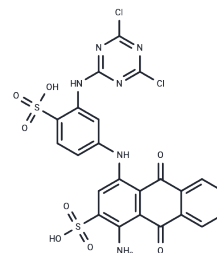


Reactive Blue 4

Chemical Properties

CAS No. :	13324-20-4
Formula:	C ₂₃ H ₁₄ Cl ₂ N ₆ O ₈ S ₂
Molecular Weight:	637.43
Storage:	Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	Reactive Blue 4, an anthraquinone dye, exhibits phytotoxic, cytotoxic, and genotoxic properties. It functions as a single colorimetric chemosensor for the sequential detection of multiple analytes, each with distinct optical responses, in aqueous media.
Targets(IC50)	Others
Cell Research	<p>Instructions</p> <p>I. Solution preparation</p> <ol style="list-style-type: none"> 1. Stock solution: Dissolve Reactive Blue 4 in deionized water or an appropriate solvent (such as ethanol, PBS) to prepare a stock solution with a concentration of 1-10 mM. 2. Working solution: Dilute the stock solution to a working concentration according to the experimental requirements, usually 0.1-1 mM. Deionized water or buffer solution can be used for dilution. <p>II. Operation steps</p> <ol style="list-style-type: none"> 1. Water quality analysis: Since Reactive Blue 4 can react with a variety of analytes under different optical responses, it is usually used for water quality testing. Add the working solution to the sample and measure the absorbance by colorimetry (spectrophotometer can be used). 2. Cell or biological tissue staining: Incubate cells or tissues with an appropriate concentration of dye (usually 1-10 μM) and stain for a specified time. After staining, the reaction signal in the cell can be analyzed by microscope or flow cytometer. 3. Surfactant determination: Use this dye as a sensor in aqueous solution to monitor the concentration of surfactant in water. The concentration of the pollutant can be inferred by the change in the absorbance of the dye. 4. Fluorescence detection: Excitation and emission wavelengths: Reactive Blue 4 can be excited in the UV or visible light band, with a commonly used excitation wavelength of 480-500 nm and an emission wavelength of approximately 590 nm. Use a spectrophotometer or fluorescence microscope to observe the stained samples. 5. Calibration and control: <ol style="list-style-type: none"> 1) Control group: A control group without dye is set up to ensure the specificity of the experiment. 2) Standard curve: A standard curve can be established using samples of known concentrations of analytes to quantitatively analyze the sensitivity and specificity of the reaction. <p>Precautions:</p>

Cell Research	<ol style="list-style-type: none"> 1. Toxicity: Reactive Blue 4 is phytotoxic, cytotoxic, and genotoxic, so appropriate safety measures should be taken when using it, such as wearing protective gloves and glasses, and operating in a well-ventilated environment. 2. Photosensitivity: The dye is light-sensitive and should be avoided from prolonged exposure to strong light. 3. Storage conditions: It should be stored in a cool and dry place, at a temperature not exceeding 4°C, and avoid repeated freezing and thawing. 4. Solubility: The dye has good solubility in water, but it should be ensured that there are no particles in the solution. <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: 83.33 mg/mL (130.73 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	<p>10% DMSO+40% PEG300+5% Tween-80+45% Saline: 3.3 mg/mL (5.18 mM),Sonication is recommended.</p> <p><i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i></p>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5688 mL	7.844 mL	15.688 mL
5 mM	0.3138 mL	1.5688 mL	3.1376 mL
10 mM	0.1569 mL	0.7844 mL	1.5688 mL
50 mM	0.0314 mL	0.1569 mL	0.3138 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

- Oyewusi HA,et al. Biological and molecular approaches of the degradation or decolorization potential of the hypersaline Lake Tuz Bacillus megaterium H2 isolate. J Biomol Struct Dyn. 2024 Aug;42(12):6228-6244.
- Bhoyar SS, et al. Wheat bran as an efficient agro-process waste for enhanced yellow laccase production by Lentinus tigrinus SSB_W2 and its application in anthraquinone dye degradation. 3 Biotech. 2024 Jan;14(1):33.
- Praipipat P,et al. Powdered and beaded sawdust materials modified iron (III) oxide-hydroxide for adsorption of lead (II) ion and reactive blue 4 dye. Sci Rep. 2023 Jan 11;13(1):531.

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