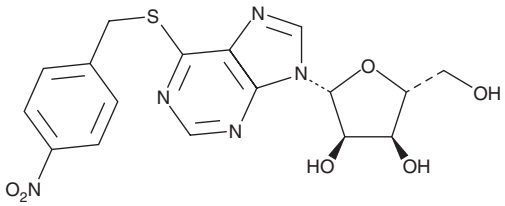
PRODUCT INFORMATION

S-(4-Nitrobenzyl)-6-thioinosine

Item No. 16403

CAS Registry No.: 38048-32-7
Formal Name: 6-S-[(4-nitrophenyl)methyl]-6-thio-inosine
Synonyms: NBMPR, NBTI, NSC 296962
MF: $C_{17}H_{17}N_5O_6S$
FW: 419.4
Purity: ≥98%
UV/Vis.: λ_{max}: 284 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

S-(4-Nitrobenzyl)-6-thioinosine is supplied as a crystalline solid. A stock solution may be made by dissolving the S-(4-nitrobenzyl)-6-thioinosine in the solvent of choice, which should be purged with an inert gas. S-(4-Nitrobenzyl)-6-thioinosine is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of S-(4-nitrobenzyl)-6-thioinosine in these solvents is approximately 10 and 15 mg/ml, respectively.

S-(4-Nitrobenzyl)-6-thioinosine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, S-(4-nitrobenzyl)-6-thioinosine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. S-(4-Nitrobenzyl)-6-thioinosine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

S-(4-Nitrobenzyl)-6-thioinosine is a nucleoside analog that competitively inhibits the equilibrative nucleoside transporter 1 (K_d = 0.1-1.0 nM; IC_{50}s = 4.6 and 3.6 nM in rat and human, respectively).[1,2] It blocks adenosine flux across the plasma membrane, thereby potentiating the interaction of extracellular adenosine with purinoreceptors, which can affect cardiac signaling associated with adenosine.[2]

References

1. Aronow, B., Allen, K., Patrick, J., *et al.* Altered nucleoside transporters in mammalian cells selected for resistance to the physiological effects of inhibitors of nucleoside transport. *J. Biol. Chem.* **260(10)**, 6226-6233 (1985).
2. Yao, S.Y.M., Ng, A.M.L., Muzyka, W.R., *et al.* Molecular cloning and functional characterization of nitrobenzylthioinosine (NBMPR)-sensitive (*es*) and NBMPR-insensitive (*ei*) equilibrative nucleoside transporter proteins (rENT1 and rENT2) from rat tissues. *J. Biol. Chem.* **272(45)**, 28423-28430 (1997).

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