Nissl Staining Kit, Cresyl Violet Method

Catalog No.: RA20097

Basic Information

Product name	Nissl Staining Kit, Cresyl Violet Method
Sizes	100 mL
Storage	RT, keep away from light
Shipping	RT
Validity	12 months

Product Introduction

The cell body of a neuron includes a large nucleus with a wrinkled nuclear membrane, sparse chromatin, and a prominent nucleolus. In the cytoplasm of the cell body, there are Nissl granules, which represent the rough endoplasmic reticulum and exhibit a characteristic basophilic punctate pattern in many neurons. Nissl granules can be demonstrated by various stains such as neutral red, methylene blue, toluidine blue, and methyl violet. Variations in staining, pH, and differentiation time allow some stains to highlight only Nissl substance, while others also show neuronal nuclei and neuroglia. Nissl bodies (or Nissl granules) are triangular or oval granular structures distributed in the cytoplasm of neurons. They can be stained purple-blue by basic dyes such as thionin, methylene blue, toluidine blue, and cresyl violet. All neurons contain Nissl bodies, but their shape, quantity, and distribution vary. Nissl bodies are also present in dendrites but not in axons or the axon hillock. Their appearance changes with the physiological state of the neuron. Nissl bodies are important sites for protein synthesis; when neurons are stimulated, Nissl bodies in the cell body decrease significantly.

EnkiLife Nissl Staining Solution (Cresyl Violet Method) uses cresyl violet as the core dye. Cresyl violet is photosensitive and effectively demonstrates changes in Nissl bodies. The method offers simple operation, stable staining, and wide applicability, and is suitable for staining Nissl substance and neurons in paraffin-embedded tissue sections. The presence or disappearance of Nissl bodies is an important indicator of whether neurons are damaged. In cases such as encephalitis, cerebral ischemia, or axonal reaction, Nissl bodies may dissolve or disappear.

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Product Components

Components	3x 100mL
Reagent (A): Cresyl Violet Stain	100 mL
Reagent (B): Nissl Differentiation	2x 100mL

Materials Required (Not Supplied)

1. Graded ethanol, distilled water.
2. Incubator, alcohol lamp, microscope.

Experimental procedure

1. Fix fresh tissue in ethanol, Carnoy' s fixative, or 10% neutral formalin, then proceed with routine dehydration and paraffin embedding.
2. Cut sections at 6–8 μm, deparaffinize with xylene or substitute to water.
3. Immerse sections in Cresyl Violet Stain, and incubate at: 56 °C for 1 h, or 37 °C for 2–3 h; If staining is insufficient, heat gently over an alcohol lamp until bubbles appear (about 10 min), then rinse with cold distilled water.
4. Differentiate in Nissl Differentiation for 1–3 min, observe under microscope until background is nearly colorless.
5. Rapidly dehydrate with absolute ethanol, clear with xylene or substitute, and mount with neutral balsam.

Staining Results

Component	Color
Nissl bodies	Purple
Background	Nearly colorless or light blue

Notes

1. Nissl bodies dissolve easily after tissue removal, so immediate fixation is required; otherwise,

staining will be poor.

2. Fixation is critical. Use ethanol, Carnoy’ s fixative, or neutral formalin.
3. This staining solution works well for paraffin-embedded tissue sections.
4. Recommended section thickness: 6–8 μm, or 25 μm (for cortical neuron density assessment).
5. Protect stained specimens from light to prevent fading.
6. For your safety and health, wear a lab coat and disposable gloves.
7. Use the reagent promptly after opening to ensure optimal performance.

This product is for research use only!