SIGMA-ALDRICH

3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

6-Azauracil

Product Number **A 1757**
Store at Room Temperature
Replacement for Product Code 12,329-3

Product Description

Molecular Formula: $C_3H_3N_3O_2$
Molecular Weight: 113.1
CAS Number: 461-89-2
Melting Point: 277-279 °C[1]
λ_{max}: 258 nm[1] (0.1 M HCl)
Extinction coefficient: E^{mM} = 5.2 (0.1 M HCl)
Synonyms: 6-Aza-2,4-dihydroxypyrimidine, 3,5-Dihydroxy-1,2,4-triazine, 1,2,4-Triazine-3,5(2H,4H)-dione

6-Azauracil is an inhibitor of enzymes that are involved in purine and pyrimidine biosynthesis, which leads to alterations in nucleotide pool levels *in vivo*. Subsequently, the depletion of nucleotide levels by 6-azauracil can diminish transcription elongation. The inhibition of GTP biosynthesis and IMP dehydrogenase activity in *Saccharomyces cerevisiae* by 6-azauracil has been studied.[2]

6-Azauracil has been widely used in investigations on modulation of transcription, especially in yeast model systems. In studies of mutations in components of the RNA polymerase II (Pol II) transcription elongation machinery, 6-azauracil has been shown to induce transcription in wild-type *Saccharomyces cerevisiae* of the PUR5 gene, which is one of four genes that encode IMPDH-related enzymes. By contrast, mutants which are sensitive to 6-azauracil, such as mutants with a disrupted gene encoding elongation factor SII or containing amino acid substitutions in Pol II subunits, are also defective in PUR5 induction.[3] Other studies on elongation-defective mutant yeast show that 6-azauracil treatment leads to diminished transcription of the GAL1 gene.[4] *Saccharomyces cerevisiae* mutants defective in the histone methyltransferase gene Set2 have also been shown to have increased susceptibility to 6-azauracil treatment.[5]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in 1 M NH_4OH (50 mg/ml), with heat as needed, yielding a clear to slightly hazy, colorless to faint yellow solution.

References

1. Falco, E. A., et al., 1,2,4-Triazine Analogs of the Natural Pyrimidines. J. Am. Chem. Soc., **78**, 1938-1941 (1956).
2. Exinger, F., and Lacroute, F., 6-Azauracil inhibition of GTP biosynthesis in Saccharomyces cerevisiae. Curr. Genet., **22(1)**, 9-11 (1992).
3. Shaw, R. J., and Reines, D., Saccharomyces cerevisiae transcription elongation mutants are defective in PUR5 induction in response to nucleotide depletion. Mol. Cell. Biol., **20(20)**, 7427-7437 (2000).
4. Wind-Rotolo, M., and Reines, D., Analysis of gene induction and arrest site transcription in yeast with mutations in the transcription elongation machinery. J. Biol. Chem., **276(15)**, 11531-11538 (2001).
5. Li, J., et al., Association of the Histone Methyltransferase Set2 with RNA Polymerase II Plays a Role in Transcription Elongation. J. Biol. Chem., **277(51)**, 49383-49388 (2002).

GCY/RXR 5/03