Alizarin Blue Staining Solution (pH 2.5)

Cat #: A-CSH330

Size: 3×50mL, 3×100mL

Storage: 2~8°C, avoid light (12 months)

Product Composition

Component	3×50ml	3×100ml	Store at
Reagent (A): Alcian acidification solution	50ml	100ml	10~30°C
Reagent (B): Alcian staining solution	50ml	100ml	2~8°C, and were protected from light
Reagent (C): Nuclear solid staining solution	50ml	100ml	10~30°C, and were protected from light

Product Description

Alcian Blue, also known as Aizen Blue or Alcian S, is a copper phthalocyanine dye that was initially used for textile fiber dyeing. This cationic dye combines with acidic groups, forming insoluble complexes with anionic groups present in tissues, such as carboxyl and sulfate groups. Alcian Blue is composed of a central copper-containing phthalocyanine ring connected to four isothiouronium groups via sulfur ether bonds. These isothiouronium groups exhibit moderate alkalinity, giving Alcian Blue its cationic properties. The exact mechanism by which Alcian Blue stains carbohydrates is not fully understood, but it is generally believed that the isothiouronium groups of the cationic dye interact electrostatically with polyanionic groups present in the tissue. Carboxyl and sulfate groups in acidic mucous substances form insoluble complexes with the positively charged salt bridges in the dye molecules, resulting in a blue color.

Alcian Blue staining solution (pH 2.5), also known as standard Alcian Blue staining solution, can differentiate mucous substances based on the different pH values of the staining solution. At pH 1, carboxyl groups (COOH) do not stain, while sulfate groups (OSO3H) stain. At pH 2.5, carboxyl groups stain well, but sulfated mucins stain poorly, allowing for the staining of sulfated glycoproteins and salivary mucins. Neutral mucins (such as neutral mucins in gastric mucosa and

Brunner's gland) do not react with Alcian Blue. This reagent is intended for research purposes only and is not suitable for clinical diagnosis or other purposes.

Usage

1. Deparaffinize with xylene, followed by a graded ethanol series, and hydrate with distilled water.
2. Immerse in Alcian acidification working solution (prepared by mixing Alcian acidification solution and distilled water in a ratio of 1:2) for 5 minutes.
3. Incubate in Alcian staining solution for 30 minutes.
4. Rinse with running water.
5. Perform counterstaining with Nuclear Fast Red for 5 minutes.
6. Rinse with running water.
7. Perform routine ethanol dehydration, clear with xylene, and mount with neutral resin.

Staining Results

Acidic mucin (sulfate mucin and salivary mucin)	blue
Proteoglycans and hyaluronic acid	blue
nucleus	red

Notes

1. The fixative used is 10% neutral formalin.
2. This method can differentiate and identify sulfated glycoproteins and proteoglycans.
3. The staining time can be adjusted according to experimental requirements during the staining process.
4. Once opened, reagents should be used as soon as possible. After each use, the bottle cap should be tightly closed to prevent evaporation or deterioration.
5. For your safety and health, please wear a lab coat and disposable gloves during the procedure.
6. The staining solution can be reused, but not repeatedly. If there are precipitates, they should be filtered before use.
7. If the staining is too dark, appropriate decolorization can be done using methanol or alcohol. It is best not to re-stain.

8. If the staining is too dark or too light, adjust the staining time or working solution concentration.

9. The pH value has a certain impact on staining. The slides should be clean and free from acid or alkaline contamination to avoid affecting the staining results.

10. For your safety and health, please wear a lab coat and disposable gloves during the procedure.

Disclaimer

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