pan-specific inhibitor of PDEs
- Increases cellular cAMP and cGMP
- Activates protein kinases

INTRODUCTION

IBMX is a widely-used non-specific inhibitor of cyclic AMP and cyclic GMP phosphodiesterases (PDEs) with IC50s from 7 to 50 µM for PDE1-5, PDE7, and PDE11. PDE8A, PDE8B, and PDE9 are insensitive to IBMX. By inhibiting PDEs, IBMX increases cellular cAMP and cGMP levels, activating cyclic-nucleotide-regulated protein kinases. Methylxanthines, including IBMX, caffeine, and theophylline, bind adenosine receptors, typically antagonizing the suppressive effects of natural agonists. Suppresses α-adrenoceptor-mediated 5-HT release from neuroendocrine epithelial cells (IC50 = 1.3 µM).

FORM:	White solid
MOLECULAR WEIGHT:	222.24
STORAGE:	Room temperature desiccated
FORMULA:	$C_{10}H_{14}N_4O_2$
CAS NUMBER:	28822-58-4
OTHER NAMES:	3,7-Dihydro-1-methyl-3-(2-methylpropyl)-1H-purine-2,6-dione, NSC 165960, 1-Methyl-3-Isobutylxanthine, Isobutylmethylxanthine
USES:	Soluble to 15 mg/mL in DMF or DMSO.

REFERENCES:

Fawcett, L., et al. Molecular cloning and characterization of a distinct human phosphodiesterase gene family: PDE11A. Proc. Natl. Acad. Sci. 97:7, 3702-3707 (2000).

Snyder, S.H., et al. Adenosine receptors and behavioral actions of methylxanthines [caffeine/theophylline/N6-cyclohexyladenosine/N6-(phenylisopropyl)adenosine]. Proc. Natl. Acad. Sci. 78:5, 3260-3264 (1981).

Freitag A, Wessler I, Racké K., Phosphodiesterase inhibitors suppress alpha2-adrenoceptor-mediated 5-hydroxytryptamine release from tracheae of newborn rabbits. Eur. J. Pharmacol. 354:1, 67-71. (1998)

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