



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

## Product Information

### 2-Aminopurine

Product Number **A 3509**

Storage Temperature 2-8 °C

Replacement for Product Code 28,508-0

#### Product Description

Molecular Formula: C<sub>5</sub>H<sub>5</sub>N<sub>5</sub>

Molecular Weight: 135.1

CAS Number: 452-06-2

$\lambda_{\text{max}}$ : 314 nm<sup>1</sup>

Extinction coefficient: E<sup>mM</sup> = 4.0 (0.1 M HCl)

This product is a highly mutagenic base analog.<sup>2</sup> It is a fluorescent analogue of adenine. It can be used as a substitute for adenosine, but it lacks the groups critical for hydrogen bonding. However, its fluorescent properties allow it to be used as a probe for monitoring the structure and dynamics of DNA hairpins and for detecting base unstacking. It has also been used as a fluorescent probe for DNA base flipping by methyltransferases.<sup>3</sup>

This product is also a known inhibitor of protein kinases. It selectively blocks the induction of transcription of several interferon-inducible human genes through double-stranded RNA.<sup>4</sup> Induction of mRNA 561 and 6-16 in HeLaM cells by double-stranded RNA was completely inhibited by 10 mM 2-aminopurine, whereas cellular protein and RNA syntheses, as well as the induction of metallothionein mRNA by CdCl<sub>2</sub>, were unaffected by 2-aminopurine.

#### Precautions and Disclaimer

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

#### Preparation Instructions

This product is soluble in formic acid:water (1:1 v/v) (50 mg/ml) with heating.

#### Storage/Stability

A 150 mM solution of 2-aminopurine prepared in phosphate-buffered saline:glacial acetic acid (200:1) by heating at 60 °C and mixing can be aliquoted and stored frozen.<sup>4</sup> Before use, each aliquot needs to be thawed, heated, and mixed.

#### References

1. J. Chem. Soc., 2072 (1954).
2. Fagan, P.A., et al., An NMR Study of the Conformation of the 2-Aminopurine:Cytosine Mismatch in DNA. *Biochem.*, **35**, 4026-4033 (1996).
3. Holz, B., et al., 2-aminopurine as a fluorescent probe for DNA base flipping by methyltransferases. *Nucleic Acids Research*, **26(4)**, 1076-1083 (1998).
4. Tiwari, R.K. et al., Gene induction by interferons and double-stranded RNA:selective inhibition by 2-aminopurine. *Molecular and Cellular Biology*, **8(10)**, 4289-4294(1988).

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