

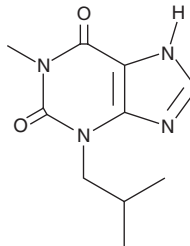
# PRODUCT INFORMATION



## IBMX

Item No. 13347

**CAS Registry No.:** 28822-58-4  
**Formal Name:** 3,9-dihydro-1-methyl-3-(2-methylpropyl)-1H-purine-2,6-dione  
**Synonyms:** Isobutylmethylxanthine, 1-Methyl-3-Isobutylxanthine, NSC 165960, SC-2964  
**MF:** C<sub>10</sub>H<sub>14</sub>N<sub>4</sub>O<sub>2</sub>  
**FW:** 222.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 272 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

IBMX is supplied as a crystalline solid. A stock solution may be made by dissolving the IBMX in the solvent of choice, which should be purged with an inert gas. IBMX is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of IBMX in ethanol and DMF is approximately 5 mg/ml and approximately 10 mg/ml in DMSO.

### Description

IBMX is a widely-used non-specific inhibitor of cyclic AMP and cyclic GMP phosphodiesterases (PDEs) (IC<sub>50</sub> = 19, 50, 18, 13, 32, 7, and 50 μM for PDE1, PDE2, PDE3, PDE4, PDE5, PDE7, and PDE11, respectively). PDE8A, PDE8B, and PDE9 are insensitive to IBMX.<sup>1</sup> 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.<sup>2</sup>

### References

1. Fawcett, L., Baxendale, R., Stacey, P., *et al.* Molecular cloning and characterization of a distinct human phosphodiesterase gene family: PDE11A. *Proc. Natl. Acad. Sci. USA* **97**(7), 3702-3707 (2000).
2. Snyder, S.H., Katims, J.J., Annau, Z., *et al.* Adenosine receptors and behavioral actions of methylxanthines. *Proc. Natl. Acad. Sci. USA* **78**(5), 3260-3264 (1981).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
[WWW.CAYMANCHEM.COM](http://WWW.CAYMANCHEM.COM)