Revision 1

Store at -20C

#13630

IBMX

50 mg

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Background

3-isobutyl-1-methylxanthine (IBMX) is a nonselective inhibitor of cAMP and cGMP phosphodiesterases (PDEs). Research studies show that IBMX inhibits many members of the PDE family, with the exceptions of PDE8A, PDE8B, and PDE9 (1-4). Treatment of cells with IBMX promotes accumulation of cAMP and cGMP, which leads to activation of cyclic-nucleotide-regulated protein kinases (5,6). Additional research indicates that IBMX can promote neuronal progenitor cell maturation *in vitro* (7).

Molecular Formula

$C_{10}H_{14}N_4O_2$

Molecular Weight

222.3 g/mol

Purity

>98%

CAS

28822-58-4

Solubility

Soluble in DMSO at 10mg/ml and EtOH at 5mg/ml.

Storage

Store lyophilized or in solution at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use

IBMX is supplied as a lyophilized powder. For a 250 mM stock, reconstitute the 50 mg in 899.7 µl DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 10-1,000 µM for 15 min-4 hr.

Background References

1. Fawcett, L. et al. (2000) *Proc Natl Acad Sci U S A* 97, 3702-7.
2. Fisher, D.A. et al. (1998) *Biochem Biophys Res Commun* 246, 570-7.
3. Hayashi, M. et al. (1998) *Biochem Biophys Res Commun* 250, 751-6.
4. Soderling, S.H. et al. (1998) *J Biol Chem* 273, 15553-8.
5. Chanoit, G. et al. (2011) *Cardiovasc Drugs Ther* 25, 299-306.
6. Zhang, R. et al. (2011) *PLoS One* 6, e20780.
7. Lepski, G. et al. (2013) *Front Cell Neurosci* 7, 155.

Trademarks and Patents

Limited Uses

applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.