Periodic Acid-Schiff (PAS) Staining Kit

Cat #: A-CSH280

Size: 4×50mL, 4×100mL, 4×500mL

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

Product Description

Component	4×50mL	4×100mL	4×500mL	Store at
Reagent (A): Periodic acid solution	50ml	100ml	500ml	2-8 °C, Avoid exposure to light
Reagent (B): Schiff reagent	50ml	100ml	500ml	2-8 °C, Avoid exposure to light
Reagent (C): Hematoxylin staining solution	50ml	100ml	500ml	2-8 °C, Avoid exposure to light
Reagent (D): Acidic ethanol differentiation solution	50ml	100ml	500ml	2-8 °C

Periodic Acid-Schiff (PAS) staining is a commonly used staining method in pathology to demonstrate glycogen and other polysaccharides. This staining kit not only visualizes glycogen but also shows neutral mucinous substances, certain acidic substances, as well as cartilage, pituitary, fungi, molds, pigments, amyloid-like substances, and basement membranes. Periodic acid, also known as periodic acid, is a strong oxidizing agent that oxidizes the 1,2-glycol groups in carbohydrates and related substances, converting them into aldehydes. The aldehydes react with Schiff reagent to form a magenta compound, resulting in a purple-red color. Since periodic acid can also oxidize other substances within cells, it is crucial to carefully select the concentration and oxidation time of periodic acid to control the oxidation process, ensuring the conversion of glycol groups to aldehyde groups without excessive overoxidation.

The PAS staining solution for glycogen has the characteristics of stable performance, strong specificity, and simple operation.

Usage

1.Routine fixation is typically performed using 10% formalin, followed by routine dehydration and embedding.

2.Paraffin-embedded sections are dewaxed in distilled water, while frozen sections are directly placed in distilled water.

3.Rinse with tap water for 2-3 minutes, followed by two washes with distilled water.

4.Incubate in periodic acid solution for 5 minutes at room temperature.

5.Rinse with distilled water.

6.Incubate in Schiff reagent at room temperature in a dark place for 15 minutes (the sections turn pink).

7.Rinse with tap water for 5 minutes (the sections turn deep red).

8.Stain the cell nuclei with hematoxylin staining solution for 1 minute.

9.Differentiate in acidic ethanol differentiation solution for 2-5 seconds.

10.Rinse with tap water for 5 minutes, followed by rinsing with distilled water to restore a blue color.

11.Dehydrate in 95% ethanol and 100% ethanol.

12.Clear in xylene and mount with neutral mounting medium.

Negative control:

A.Dissolve 1g of amylase in 100ml of PBS (pH 5.3) and treat for 30-60 minutes. Include these sections with other sections in the periodic acid solution. The result should be negative.

B.(Alternative method) Treat filtered saliva smears for 30-60 minutes, and include them with other sections in the periodic acid solution. The result should be negative.

C.(Alternative method) If using the same sample as a control, skip the step of periodic acid solution and directly proceed to Schiff reagent. The result should be negative.

Staining Results

Positive PAS Reaction Substances (Glycogen or Polysaccharides)	Red or Purple-Red
Cell Nucleus	Blue
Cytoplasm	Varying shades of red

Note: The intensity of the colors largely depends on the duration of the sample's exposure to periodic acid solution and Schiff reagent.

Notes

1.The dewaxing of tissue sections should be performed as thoroughly as possible to avoid compromising the staining efficacy.

2.The oxidation time for periodic acid should not be excessively prolonged, and the optimal temperature for oxidation is between 18-22° C.

3.Periodic acid solution and Schiff reagent should be stored in a sealed container at 4° C, protected from excessive sunlight and air exposure. Prior to use, it is advisable to remove them from storage and allow them to equilibrate to room temperature for 30 minutes in a light-protected and dark environment.

4.The acidic ethanol differentiation solution should be regularly replaced with fresh solution. The differentiation time should be adjusted based on the thickness of the sections, tissue type, and the freshness of the differentiation solution. Additionally, the rinsing time with tap water after differentiation should be sufficient.

5.The duration of exposure to periodic acid solution and Schiff reagent is of utmost importance and should be determined based on factors such as section thickness and tissue type.

6.This staining solution is commonly employed for routine tissue section staining. For fungi, cells, and extremely thin sections, it is recommended to acquire a glycogen PAS staining kit (specifically designed for cell and fungal staining) as it contains lower concentrations of periodic acid and hematoxylin, thus avoiding excessive staining.

7.The staining time for frozen sections should be kept as short as possible.

Disclaimer

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