Oil Red O Isopropanol Saturated Solution

Cat #: A-CSH295

Size: 100mL

Storage: Room temperature, avoid light (12 months)

Product Composition

Component	Size	Store at
Oil red O isopropyl alcohol saturation solution	100ml	2~8°C, and were protected from light

Product Description

Lipids are a collective term for neutral fats, phospholipids, and their derivatives. Their common physical characteristic is insolubility in water but solubility in organic solvents such as ethanol and ether. Sudan Red O is a strong lipid solvent and lipid dye. It readily forms small lipid droplets when combined with triglycerides but has slightly weaker affinity for phospholipids. The staining principle is generally believed to involve physical solution or adsorption, where the dye stains the lipids through solution effects. The solubility of the dye in lipid within frozen sections is greater than in the original solvent, allowing the dye to transfer into the lipids and stain the fat.

Modified Sudan Red O staining solution is primarily used to demonstrate lipid degeneration in tissue organs and abnormal lipid deposition, which commonly occur in the parenchymal organs such as the liver, kidney, and heart. It is used to differentiate and diagnose tumors occurring in adipose tissue and their nature. The specimens should not be fixed in ethanol-containing fixatives (if fixation is needed, 10% formalin can be used). Paraffin sections should not be used; instead, frozen sections or carbon wax sections should be employed. Positive staining of lipids results in shades of orange to red, depending on the lipid concentration.

Usage

1. Prepare a Sudan Red O solution saturated in isopropanol by mixing Sudan Red O with distilled water in a 3:2 ratio.

2. Use frozen sections, rinse with water after fixation in formalin (optional).

3. Rinse the sections briefly in distilled water.

4. Immerse the sections in isopropanol.

5. Place the sections in the Sudan Red O staining solution (covered) and perform closed staining.

6. Differentiate by briefly rinsing the sections in 60% isopropanol to remove excess dye.

7. Rinse the sections briefly in distilled water.

8. Perform counterstaining with Mayer's hematoxylin to stain the nuclei.

9. (Optional) Perform slight differentiation with 1% hydrochloric acid solution.

10. (Optional) Rinse with tap water for 10 minutes or use a dilute lithium carbonate solution to enhance the blue color.

11. Rinse the sections briefly in distilled water.

12. Blot the excess water around the sections with filter paper.

13. Mount with glycerin gelatin or gum arabic.

Staining Results

neutral fat	Orange red or orange red
nucleus	blue

Notes

1. The Sudan Red O staining solution is not very stable and tends to precipitate, so it should not be prepared in advance.

2. If 60% isopropanol is not readily available, 70% ethanol can also be used.

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.