V02

糖原 PAS 染色试剂盒(含苏木素)

货号：G1281
规格：4×50mL/4×100mL
保存：2-8℃，避光保存，有效期 6 个月。

产品组成：

名称	4×50mL	4×100mL	保存
试剂（A）：PAS 氧化剂	50mL	100mL	2-8℃，避光
试剂（B）：Schiff 染色液	50mL	100mL	2-8℃，避光
试剂（C）：苏木素染色液	50mL	100mL	室温，避光
试剂（D）：酸性分化液	50mL	100mL	室温

产品介绍：

糖原染色是病理学中常规的染色方法之一，McManus 在 1946 年最先使用 PAS 技术显示黏蛋白，该法常用来显示糖原和其他多糖，该染色液不仅能够显示糖原，还能显示中性黏液性物质和某些酸性物质，以及软骨、垂体、霉菌、真菌、色素、淀粉样物质、基底膜等。

氧化剂能氧化糖类及有关物质中的 1，2-乙二醇基，使之变为二醛，醛与 Schiff 试剂能结合成一种品红化合物，产生紫红色。由于氧化剂还可氧化细胞内其他物质，使用时应注意选择好氧化剂的浓度和氧化时间，使氧化控制在即能把乙二醇基氧化成醛基，又不至于过氧化，这是很关键的步骤。

本糖原 PAS 染色液的特点：采用 Solarbio 特有配方技术，大大增强了染色效果；性能稳定，特异性强；操作简捷，仅需 1h 左右。

自备材料：

10%福尔马林固定液、Carnoy 固定液或 AAF 固定液、蒸馏水、乙醇

操作步骤（仅供参考）：

1. 糖原染色建议采用 Carnoy 固定液或 AAF 固定液固定，糖蛋白和糖脂建议采用 10%福尔马林固定液固定，常规脱水包埋。（见注意事项 2）
2. 常规脱水包埋。石蜡切片脱蜡后浸入蒸馏水；冰冻切片直接浸入蒸馏水。
3. 切片滴加 PAS 氧化剂，室温孵育 5-8min，一般不宜超过 10min。
4. 蒸馏水冲洗 2 次，每次 1min。
5. 切片滴加 Schiff 染色液，避光染色 10-20min。
6. 蒸馏水冲洗 1-2min。
7. 切片滴加苏木素染色液，染细胞核 1-2min。
8. （可选）滴加酸性分化液分化 2-5s。
9. 自来水浸泡 10min 或 1×PBS 孵育 2-3min 充分返蓝。
10. 从 75%乙醇开始，85%、95%、100%乙醇逐级脱水，每级 1-2min。二甲苯透明 2 次，每次 1min，中性树胶封固。
11. 镜检观察和拍照。

染色结果：

PAS 反应阳性物质	红色或紫红色
细胞核	蓝色
细胞质	深浅不一的红色

备注：颜色深浅很大程度上取决于样品在氧化剂溶液和 Schiff 染色液中作用时间的长短。

阴性对照(*可选*)：

1. 取淀粉酶 1g 溶解于 PBS(pH5.3) 100mL，处理 30-60min，与其他切片共同入氧化剂。结果应为阴性。
2. (备选方案)取唾液（过滤后用）处理 30-60min，与其他切片共同入氧化剂。 结果应为阴性。

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3. (备选方案)如果对照片采用其自身样本，对照片不经过氧化剂这一步，直接入 Schiff 染色液。 结果应为阴性。

注意事项：

1. 切片脱蜡应尽量干净，否则影响染色效果。
2. 糖原与组织结合不紧密，且通常不与醛类发生交联作用，建议使用不含或少含水的醇基固定液进行固定，糖蛋白或糖脂可以稳固结合在组织上或与醛类发生交联固定作用，因此可使用常规醛类固定液。
3. 氧化剂氧化时间不宜过久，氧化时的温度以 18-22℃最佳。
4. 氧化剂和 Schiff 染色液应置于 4℃密闭保存，使用时避免接触过多的阳光和空气。使用前，最好提前 30min 取出恢复到在室温后，避光暗处使用。
5. 酸性分化液应经常更换新液，其分化时间应该依据切片厚薄、组织的类别和酸性分化液的新旧而定，另外分化后自来水冲洗时间应该足够。
6. 在氧化剂和 Schiff 染色液中作用时间非常重要，该依据切片厚薄、组织的类别等决定。
7. 本染色液常用于常规组织切片染色，对于真菌、细胞、极其薄的切片，建议采购糖原 PAS 染色试剂盒（细胞真菌专用），因为其氧化剂和苏木素溶液浓度更低，不宜过染。
8. 冷冻切片染色时间尽量要短。
9. 为了您的安全和健康，请穿实验服并戴一次性手套操作。

V02

Periodic Acid Schiff (PAS) Stain Kit, with Hematoxylin

Cat: G1281
Size: 4×50mL/4×100mL
Storage: 2-8℃, avoid light, valid for 6 months.

Kit Components

Reagent	4×50mL	4×100mL	Storage
Reagent (A): PAS Oxidant	50mL	100mL	2-8℃, avoid light
Reagent (B): Schiff Reagent	50mL	100mL	2-8℃, avoid light
Reagent (C): Mayer Hematoxylin Solution	50mL	100mL	RT, avoid light
Reagent (D): Acidic Differentiation Solution	50mL	100mL	RT

Introduction

Glycogen staining is one of the conventional staining methods in pathology. McManus first used PAS technology to display mucin in 1946. This method is often used to display glycogen and other polysaccharides. The staining solution can not only display glycogen, but also show neutral mucilaginous substances and some acidic substances, as well as cartilage, pituitary, mould, fungus, pigment, amyloid substance, basement membrane, etc.

The oxidant can oxidize 1,2-glycol group in sugars and related substances to make it into dialdehyde. Aldehyde and Schiff Reagent can combine to form a purplish-red fuchsin complex. As oxidants can also oxidize other substances in cells, we should pay attention to the concentration and oxidation time of oxidants when using, so that the oxidation control can oxidize glycol group to aldehyde group without peroxide, which is a key step.

This product has some advantages: the unique formula technology of Solarbio greatly enhances the dyeing effect; stable performance and strong specificity; simple operation and short time.

Self Provided Materials

10% Neutral Buffered Formalin Fixative, Alcohol Acetate Formalin(AAF) Mixed Fixative(70%) or Carnoy Fixative,distilled water, ethanol.

Protocol(*for reference only*)

1. Carnoy or AAF fixative is recommended for glycogen staining, and 10% formalin fixative is recommended for glycoprotein and glycolipid, and routine dehydration and embedding is recommended. (See Note 2)
2. Conventionally dehydration and embedding.For paraffin section, dewax to distilled water; For frozen section, directly into distilled water to restore room temperature.
3. Place in Oxidant for 5-8min at room temperature, generally not more than 10min.
4. Wash with distilled water twice, each time for 1min.
5. Soak the section in Schiff Reagent in a dark place at room temperature, and stain for 10-20min.
6. Rinse with distilled water for 1-2min.
7. Stain with Mayer Hematoxylin Solution for 1-2min.
8. (Optional)Differentiate by Acidic Differentiation Solution for 2-5s.
9. Wash with tap water for 10-15 min or rinse in 1×PBS for 2-3min to blue.
10. Starting from 75% ethanol, dehydrate with 85%, 95%, and 100% ethanol step by step, with each step lasting 1-2 minutes. Transparent by xylene twice, each time for 1 minute, and then seal with resinene.
11. View under the microscope and photograph.

Result

PAS Reaction Positive Substance	Red or Purplish Red
Nucleus	Blue
Cytoplasm	Red in different degrees

Note: the color depth depends largely on the length of time that the sample has been in the Oxidant and Schiff Reagent.

Negative Control *(optional)*

1. Take 1gm of amylase and dissolve it in 100mL of PBS (pH5.3), treat it for 30-60 min, and add into Oxidant together with other sections. The result should be negative.

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2. (alternative) take the saliva(after filtration) and treat it for 30-60 min, then add into Oxidant together with other slices. The result should be negative.
3. (alternative) if the control section use its own sample, directly place the section into Schiff Reagent without Oxidant. The result should be negative.

Note

1. Section dewaxing should be as clean as possible, otherwise it will affect the dyeing effect.
2. Glycogen is not tightly bound to tissues, and usually does not cross-link with aldehydes. It is recommended to use alcohol-based fixative with no or less water for fixation. Glycoproteins or glycolipids can be firmly bound to tissues or cross-linked and fixed with aldehydes, so conventional aldehyde fixative can be used.
3. The oxidation time of PAS Oxidant should not be too long, and the best temperature is 18-22 ℃.
4. The Oxidant and Schiff Reagent should be kept in an airtight place at 4 ℃ to avoid too much sunlight and air during use. Before use, it is better to take it out 30 min in advance to restore room temperature, and use it in dark.
5. Acid Differentiation Solution should be replaced frequently, and its differentiation time should be determined according to the thickness of section, the type of tissue and the old and new of acid differentiation solution. In addition, the washing time of tap water after differentiation should be enough.
6. The time of action in Oxidant and Schiff Reagent is very important, which depends on the thickness of section and the type of tissue.
7. This product is often used for conventional tissue section staining. For fungi, cells and extremely thin sections, it is recommended to purchase Glycogen Periodic Acid Schiff (PAS) Stain Kit (For Fungus), because the concentration of Oxidant and Hematoxylin Solution is lower, so it is not suitable for over staining.
8. The staining time of frozen section should be as short as possible.
9. For your safety and health, please wear experimental clothes and disposable gloves.