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Product Information

8-Azaguanine Cell Culture tested

Product Number **A 5284**
Storage Temperature -0 °C

Product Description

Molecular Formula: C₄H₄N₆O

Molecular Weight: 152.1

CAS Number: 134-58-7

Synonyms: 2-amino-6-hydroxy-8-azapurine, 2-amino-6-oxy-8-azapurine, 5-amino-1,4-dihydro-7H-1,2,3-triazolo[4,5-d]pyrimidin-7-one¹

This product is a Hybri-Max[®] product and is hybridoma tested. It is γ -irradiated and tested for endotoxin levels.

8-Azaguanine is a triazolo analog of guanine that is a known inhibitor of purine nucleotide biosynthesis. In normal cells, the enzyme hypoxanthine-guanine-phosphoribosyl transferase (HGPRTase) can incorporate 8-azaguanine via the formation of 8-azaguanosine monophosphate (azaGMP), which leads to the blockage of purine nucleotide synthesis. Cells which are deficient in HGPRTase cannot incorporate 8-azaguanine *in vivo* and thus continue to function.² 8-Azaguanine was the first purine analog demonstrated to have carcinostatic effects in mouse malignancies.¹

The effect of 8-azaguanine on phosphoribosyl transferase activity in cell extract from *Methanococcus voltae* has been investigated.³ Procedures have been described for the establishment of 8-azaguanine-resistant hybridomas and for ouabain-resistant mutant human cell lines, using 8-azaguanine concentrations of 20 μ g/ml in soft agar and culture medium, respectively.^{4,5}

The synthesis of phosphonate acyclic derivatives of 8-azaguanine as inhibitors of purine nucleoside phosphorylase has been described.⁶ A series of acyclic nucleotide analogs of 8-azaguanine and other 8-azapurines has been synthesized, and their antiviral activity investigated.⁷

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

The contents of this product may be reconstituted with 10 ml of sterile cell culture medium. Once reconstituted to 10 ml, each vial of this product contains 6.6 $\times 10^{-3}$ M 8-azaguanine and is designated as a 50x solution. The stock then may be diluted to 500 ml and stored at 2-8 °C, or stored in aliquote stored at -20 °C.

References

1. The Merck Index, 12th ed., Entry# 928.
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3. Bowen, T. L., et al., Characterization of guanine and hypoxanthine phosphoribosyltransferases in *Methanococcus voltae*. J. Bacteriol., **178(9)**, 2521-2526 (1996).
4. Kontsekova, E., et al., One-step method for establishing 8-azaguanine-resistant hybridomas suitable for the preparation of triomas. J. Immunol. Methods, **145(1-2)**, 247-250 (1991).

5. Ramachandra, R. N., et al., Development and characterization of ouabain-resistant human fusion partners. *J. Immunol. Methods*, **142(1)**, 21-29 (1991).
6. Beauchamp, L. M., et al., Guanine, pyrazolo [3,4-d]pyrimidine, and triazolo[4,5-d]pyrimidine (8-azaguanine) phosphonate acyclic derivatives as inhibitors of purine nucleoside phosphorylase. *J. Med. Chem.*, **39(4)**, 949-956 (1996).
7. Holy, A., et al., Acyclic nucleotide analogs derived from 8-azapurines: synthesis and antiviral activity. *J. Med. Chem.*, **39(20)**, 4073-4088 (1996).

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