Melzer's Reagent

Cat. No.: M1508164 | Pack size: 10 mL | Storage: -20 °C; protect from light

Overview

Melzer's Reagent is an iodine-containing reagent historically used in mycology. It contains chloral hydrate, potassium iodide, iodine, and deionized water and is commonly used with PVLG solution.

The reagent is used for amyloidity analysis of fungal spore ornamentation or entire spores and assists fungal identification. Reaction is usually rapid, although in some cases up to 20 min may be required for observation.

Key Features

- Classical mycological reagent for amyloid, pseudoamyloid/dextrinoid, and inamyloid reactions
- Chloral hydrate component helps clear dark substances and increase transparency
- Potassium iodide improves iodine solubility and iodine acts as the primary staining agent
- Suitable for microscopic observation of fungal tissues, cells, and spores

Contents & Storage

Cat. No.	Component	Size	Storage
M1508164	Melzer's Reagent	10 mL	-20 °C; protect from light

Materials Required But Not Supplied

Item	Recommended Specification	Purpose
Test sample	Fungal tissue, cells, or spores	Staining target
PVLG solution	User-supplied, optional	Mounting/observation
Potassium hydroxide solution	For pretreatment only where needed	Hemiamyloid differentiation
Slides and coverslips	Clean microscopy grade	Microscopic preparation

Item	Recommended Specification	Purpose
Microscope and tools	Microscope, dissecting needle/pipette, forceps	Observation and manipulation

Preparation Before Use

1. Equilibrate reagent as needed and protect from light. Do not mix directly with alkaline reagents. If KOH pretreatment is used, neutralize alkalinity before adding Melzer's Reagent.

Protocol

Procedure (Reference Only)

Apply Melzer's Reagent to the fungal tissue or cells and observe under a microscope for color reaction. Follow the specific sample-preparation requirements of the laboratory method.

Reaction Interpretation

Reaction Type	Observation
Amyloid / Melzer-positive	Tissue appears blue to black
Pseudoamyloid / dextrinoid	Tissue appears brown to reddish-brown
Inamyloid / Melzer-negative	No color change or pale yellowish-brown
Euamyloid	Tissue turns blue without KOH pretreatment
Hemiamyloid	Tissue turns red in Lugol's solution but shows no reaction in Melzer's Reagent; after KOH pretreatment, turns blue in both reagents

Storage & Handling

Store at -20 °C and protect from light. Use promptly after opening to avoid compromised staining results.

Safety & Precautions

1. For your safety and health, please wear a laboratory coat and disposable gloves during operation.

2. Most spores exhibit different reaction results in Melzer's Reagent and Lugol's reagent. Some spores show no reaction in Melzer's Reagent but range from weak or no reaction to iodine-positive in

Lugol's reagent; some spores show an amyloid reaction in Melzer's Reagent and even a pseudoamyloid reaction in Lugol's reagent.

3. Melzer's Reagent degrades into a turbid precipitate when mixed with alkaline solutions. Therefore, it must not be mixed or used sequentially with common mycological reagents such as potassium hydroxide or ammonia solution. When potassium hydroxide is used for pre-treatment, the alkalinity must be neutralized before adding Melzer's Reagent.

4. When Melzer's Reagent is mixed with PVLG solution at a ratio of 1:1, the staining reaction decreases slightly, but not sufficiently to affect the overall color change of the reaction. Preparations cannot be preserved for a long time, and the staining reaction usually fades within 1–2 years.

5. The purpose of allowing to stand for 5 min before mounting is to slightly dry the reagent, increase edge adhesion, and reduce liquid flow that would cause spores to slide outside the coverslip during mounting.

6. Under the microscope, press directly on the coverslip with the blunt end of a pencil, forceps, or dissecting needle to apply indirect pressure to individual spores. As each spore is compressed to a different degree, the delicate elastic inner walls that are otherwise difficult to observe will be revealed.

7. Please use the reagent as soon as possible after opening to avoid affecting subsequent experimental results.

8. This product is for research use only; strictly prohibited for other purposes.

Quality Control

QC Item	Method	Acceptable Range
Appearance	Visual inspection	No abnormal precipitation or discoloration beyond expected reagent color
Staining performance	Positive-control smear or section	Expected target/background staining pattern is observed
Storage condition	Label and storage check	Stored as specified; light-sensitive reagents protected from light

Troubleshooting

Issue	Possible Causes	Corrective Action
Weak color reaction	Reagent mixed with PVLG or old preparation	Use fresh reagent and observe promptly
Turbid precipitate	Contact with alkaline solution	Avoid alkaline mixing; neutralize after KOH pretreatment before adding reagent
Difficult spore-wall observation	Spore not compressed sufficiently	Apply gentle pressure on coverslip with a blunt tool according to microscopy practice

Recommended Applications

Mycological staining · fungal identification · amyloid/dextrinoid/inamyloid reaction observation

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Limitations & Disclaimer

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