Crystal Violet

Cat. No.: HY-B0324A

CAS No.: 548-62-9

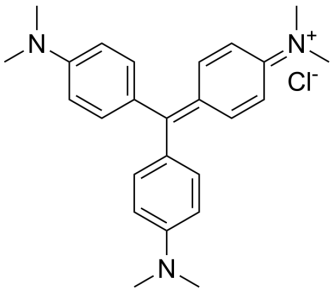
Molecular Formula: $C_{25}H_{30}ClN_3$

Molecular Weight: 407.98

Target: Influenza Virus; Bacterial; Fluorescent Dye

Pathway: Anti-infection; Others

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 1 year; -20°C, 6 months (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (245.11 mM)

H_2O : 5 mg/mL (12.26 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4511 mL	12.2555 mL	24.5110 mL
5 mM	0.4902 mL	2.4511 mL	4.9022 mL
10 mM	0.2451 mL	1.2256 mL	2.4511 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: ≥ 2.5 mg/mL (6.13 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.13 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.13 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Crystal Violet, also known as Gentian violet, methyl violet 10B, is a triphenyl-methane, an alkaline dye that binds to DNA in the nucleus of a cell, staining it a deep purple. It is often used for Gram staining to classify bacteria, or for cell or histological staining[1].

In Vitro

General Protocol

1.Preparation of MitoSOX Red working solution
Dilute the 2 g Crystal Violet in 20 mL 95% ethanol andmixed with 80 ml 1% ammonium oxalate solution solution for 24 h to obtain working solution.
2.Sample processing
2.1 Paraffin section:
First dewaxing with xylene for 5-10 min, then with fresh xylene, then dewaxing with 100% ethanol for 5 min after dewaxing for 5-10 min. Then 90% ethanol was used for 2 min. At last, 70% ethanol was used for 2 min. DDH_2O 2 min.
2.2 Frozen section:
distilled water for 2 min.
2.3 Tissue culture cells:
fixed with 4% paraformaldehyde for more than 10 min. Wash with distilled water for 2 min, replace with fresh distilled water, and wash again for 2 min.
Note: Other fixatives can be selected according to specific experiments.
3.Crystal violet staining
3.1 After the sample to be tested is treated with the above method, the crystal violet dyeing solution is directly added and dyed for 10 minutes at room temperature (the dyeing solution needs to cover the sample, and the specific dyeing time can be adjusted according to the required dyeing results).
3.2 Wash well in distilled water.
3.3 Dry at room temperature.
3.4 Observe and photograph by light microscope.

Storage
4°C, 2 year
Protect from light

Precautions
1. It is recommended to take 1-2 samples for pre-test when using this product for the first time.
2. This product is for R&D use only, not for drug, household, or other uses.
3. For your safety and health, please wear a lab coat and disposable gloves to operate.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Exp Clin Cancer Res. 2018 Nov 29;37(1):294.
- Cell Death Dis. 2023 Aug 29;14(8):573.
- Cell Death Dis. 2022 Jun 20;13(6):557.
- Drug Deliv. 2022 Dec;29(1):3123-3133.
- Int J Mol Sci. 2021 Aug 16;22(16):8792.

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REFERENCES

[1]. Xiao X, et al. Analysis of trace malachite green, crystal violet, and their metabolites in zebrafish by surface-coated probe nanoelectrospray ionization mass spectrometry. Talanta. 2020 Sep 1;217:121064.

[2]. Beveridge, T.J. and S. Schultze-Lam, The response of selected members of the archaea to the gram stain. Microbiology, 1996. 142 (Pt 10): p. 2887-95.

[3]. Coico, R., Gram staining. Curr Protoc Microbiol, 2005. Appendix 3: p. Appendix 3C.

[4]. Bil, J., et al., Statins potentiate cytostatic/cytotoxic activity of sorafenib but not sunitinib against tumor cell lines in vitro. Cancer Lett, 2010. 288(1): p. 57-67.

[5]. Nagayama A. Inactivation of influenza A virus by gentian violet (GV) and GV-dyed cotton cloth, and bactericidal activities of these agents. J Infect Chemother. 2006 Apr;12(2):73-9.

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