

ABTS diammonium salt

Chemical Properties

CAS No. : 30931-67-0

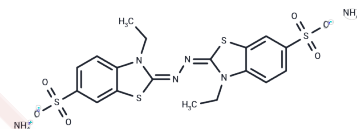
Formula: C₁₈H₂₄N₆O₆S₄

Molecular Weight: 548.68

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	ABTS diammonium salt (AzBTS-(NH ₄) ₂) is a substrate for horseradish peroxidase (HRP). ABTS diammonium salt is a water-soluble redox chromogenic probe that, upon oxidation, generates a stable blue-green cationic radical (ABTS ^{•+}). It exhibits characteristic absorption peaks at 405 nm, 414 nm, 645 nm, and 734 nm (with 734 nm commonly used as the detection wavelength) and serves as a classic tool for assessing antioxidant activity, peroxidase activity, and free radical scavenging capacity.
Targets(IC50)	Others
In vitro	<p>Instructions</p> <p>I. Solution preparation</p> <p>1. Mother solution preparation: ABTS diammonium salt is dissolved in water, usually distilled water or deionized water. The concentration is generally 1–10 mM, and the specific concentration depends on the experimental requirements.</p> <p>II. Operation steps</p> <p>1. Sample preparation: The enzyme substrate to be detected is generally a solution containing horseradish peroxidase (HRP). ABTS can react with hydrogen peroxide catalyzed by HRP to generate a colored product.</p> <p>2. Reaction conditions:</p> <p>Reaction buffer: It is recommended to use a buffer in the pH range of 3.5 to 4.5 (such as citric acid buffer).</p> <p>Reaction temperature: The reaction is usually carried out at room temperature, and the reaction time is 10–30 minutes.</p> <p>Catalyst: Hydrogen peroxide (H₂O₂) is added to the ABTS solution as an oxidant, and HRP catalyzes the reaction to generate a colored product.</p> <p>3. Product Detection: The resulting product (usually green) can be quantified for HRP activity by measuring absorbance at 414 nm using a UV-Vis spectrophotometer.</p> <p>4. Product Isolation and Purification: If desired, the resulting product can be further purified by chromatography, especially when the ABTS reaction is used for bioanalysis.</p> <p>5. For purification and characterization, peroxidase-positive transformants are grown on a large scale (XL) under conditions that produce active protein in the culture supernatant. After 160 h of culture, when the activity relative to the substrate ABTS reaches 55,000 U/L, the supernatant containing peroxidase is collected. With ABTS as substrate, peroxidase activity decreases significantly when H₂O₂ concentrations rise above 0.125 mM, indicating that the enzyme is inhibited by H₂O₂. Depending on the</p>

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In vitro	substrate measured, the maximum reaction rate can reach 31.2 to 125 μ M. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.
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Solubility Information

Solubility	DMSO: 64.4 mg/mL (117.37 mM),Sonication is recommended. H2O: 47 mg/mL (85.66 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2.5 mg/mL (4.56 mM),Sonication is recommended. <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>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8226 mL	9.1128 mL	18.2256 mL
5 mM	0.3645 mL	1.8226 mL	3.6451 mL
10 mM	0.1823 mL	0.9113 mL	1.8226 mL
50 mM	0.0365 mL	0.1823 mL	0.3645 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

Matsuda H, et al. Evaluation of ELISA with ABTS, 2-2'-azino-di-(3-ethylbenzthiazoline sulfonic acid), as the substrate of peroxidase and its application to the diagnosis of schistosomiasis. Jpn J Exp Med. 1984 Jun;54(3):131-8.

Lauber C, et al. Identification, heterologous expression and characterization of a dye-decolorizing peroxidase of Pleurotus sapidus. AMB Express. 2017 Aug 23;7(1):164.

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