

2-Aminopurine

Chemical Properties

CAS No. : 452-06-2

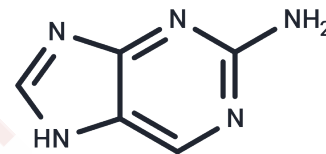
Formula: C₅H₅N₅

Molecular Weight: 135.13

Keep away from direct sunlight

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	2-Aminopurine is a double-stranded RNA-dependent protein kinase, protein kinase R (PKR) inhibitor.
Targets(IC50)	Autophagy,DNA/RNA Synthesis,PKA
In vitro	<p>1. DNA structure detection using 2-aminopurine</p> <p>1. Solution configuration: 2-Aminopurine is usually used at a concentration of 0.1–50 μM, depending on the experimental requirements and the sensitivity of the fluorescence signal.</p> <p>2. Material preparation:</p> <p>1) 2-aminopurine labeled oligonucleotides: 2-AP is inserted into a specific DNA sequence by solid phase synthesis.</p> <p>2) DNA sample: Oligonucleotides containing 2-AP, which can be single-stranded or double-stranded after hybridization with a complementary strand.</p> <p>3) Fluorescence spectrometer: A device that can detect fluorescence emission and attenuation, usually with an excitation wavelength in the range of 310-320 nm and an emission wavelength in the range of 370-380 nm.</p> <p>3. Steps:</p> <p>1) Oligonucleotide synthesis: 2-AP is inserted into a predetermined position in the DNA sequence during the synthesis process.</p> <p>2) Sample preparation: Prepare a 2-AP labeled DNA solution, and the concentration should be adjusted according to the experimental needs.</p> <p>3) Fluorescence measurement: Under an excitation wavelength of 310-320 nm, measure the fluorescence intensity and decay (emission wavelength 370-380 nm).</p> <p>4) Fluorescence decay analysis: Analyze the fluorescence decay curve to explore the stacking, conformational changes and interactions of DNA with other molecules (such as proteins or ligands).</p> <p>2. Detection of DNA conformational changes and binding interactions</p> <p>1. Material preparation:</p> <p>(1) 2-AP labeled oligonucleotides: Used to study the structural changes of DNA.</p> <p>(2) Binding ligand/protein: DNA binding protein, small molecule ligand or other DNA interaction molecules.</p> <p>(3) Fluorescence spectrometer: Used to detect fluorescence signals at appropriate wavelengths.</p>

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In vitro	<p>2. Steps:</p> <p>(1) DNA-protein binding: Incubate 2-AP labeled DNA with DNA binding protein or ligand.</p> <p>(2) Fluorescence measurement: Observe the changes in fluorescence intensity and decay after binding or conformational changes.</p> <p>(3) Data analysis: Determine the kinetics of ligand binding, DNA structural transitions and DNA-protein or ligand interactions through fluorescence changes.</p> <p>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.</p>
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Solubility Information

Solubility	DMSO: 10 mg/mL (74 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.4003 mL	37.0014 mL	74.0028 mL
5 mM	1.4801 mL	7.4003 mL	14.8006 mL
10 mM	0.740 mL	3.7001 mL	7.4003 mL
50 mM	0.148 mL	0.740 mL	1.4801 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Datta M, Liu J. A DNA Aptamer for 2-Aminopurine: Binding-Induced Fluorescence Quenching. Chem Asian J. 2024 Dec 2;19(23):e202400817.

Poddar S, Levitus M. Buffer-Dependent Photophysics of 2-Aminopurine: Insights into Fluorescence Quenching and Excited-State Interactions. J Phys Chem B. 2024 Mar 21;128(11):2640-2651.

Yang F, et al. 2-Aminopurine-based quencher-free DNA tweezers with fluorescence properties well tuned by surrounding bases. Anal Methods. 2024 Jan 25;16(4):576-582.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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