

Product Data Sheet

Product Name: Inosine
Cat. No.: GC17902

Chemical Properties

Cas. No. 58-63-9

SMILES O[C@H]1[C@H](N2C(NC=NC3=O)=C3N=C2)O[C@H](CO)[C@H]1O

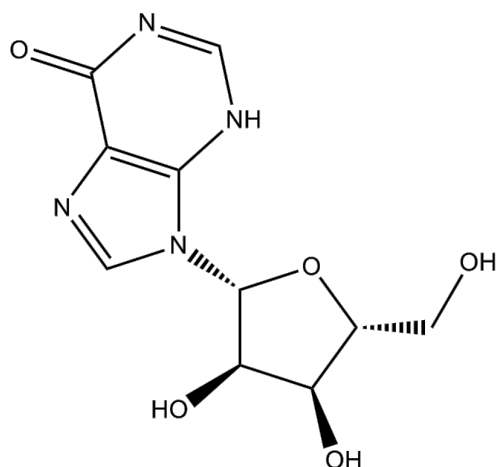
Formula $C_{10}H_{12}N_4O_5$ M.Wt 268.23

Solubility $\geq 13.4\text{mg/mL}$ in DMSO with gentle warming Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Inosine, an endogenous purine nucleoside, has immunomodulatory, neuroprotective, and analgesic properties. In vitro: Inosine has been shown to stimulate axonal growth in cell culture and promote corticospinal tract axons to sprout collateral branches after stroke, spinal cord injury and TBI in rodent models.[1] Inosine dose-dependently stimulates cAMP production mediated through the A2AR. Inosine dose-dependently induces A2AR-mediated ERK1/2 phosphorylation.[2] In vivo: The reference for Inosine is 1 or 10 mg/kg, i.p. Preventive treatment with inosine inhibits the development and

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Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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progression of EAE in C57Bl/6 mice. neuroinflammation and demyelinating processes are blocked by inosine treatment. Additionally, inosine consistently inhibits IL-17 levels in peripheral lymphoid tissue, as well as IL-4 levels and A2AR up-regulation in the spinal cord, likely, through an ERK1-independent pathway. [3] inosine acting through adenosine receptors (ARs) exerts a wide range of anti-inflammatory and immunomodulatory effects in vivo. [2]

References:

- [1]. Moore TL et al. Inosine enhances recovery of grasp following cortical injury to the primary motor cortex of the rhesus monkey. Restor Neurol Neurosci. 2016 Aug 1.
- [2]. Welihinda AA et al. The adenosine metabolite inosine is a functional agonist of the adenosine A2A receptor with a unique signaling bias. Cell Signal. 2016 Jun;28(6):552-60.
- [3]. Junqueira SC et al. Inosine, an Endogenous Purine Nucleoside, Suppresses Immune Responses and Protects Mice from Experimental Autoimmune Encephalomyelitis: a Role for A2A Adenosine Receptor. Mol Neurobiol. 2016 Apr 30.

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