Melanin and Lipofuscin Staining Solution

(Nile Blue Method)

M1507836

Storage: Room Temperature. Store in the dark.

Introduction:

Melanin is a non-hematogenous endogenous pigment, belonging to a group of pigments with colors ranging from light brown to black. This pigment typically exists in the skin, eyes, substantia nigra of the brain, and hair follicles. Melanin has a prominent physical property: it is completely insoluble in most organic solvents—this is almost certainly because the melanin formed in melanosomes can bind tightly to proteins. Another physical property of melanin is its ability to be bleached by strong oxidizing agents, although this process is slow. Under pathological conditions, this pigment can also be found in benign nevocytic tumors and malignant melanomas. Lipofuscin is a granular yellowish-brown pigment composed of lipid-containing residues and lysosomal digests. It is believed to be produced by the oxidation of lipids and lipoproteins. The oxidation process of lipofuscin occurs slowly and gradually; therefore, the pigment exhibits different staining reactions, and its color, shape, and size also vary. Lipofuscin can be found in the liver, kidneys, cardiac muscle, adrenal glands, nerve cells, and ganglion cells, and is mostly distributed around the cell nucleus.

The Melanin and Lipofuscin Staining Solution (Nile Blue Method) uses Nile Blue to visualize melanin and lipofuscin. This staining solution may yield poor staining results for some samples, but the method is simple to operate. This reagent is for scientific research use only and is not suitable for clinical diagnosis or other purposes.

Materials to Be Prepared by Users:

10% formalin fixative solution.

Distilled water:

1. Operating Procedures (for reference only).
2. Rinse the experimental sections and control sections with distilled water.
3. Immerse the sections in the Melanin and Lipofuscin Staining Solution (Nile Blue Method) for 20 minutes.
4. Wash with distilled water 4-5 times.
5. Mount the sections with an aqueous mounting medium (e.g., glycerin gelatin).

Staining Results:

Melanin and Lipofuscin: Dark green.

Cell Nuclei: Blue or unstained.

Precautions:

1. This staining method may produce poor staining effects for some samples.
2. When staining frozen sections, neutral lipids such as triglycerides, cholesterol esters, and steroids are stained red or pink, while acidic fats such as fatty acids and phospholipids are stained blue.
3. For your safety and health, please wear a lab coat and disposable gloves during operation.
4. After opening the reagent, use it as soon as possible to avoid affecting the results of subsequent experiments.