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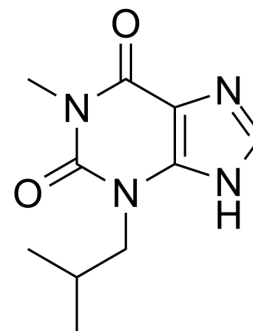
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IBMX (GMP)

Cat. No.:	HY-12318G
CAS No.:	28822-58-4
Molecular Formula:	C ₁₀ H ₁₄ N ₄ O ₂
Molecular Weight:	222.24
Target:	Phosphodiesterase (PDE)
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	IBMX (3-Isobutyl-1-methylxanthine) (GMP) is IBMX (HY-12318) produced by using GMP guidelines. GMP small molecules works appropriately as an auxiliary reagent for cell therapy manufacture. IBMX is a broad-spectrum phosphodiesterase (PDE) inhibitor ^{[1][2][3][4][5]} .
In Vitro	<p>IBMX (0.5 mM) induces neural-like cells for neural differentiation of cord blood derived mesenchymal-like stem cells^[1].</p> <p>IBMX induces initiation of the differentiation of programpre-adipocytes^[2].</p> <p>IBMX (500 μM) induces neuronal differentiation of small cell lung cancer^[3].</p> <p>IBMX (100 μM) induces differentiation of 3T3-L1 adipocytes^[4].</p> <p>IBMX (500 μM) induces adipose tissue-derived stem cells (ADSC) differentiate into neuron-like cells^[5].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Mol Cell. 2022 Dec 3;S1097-2765(22)01100-5.
- Clin Transl Med. 2023 Jul;13(7):e1326.
- Cancer Lett. 2022 Sep 20;215918.
- Int J Biol Sci. 2022 Apr 24;18(7):3082-3101.
- Cell Rep. 2021 Sep 21;36(12):109726.

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REFERENCES

- [1]. Tio M, et al. Roles of db-cAMP, IBMX and RA in aspects of neural differentiation of cord blood derived mesenchymal-like stem cells. PLoS One. 2010 Feb 24;5(2):e9398.
- [2]. Kim SP, et al. Transcriptional activation of peroxisome proliferator-activated receptor-gamma requires activation of both protein kinase A and Akt during adipocyte differentiation. Biochem Biophys Res Commun. 2010 Aug 13;399(1):55-9.
- [3]. Lange A, et al. Neuronal differentiation by indomethacin and IBMX inhibits proliferation of small cell lung cancer cells in vitro. Lung Cancer. 2011 Nov;74(2):178-87.

[4]. Elks ML, Manganiello VC. A role for soluble cAMP phosphodiesterases in differentiation of 3T3-L1 adipocytes. J Cell Physiol. 1985 Aug;124(2):191-8.

[5]. Ning H, et al. Insulin growth factor signaling mediates neuron-like differentiation of adipose-tissue-derived stem cells. Differentiation. 2008 May;76(5):488-94.

Caution: Product has not been fully validated for medical applications. For research use only.

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