

Crystal Violet Aqueous Solution (5%)

Cat. No.: C1520409 | Pack size: 100 mL | Storage: Protected from light, room temperature

Overview

Crystal Violet Aqueous Solution (5%) is a BioReagent biological stain suitable for microbiology and microscopy. Crystal violet, also known as methyl violet or gentian violet, is a commonly used synthetic basic dye and an important dye for Gram staining of bacteria.

Basic dyes carry positively charged chromogenic ions after ionization and readily bind negatively charged stained substances. Bacteria typically carry a negative charge in alkaline, neutral and weakly acidic environments, making them suitable for staining with basic dyes.

Key Features

- 5% aqueous crystal violet / gentian violet solution
- Suitable for microbiology, biological staining and microscopy
- Can stain tissues or cells deep purple
- Used as a biological stain and in Gram-staining related workflows

Product Information

Item	Description
Synonyms	5% Gentian Violet Solution
CAS No.	548-62-9
Molecular formula / MW	C ₂₅ H ₃₀ N ₃ Cl·9H ₂ O / 407.98
Specifications & Purity	BioReagent, suitable for microbiology, Biological Stain, for microscopy, 5%
Stability & Storage	Store at room temperature long term (12 months). Store in the dark.
Storage Conditions	Protected from light, room temperature
Shipping	Normal
Grade	Biological Stain, BioReagent, for microscopy, suitable for microbiology

Contents & Storage

Cat. No.	Product	Size	Storage
C1520409-100mL	Crystal Violet Aqueous Solution (5%)	100 mL	RT, protect from light

Materials Required But Not Supplied

Item	Recommended Specification	Purpose
Personal protective equipment	Lab coat, disposable gloves, eye protection	Safe dye handling
Slides / coverslips	Prepared tissue, frozen section or cell sample	Specimen support
Xylene and ethanol series	As required for paraffin sections	Deparaffinization and hydration
4% paraformaldehyde	For cultured cells when needed	Cell fixation
Distilled water	Fresh	Rinsing
Microscope	Bright-field microscope	Observation and imaging

Preparation Before Use

1. Bring reagent to room temperature before use.
2. Prepare paraffin sections, frozen sections or cultured cells according to the appropriate sample workflow.
3. For first use with a new sample type, conduct a pre-experiment with 1-2 samples to optimize staining time.

Protocol

Operating Procedures (For Reference Only)

1. Sample Preparation

① For paraffin sections:

Deparaffinize in xylene for 5–10 min.

Replace with fresh xylene and deparaffinize for another 5–10 min.

Treat with absolute ethanol for 5 min.

Treat with 90% ethanol for 2 min.

Treat with 70% ethanol for 2 min.

Rinse with distilled water for 2 min.

② For frozen sections:

Rinse with distilled water for 2 min.

③ For cultured cells:

Fix with 4% paraformaldehyde for at least 10 min.

Wash with distilled water for 2 min.

Replace with fresh distilled water and wash for another 2 min.

2. Crystal Violet Staining

① Stain with crystal violet staining solution for 5–10 min; adjust the time according to staining results and requirements.

② Wash thoroughly with distilled water or tap water, then observe and photograph.

Expected Results

Target	Expected Color
Tissues or cells	Deep purple

Storage & Handling

Store as indicated on the product label: Protected from light, room temperature.

Shelf life: Store at room temperature long term (12 months). Store in the dark.

Safety & Precautions

1. Crystal violet is harmful to the human body; use proper protective measures.
2. For your safety and health, wear a lab coat and disposable gloves during operation.
3. This product is for research use only and shall not be used for any other purposes.
4. Avoid skin and eye contact and dispose of waste according to institutional procedures.

Quality Control

QC Item	Method	Acceptable Range
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QC Item	Method	Acceptable Range
Appearance	Visual inspection	Conforms to the appearance described in this manual; no obvious contamination or abnormal precipitation unless specified.
Identity and labeling	Receipt inspection	Catalog number, lot number, size, storage condition and expiry date are legible.
Functional check	Run with representative sample or positive control	Expected staining, preservation, coagulation or assay performance is observed under the recommended procedure.

Troubleshooting

Issue	Possible Causes	Corrective Action
Weak staining	Staining time too short or reagent exhausted	Increase staining time within the recommended range or replace reagent.
Overstaining / high background	Staining time too long or inadequate washing	Shorten staining time and rinse thoroughly with water.
Uneven staining	Uneven sample thickness or insufficient reagent coverage	Prepare uniform smears/sections and ensure the specimen is fully covered.
Precipitate on slide	Unfiltered or aged staining solution	Filter staining solution when required and replace regularly.
Unexpected color	pH or contamination effects	Use clean slides and freshly prepared or uncontaminated reagents.

Recommended Applications

Microbiology staining · Gram-staining workflows · Cell staining · Microscopy staining · Acid-base indicator and colorimetric research applications

Contact & Global Offices

Whether you have a technical question, need help with a quotation, or want to inquire about an order, our regional teams are ready to assist. Please contact the office for your region; for general inquiries, the North American office is the corporate primary.

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Limitations & Disclaimer

- For Research Use Only (RUO). Not for use in human or animal diagnostics, therapeutics, or in vivo applications. Not for food, cosmetic, or household use.
- This product is not a CE-marked in vitro diagnostic device under IVDR (EU) 2017/746 and is not an FDA-cleared device under 21 CFR. Use is restricted to verified businesses, institutions, and qualified professionals for research and development purposes.
- Where any kit component is classified as hazardous under CLP (EC) 1272/2008 or OSHA HCS (29 CFR 1910.1200), the product Safety Data Sheet (SDS) takes precedence over this document for handling, storage, and disposal information.
- Performance depends on sample type, sample condition, handling, and operator technique. Users are responsible for validating the kit for their specific application.
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