Mast Cell Staining Solution (Toluidine Blue Method)

Cat #: A-CSH332

Size: 2×100mL

Storage: Room temperature, avoid light (12 months)

Product Composition

Component	2×100mL	Store at
Reagent (A): Toluidine blue dye solution	100ml	10~30°C, and were protected from light
Reagent (B): 0.5% glacial acetic acid differentiation solution	250ml	10~30°C

Product Description

Mast cells are common cells found in loose connective tissue. They are often clustered along small blood vessels and lymphatic vessels, and also commonly found around the interlobular ducts of bronchi and pancreas. Mast cells are generally larger cells with a diameter of about 20-30μm. They are round or oval in shape, with small nuclei and cytoplasm filled with coarse and metachromatic acidophilic granules.

Toluidine Blue O contains cations that have a staining effect. The acidic substances in the tissue cells combine with these cations and become stained. Toluidine Blue O also contains two chromophores that facilitate the ionization of the dye into salts, enhancing the staining power of the dye on the tissue, resulting in the staining of the cells on the section. It can stain the cell nuclei blue, while mast cell granules appear reddish-purple, and other components appear blue.

Usage

1. Immediately fix fresh tissue in 10% neutral formalin fixative, followed by routine dehydration and embedding.
2. Cut sections to a thickness of 4-5μm and perform routine dewaxing until water.
3. Stain with Toluidine Blue O staining solution for 30 minutes.

4. Rinse briefly with tap water.

5. Differentiate with 0.5% acetic acid differentiation solution until the cell nuclei and granules are clear, which can be controlled under a microscope.

6. Rinse briefly with tap water, blot dry with filter paper or use a hairdryer to remove excess water.

7. Treat with 95% ethanol for 1 minute, followed by two changes of absolute ethanol for 2 minutes each.

8. Clear with xylene and seal with neutral mounting medium.

Staining Results

mast cell granule	reddish violet
karyon	blue

Notes

1. For tissues that are difficult to stain, such as gastric mucosal tissue and cartilage tissue, the staining time in Toluidine Blue O staining solution should be extended accordingly.

2. It is important to ensure that the tissue is fresh and should be fixed immediately after removal.

3. It is preferable to use Carnoy's fixative as the fixative solution.

4. Low-concentration ethanol dehydration should be avoided after Toluidine Blue O staining, as it can cause fading.

5. After differentiation, it is important to quickly transfer the sections to 95% ethanol, absolute ethanol, and xylene. Prolonged exposure to these solutions can lead to fading of the stain.

Disclaimer

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