AB-PAS Staining Kit

Cat #: A-CSH285

Size: 6×50mL, 6×500mL

Storage: 2-8 °C, Avoid exposure to light (1 year)

Product Description

Component	6×50mL	6×100mL	6×500mL	Store at
Reagent (A): 3% Acetic Acid Solution	50ml	100ml	500ml	10-30°C
Reagent (B): Alcian Blue Staining Solution	50ml	100ml	500ml	2-8 °C, Avoid exposure to light
Reagent (C): Periodic Acid Solution	50ml	100ml	500ml	2-8 °C, Avoid exposure to light
Reagent (D): Schiff Reagent	50ml	100ml	500ml	2-8 °C, Avoid exposure to light
Reagent (E): Hematoxylin Staining Solution	50ml	100ml	500ml	2-8 °C, Avoid exposure to light
Reagent (F): Acidic Ethanol Differentiation Solution	50ml	100ml	500ml	10-30°C

The combination of Alcian Blue (also known as Alcian Azure or Alcianine Blue) and PAS (Periodic Acid-Schiff) technique can be used to differentiate neutral mucins and acidic mucins in the same tissue section. This technique is commonly employed to detect mucins extensively. The tissue section is first stained with Alcian Blue at a standard pH of 2.5 and then subjected to PAS staining. Alcian Blue stains salivary mucins, sulfur-containing mucins, and proteoglycans in blue color. PAS staining, on the other hand, stains neutral mucins in deep red or purplish-red color and simultaneously stains tissues and cells containing both neutral and acidic mucins in varying shades of purple. This is due to the reaction between Alcian Blue and Schiff reagent. This staining pattern is often observed in goblet cells of the small intestine that contain neutral mucins and salivary mucins. The principle of Alcian Blue staining lies in its similarity to cationic copper phthalocyanine dyes, which bind to acidic groups. Alcian Blue forms insoluble complexes with anionic groups in tissues, such as carboxyl and sulfate groups, resulting in a blue color. When combined with PAS staining, it allows the visualization of three different mucin components.

Usage

1. After tissue fixation, routinely deparaffinize the tissue sections with water and rinse with distilled water for 1-2 minutes.
2. Immerse the sections in 3% acetic acid solution for 3 minutes.
3. Without rinsing with water, stain the sections in Alcian Blue staining solution for 15-30 minutes.
4. Rinse the sections with distilled water three times, each time for 1-2 minutes.
5. Immerse the sections in periodic acid solution and oxidize for 5-10 minutes.
6. Rinse briefly with running water, followed by rinsing with distilled water twice.
7. Incubate the sections in Schiff reagent for 10-20 minutes.
8. Wash the sections with sodium bisulfite solution three times, each time for 2 minutes.
9. Rinse with running water for 2 minutes, followed by rinsing with distilled water twice.
10. Stain the nuclei with hematoxylin staining solution for 1-2 minutes.
11. Differentiate the sections with acidic differentiation solution for 2-5 seconds, and rinse thoroughly with water.
12. Rinse with running water until the blue color returns.
13. Perform routine dehydration with absolute ethanol, clear with xylene, and mount with a neutral mounting medium.
14.

Staining Results

Glycogen, neutral mucins, various glycoproteins	Purplish-red color
Acidic mucins (sulfomucins and salivary mucins)	Blue
Proteoglycans and hyaluronic acid	Blue

Note: Cells or tissues containing both neutral mucins and acidic mucins can be stained in varying shades of blue-purple to purple.

Notes

1. Tissue sections should be thoroughly deparaffinized to ensure optimal staining results.
2. The oxidation time with periodic acid should not be excessively long, and the optimal temperature during oxidation

is between 18-22° C.

3. Store Alcian Blue staining solution, periodic acid solution, Schiff reagent, and hematoxylin staining solution in a closed container at 2-8° C. Avoid excessive exposure to sunlight and air. It is recommended to take them out 30 minutes prior to use and allow them to reach room temperature in a dark place.

4. The acidic differentiation solution should be regularly replaced, and the differentiation time should be determined based on the thickness of the tissue section, tissue type, and the freshness of the differentiation solution. Sufficient rinsing with tap water is necessary after differentiation.

5. The timing of action in periodic acid solution and Schiff reagent is crucial and should be determined based on factors such as the thickness of the tissue section and tissue type.

6. When restaining the cell nuclei with hematoxylin staining solution, a light staining should be applied to avoid interfering with the observation of the positive substance AB. The purpose is to prevent cytoplasmic or mucin staining from masking the color of Alcian Blue.

7. The staining order in the Alcian Blue-PAS combined technique can affect the final results. When PAS staining is performed before Alcian Blue staining, neutral mucins and glycogen can be stained in purple color. Conversely, when Alcian Blue staining is performed before PAS staining, these substances can be stained in the expected purplish-red color.

8. For your safety and health, please wear laboratory attire and disposable gloves during the operation.

Disclaimer

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