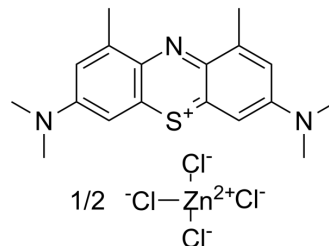


Dimethyl methylene blue zinc chloride double salt

Cat. No.:	HY-W751238
CAS No.:	931418-92-7
Molecular Formula:	C ₁₈ H ₂₂ N ₃ S.1/2ZnCl ₄
Molecular Weight:	416.04
Target:	Fluorescent Dye
Pathway:	Others
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H₂O : 5.83 mg/mL (14.01 mM); ultrasonic and warming and heat to 60°C)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	2.4036 mL	12.0181 mL	24.0361 mL
5 mM	0.4807 mL	2.4036 mL	4.8072 mL
10 mM	0.2404 mL	1.2018 mL	2.4036 mL

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

BIOLOGICAL ACTIVITY

Description

Dimethyl methylene blue zinc chloride double salt (DMMB) is a cationic dye. Dimethyl methylene blue zinc chloride double salt competitively binds to the active site of the PANI-Benz-Ag nanocomposite with endotoxin, releasing DMMB and increasing the fluorescence intensity. Dimethyl methylene blue zinc chloride double salt can be used as a fluorescent probe for the detection of bacteria (such as E. Coli) endotoxin^[1]. Dimethyl methylene blue zinc chloride double salt can be used for the quantification of sulfated glycosaminoglycans^[2].

In Vitro

Dimethyl methylene blue zinc chloride double salt can be used as a fluorescent probe for the detection of bacteria (such as E. Coli) endotoxin, the detection protocol is as follows^[1]:

1. Sample Preparation: Incubate the sample with a solution of Dimethyl methylene blue zinc chloride double salt (DMMB) to allow it completely binding to Lipopolysaccharide (LPS) (HY-D1056), forming a fluorescence quenched complex.
2. Introduction of the Nanocomposite Sensor: Add a defined quantity of PANI-benzimidazole-Ag nanocomposite to the mixture.
3. Competitive Binding and Displacement: Owing to its higher affinity for endotoxin, the nanocomposite displaces LPS from the Dimethyl methylene blue zinc chloride double salt-LPS complex, leading to the recovery of fluorescence.
4. Fluorescence Detection and Analysis: Monitor the reaction area using confocal fluorescence microscopy. Record fluorescence images and quantify the signal recovery to determine endotoxin concentration.

Dimethyl methylene blue zinc chloride double salt can be used for the quantification of sulfated glycosaminoglycans^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Alemu T A, et al. Highly sensitive detection of bacteria (E. Coli) endotoxin using novel PANI-benzimidazole-Ag nanocomposite by DMMB dye displacement assay[J]. Materials Research Express, 2023, 10(7): 075302.

[2]. Ladner YD, et al. The Dimethylmethylene Blue Assay (DMMB) for the Quantification of Sulfated Glycosaminoglycans. Methods Mol Biol. 2023;2598:115-121.

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

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