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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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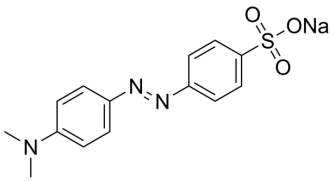
Methyl Orange

Cat. No.:	HY-118907
CAS No.:	547-58-0
Molecular Formula:	$C_{14}H_{14}N_3NaO_3S$
Molecular Weight:	327.33
Target:	Fluorescent Dye
Pathway:	Others
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (190.94 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0550 mL	15.2751 mL	30.5502 mL
5 mM	0.6110 mL	3.0550 mL	6.1100 mL
10 mM	0.3055 mL	1.5275 mL	3.0550 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (6.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Methyl Orange is a soluble azo dye commonly used as an acid-base indicator and for staining cells and tissue sections, as well as for dyeing textiles. Methyl Orange appears red at a pH of 3.1 and changes to bright yellow as the pH increases to 4.4. Methyl Orange (500 mg/L) exhibits cytotoxicity and can cause DNA damage[1][2][3].

In Vivo

1. Acid-Base Indicator[2]
Methyl Orange exhibits a distinct color change at different pH values:
pH < 3.1: Red
pH 3.1 - 4.4: Orange
pH > 4.4: Bright Yellow
2. Methyl Orange Vivo Staining Effects and Toxicity Studies[3]

2.1 Preparation of Working Solution
Dissolve Methyl Orange in Hoagland nutrient solution to a concentration of 2.0 mmol/L.
2.2 Vivo Staining
(1).Select healthy, uniformly sized, well-rooted, and pest-free Spider Plant cuttings and transplant them into Hoagland nutrient solution containing 2.0 mmol/L Methyl Orange at pH 6.5. Change the nutrient solution every 3 days.
(2).On days 20, 40, and 60 of treatment, randomly select 10 mature, healthy, pest-free leaves from each plant and measure the leaf color parameters in the middle of the leaf surface using an NC-9801 handheld colorimeter.
(3).On day 60 of treatment, measure the biomass and root-to-shoot ratio, where root-to-shoot ratio = (fresh weight of underground part / fresh weight of above-ground part) × 100%.
(4).Starting from day 10 of treatment, measure leaf nutrient content every 10 days, including soluble sugars, starch, soluble proteins, total nitrogen, chlorophyll, and carotenoids.
1.3 Data AnalysisPerform significance analysis using SPSS 22.0 software to determine the staining effect of Methyl Orange on Spider Plants and its impact on their biological activity.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Alaguprathana M, et al. Cytogenotoxicity assessment in Allium cepa roots exposed to methyl orange treated with Oedogonium subplagiostomum AP1. Environ Res. 2022 Oct;213:113612.

[2]. □□□, □. □□□□□□□□□□□□□□□□□□□□□□□□□□□□[J]. □□□□□□□□□, 2017, 37(5): 80-87.

[3]. Sandberg, et al. Kinetics of acid dissociation-ion recombination of aqueous methyl orange. The Journal of Physical Chemistry. 1972, 76 (26): 4023–4025. of aqueous methyl orange. The Journal of Physical Chemistry. 1972

[4]. Ahmad M, et al. Photocatalytic degradation of methyl orange from wastewater using a newly developed Fe-Cu-Zn-ZSM-5 catalyst. Environ Sci Pollut Res Int. 2020;27(21):26239-26248.

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