

IBMX

Catalog No: tcsc3361



Available Sizes

Size: 50mg



Specifications

CAS No:

28822-58-4

Formula:

$C_{10}H_{14}N_4O_2$

Pathway:

Metabolic Enzyme/Protease

Target:

Phosphodiesterase (PDE)

Purity / Grade:

>98%

Solubility:

DMSO : 150 mg/mL (674.95 mM; Need ultrasonic)

Alternative Names:

3-Isobutyl-1-methylxanthine; Isobutylmethylxanthine

Observed Molecular Weight:

222.24

Product Description

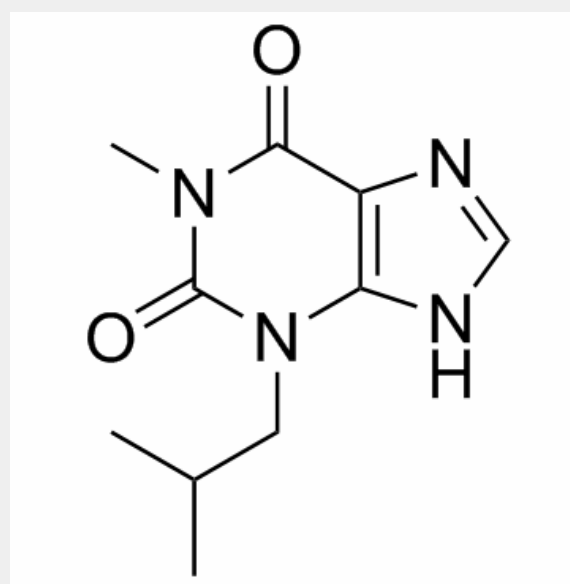
IBMX is a broad-spectrum phosphodiesterase (**PDE**) inhibitor, with **IC₅₀**s of 6.5, 26.3 and 31.7 μM for **PDE3**, **PDE4** and **PDE5**, respectively.

IC50 & Target: IC50: 6.5±1.2 μM(PDE3), 26.3±3.9 μM (PDE4), 31.7±5.3 μM (PDE5)^[1]

In Vitro:

At 100 μ M, KMUP-1 (a xanthine derivative) and IBMX are the most effective at inducing tracheal relaxation; the magnitude of the relaxation responses induced by KMUP-1 and IBMX are not significantly different^[1]. IBMX (100 μ M) activates renal outer medullary K⁺ (ROMK) channels (n=6, P+ (HK)-fed rats with IBMX (100 μ M) for 20 min leads to a significant increase in tubular cAMP content to 1.43 ± 0.35 pg/mm tubule length (n=14) compare with that measured in vehicle-treated controls (0.61 ± 0.13 pg/mm tubule length, n=12, P[2].

In Vivo: IBMX, a non-selective PDE inhibitor significantly decreases the liver glycogen storage (mg/g, IBMX 22 ± 1.5 P0.05) also mc2 does not change plasma glucose (control= 141 ± 3 and mc2= 145 ± 5). IBMX has the highest efficacy on increasing plasma glucose^[3]. Treatments with IBMX and Apocynin significantly decrease cold-induced elevation of right ventricular (RV) systolic pressure (23.5 ± 1.8 and 24.2 ± 0.6 mmHg, respectively) although they do not decrease RV pressure to the warm control levels. IBMX or Apocynin significantly reduces medial layer thickness (19.0 ± 0.9 , and 16.9 ± 0.8 μ m, respectively) and increases lumen diameter (62.7 ± 4.2 , and 59.5 ± 4.3 μ m, respectively) of small PAs in cold-exposed rats^[4].



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