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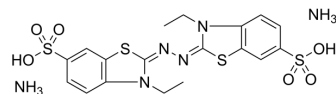
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ABTS diammonium salt

Cat. No.:	HY-15902
CAS No.:	30931-67-0
Molecular Formula:	C ₁₈ H ₂₄ N ₆ O ₆ S ₄
Molecular Weight:	548.68
Target:	Fluorescent Dye
Pathway:	Others
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 2 years; -20°C, 1 year (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H₂O : ≥ 50 mg/mL (91.13 mM)
 DMSO : 20.83 mg/mL (37.96 mM; Need ultrasonic)
 * "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	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

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: PBS
Solubility: 50 mg/mL (91.13 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (3.79 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (3.79 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (3.79 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ABTS diammonium salt is a substrate for horseradish peroxidase (HRP) conjugate.

In Vitro

A micro-technique of enzyme-linked immunosorbent assay (ELISA) using ABTS, as a substrate for HRP conjugate is studied. In a comparative study among 4 substrates, namely; 5-aminosalicylic acid (5AS), O-phenylenediamine (OPD), O-tolidine (OT)

and ABTS, for HRP in terms of sensitivity, ABTS is the most sensitive, stable and the best in visuality by its bluish-green color [1]. ABTS is a typical peroxidase substrate. For purification and characterization peroxidase positive transformants are cultivated in large scale (XL) under conditions that yield active protein in the culture supernatant. After 160 h cultivation an activity of 55,000 U/L in relation to the substrate ABTS is achieved and the supernatant containing the peroxidase is harvested. With ABTS as substrate the peroxidase activity falls significantly when the H₂O₂ concentration rose above 0.125 mM, indicating that the enzyme is inhibited by H₂O₂. Maximum reaction rates depending upon substrate tested reached values between 31.2 and 125 μM^[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [2]

Enzyme activity is determined photometrically using a temperature controlled multi-mode plate reader or alternatively in a UV/Vis spectrophotometer. Reactions are initiated by addition of the enzyme. Enzyme activity is measured over a period of 10 min at 25°C at the appropriate wavelength for the substrate. One unit (1 U) is defined as the amount of enzyme that converts 1 μmol substrate per minute. Various H₂O₂ concentrations (0-1250 μM, enzyme concentrations (0.27-54 nM) and substrate concentrations are used to determine the enzyme activity. The activity of rPsaDyP vs ABTS is determined in 100 mM sodium acetate buffer at pH 3.8 and a final H₂O₂ concentration of 125 μM. Production of the ABTS cation radical is studied at 420 nm (ϵ_{420} 36,000 L mol⁻¹ cm⁻¹)^[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Biotechnol Bioeng. 2021 Nov 29.
- Appl Sci. 2023 Oct 25, 13(21), 11681.

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REFERENCES

[1]. 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.

[2]. 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.

Caution: Product has not been fully validated for medical applications. For research use only.

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