Glycogen PAS Staining Kit

Cat. No.: G774820 | Pack size: 4 × 50 mL; 4 × 100 mL; 4 × 500 mL | Storage: 2-8 °C, protected from light | Grade: BioReagent, Biological Stain, for Microscopy

Overview

Glycogen staining is one of the routine staining techniques in pathology, commonly applied to visualize glycogen and other polysaccharides. This staining kit can not only stain glycogen, but also demonstrate neutral mucous substances, certain acidic substances, cartilage, pituitary tissues, molds, fungi, pigments, amyloid substances, basement membranes and more. Periodic acid is a strong oxidizing agent. It oxidizes the 1,2-glycol groups in carbohydrates and related substances to dialdehydes. These aldehydes then react with Schiff reagent to form a magenta-colored complex, producing a purplish-red stain. Since periodic acid can also oxidize other intracellular components, careful control of periodic acid concentration and oxidation time is essential to achieve sufficient oxidation of glycol groups into aldehyde groups without over-oxidation; this step is critical for successful staining.

The PAS Glycogen Staining Kit features stable performance, high specificity and simple, rapid operation.

Product Components:

G774820	Component	4 × 50 mL	4 × 100 mL	4 × 500 mL	Storage
G774820A	Periodic Acid Solution	50 mL	100 mL	500 mL	2-8 °C. Store in the dark
G774820B	Schiff Reagent	50 mL	100 mL	500 mL	2-8 °C. Store in the dark
G774820C	Hematoxylin Staining Solution	50 mL	100 mL	500 mL	2-8 °C. Store in the dark
G774820D	Acidic Ethanol Differentiation Solution	50 mL	100 mL	500 mL	2-8 °C

Instructions for Use:

1. Perform routine fixation using 10% formalin, followed by standard dehydration and embedding procedures.
2. For paraffin sections: deparaffinize and transfer into distilled water; for frozen sections: directly immerse in distilled water.
3. Rinse with tap water for 2–3 minutes, then wash twice with distilled water.
4. Immerse slides in periodic acid solution at room temperature for 5 minutes; do not exceed 10 minutes in most cases.
5. Rinse thoroughly with distilled water.
6. Place slides in Schiff reagent and incubate in the dark at room temperature for 10–20 minutes until sections turn pink.
7. Rinse with tap water for 5 minutes until sections turn deep red.
8. Counterstain 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, then switch to distilled water for washing until sections turn blue.
11. Dehydrate sequentially with 95% ethanol and absolute ethanol.
12. Clear with xylene and mount with neutral balsam.

Negative Control:

1. Dissolve 1 g amylase in 100 mL PBS (pH 5.3). Treat sections with this solution for 30–60 minutes, then incubate together with other sections in periodic acid solution. A negative staining result should be observed.
2. (Alternative method) Treat sections with filtered saliva for 30–60 minutes, followed by incubation with periodic acid alongside other sections. Staining result should be negative.
3. (Alternative method) When using self-specimen as control slide, skip the periodic acid treatment step and place the slide directly into Schiff reagent. The result should be negative.

Precautions:

1. Ensure complete deparaffinization of sections; incomplete removal of paraffin will compromise staining outcomes.
2. Do not prolong periodic acid oxidation. The optimal oxidation temperature ranges from 18 to 22 °C.

3. Store periodic acid solution and Schiff reagent tightly sealed at 4 °C. Avoid excessive exposure to sunlight and air during use. Take them out 30 minutes in advance to equilibrate to room temperature, and perform staining in dim light.
4. Replace acidic ethanol differentiation solution regularly. Differentiation duration varies according to section thickness, tissue type and freshness of the solution. Sufficient tap water rinsing is required after differentiation.
5. Incubation time in periodic acid solution and Schiff reagent is critical and shall be adjusted based on section thickness, tissue type and other factors.
6. This set of staining solutions is designed for routine tissue sections. For fungi, cell smears and ultra-thin sections, purchase the PAS Glycogen Staining Kit dedicated to cells and fungi instead. It contains lower concentrations of periodic acid and hematoxylin to prevent overstaining.
7. Minimize staining duration for frozen sections.

Staining Results:

Staining Target	Result
PAS-positive substances (glycogen or polysaccharides)	Red or purplish-red
Cell nucleus	Blue
Cytoplasm	Variable shades of red

Storage and Shipping

Item	Details
Storage	Store at 2-8 °C, protected from light
Shipped In	Wet ice
Stability And Storage	Store at 2-8 °C long term (12 months). Store in the dark.

Contact & Global Offices

Whether you have a technical question, need help with a quotation, or want to inquire about an order, our regional teams are ready to assist. Please contact the office for your region; for general inquiries, the North American office is the corporate primary.

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