Sudan IV Alcohol Saturated Solution

T1507851

Storage: Room Temperature. Store in the dark.

Introduction:

Lipids are a general term for neutral fats, lipoids, and their derivatives. Their common physical property is being insoluble in water but easily soluble in organic solvents (such as ethanol, ether, etc.). There are mainly two types of fats in the human body: Storage fats, such as neutral fats, which are mainly distributed in subcutaneous tissues, kidneys, pancreas, and other parts. Structural fats, such as lipoids (phospholipids, glycolipids, cholesterol, etc.), which are mainly distributed inside cells. Neutral fats (Neutral fat) are lipids composed of three molecules of fatty acids and one molecule of glycerol, and they are neutral. As one of the ways to store energy, neutral fats release energy when oxidized. Under normal circumstances, except for fat cells, lipid droplets are barely visible in other cells under an optical microscope. If a large number of lipid droplets appear in the cytoplasm, it is called fatty degeneration, which is common in hepatocytes, cardiomyocytes, renal tubular epithelial cells, and other cells. Common methods for neutral fat staining include Sudan II, Sudan III, Sudan IV, Sudan Black B, and Oil Red O staining. The mechanism of lipid staining with Sudan dyes is generally considered to be purely physical fat solubility and adsorption. Since Sudan dyes have higher solubility in lipids than in organic solvents, the dyes transfer from the staining solution to the lipids being stained during staining, making the lipids show the color of the staining solution.

Sudan IV Alcohol Saturated Solution is mainly used to show fatty degeneration of tissues and organs and abnormal deposition of lipoids. It is often used for fatty degeneration of parenchymal organs such as the liver, kidneys, and heart, where a large number of neutral lipid droplets appear in cells. It is also used to identify and diagnose tumors occurring in adipose tissue and their properties. For specimens, fixatives containing ethanol should not be used (10% formalin can be used if fixation is required), and paraffin sections should not be used either; frozen sections or carbowax sections must be used.

Self-Prepared Materials:

1. Glass slides.
2. 70% ethanol.
3. Distilled water.

Operating Procedures (for reference only):

1. Prepare cryosections of fresh tissues. If the sample is a lipoma, adjust the temperature accordingly.
2. Mount the frozen sections on glass slides.
3. Rinse slightly with ethanol.

4. Immerse the sections in Saturated Alcohol Solution of Sudan IV for staining.
5. Wash off the excess staining solution with ethanol.
6. Rinse with distilled water.
7. Conduct subsequent experiments according to specific experimental requirements.

Staining Results:

Neutral fats: Scarlet red.

Precautions:

1. For fat staining, specimens should not use fixatives containing ethanol or paraffin sections; frozen sections must be used.
2. Precipitation of the dye must be prevented during the staining process. Therefore, when placing sections into the staining solution, the container should be sealed to avoid contact with flowing air, preventing precipitation caused by solution volatilization.
3. Frozen sections are easier to stain, so over-staining should be avoided during counterstaining.
4. Sudan dyes fade easily and should be stored in a sealed container.
5. For your safety and health, wear a lab coat and disposable gloves during operation.
6. This product is for scientific research only and must not be used for other purposes.