Luxol Fast Blue Staining Solution

L1507842

Storage: Room Temperature. Store in the dark.

Introduction:

Myelin Sheath is a membrane that wraps around the axon of a nerve cell. Specifically, it consists of myelin cells and cell membranes, and is a multi-layered lipid bilayer structure formed by the plasma membrane of neurolemmocytes spirally winding along the axis of the axon. There are nodes of Ranvier on the myelin sheath, which enable the saltatory conduction of nerve impulses. Myelin sheath staining has certain significance in pathological diagnosis. The pathological changes of the myelin sheath are divided into early, middle and late stages. In the early stage, the staining is relatively dark; in the middle stage of the lesion, the myelin sheath degenerates to form lipid droplets, which can be displayed by lipid staining; in the late stage, it completely degenerates and is cleared by phagocytes, so there is no longer a positive result for the myelin sheath.

Many diseases can cause changes in the myelin sheath. Luxol Fast Blue staining can show whether the myelin sheath is intact, the degree of degeneration and necrosis, and the repair status under pathological conditions, which is of significance for the pathological diagnosis and research of nerve tissue. For example, when nerve fibers are damaged, the myelin sheath may show changes such as swelling, twisting into a spherical shape, fragmentation, or complete disappearance of demyelination. This reagent is only used in the field of scientific research and is not suitable for clinical diagnosis or other purposes.

Self-Prepared Materials:

1. Distilled water, a series of ethanol, xylene or dewaxing solution (D292661).
2. Eosin staining solution, 0.1% lithium carbonate aqueous solution, neutral balsam.

Operating Steps (for reference only):

1. Paraffin sections (5-10 μm in thickness) are dewaxed with xylene or dewaxing solution (D292661), and then the sections are transferred downward into 95% ethanol for a brief rinse.
2. Add Luxol Fast Blue staining solution and stain at room temperature for 12-20 hours.
3. Rinse off the excess staining solution with 95% ethanol, then rinse with distilled water.
4. Differentiate with 0.1% lithium carbonate aqueous solution for 10-15 seconds, then differentiate with 70% ethanol for 30 seconds until the gray and white matter are clearly distinguishable.
5. Rinse with distilled water (if the differentiation is insufficient, steps 4-5 can be repeated).
6. Counterstain with eosin for 20 seconds to 90 seconds, then rinse with water.
7. Perform conventional dehydration, clear the sections with xylene or dewaxing solution

(D292661), and mount the sections with neutral balsam.

Staining Results:

Myelin sheath: Blue-green.

Cytoplasm: Red.

Precautions:

1. Differentiation is crucial. The differentiation time should be strictly controlled, and the degree of differentiation can be observed under a microscope.
2. The preferred fixative is 10% formalin.
3. The sections should not be too thick and should be controlled within 5-10 μm; otherwise, phenomena such as section detachment or over-staining are likely to occur.
4. For your safety and health, please wear a lab coat and disposable gloves during operation.