V02

螺旋体菌银染试剂盒(Warthin-Starry 法)

货号：G1940
规格：2×50mL
保存：2-8℃, 避光保存, 有效期 6 个月。

产品组成：

名称		2×50mL	保存
试剂(A): 酸性 Ag 溶液		50mL	2-8℃, 避光
试剂(B): Warthin-Starry 染色工作液	B1: Warthin-Starry 试剂 A	11 mL	2-8℃, 避光
	B2: Warthin-Starry 试剂 B	32 mL	2-8℃
	B3: Warthin-Starry 试剂 C	15 mL	2-8℃, 避光
按 B1: B2: B3=3:9:4 混合，即为 Warthin-Starry 染色液，不宜提前配置			

产品介绍：

螺旋体菌银染 Warthin-Starry 法是 Warthin 和 Starry 在 1920 年用于显示螺旋体的染色法，其染色原理在于螺旋体表面的粘蛋白会特异性的与银结合，呈黑色。该染色对比清楚，染片可以长期保存，但操作较为麻烦耗时。

螺旋体菌银染试剂盒(Warthin-Starry 法)可以显示螺旋体、幽门螺旋杆菌、猫抓病球杆菌、鼻硬结杆菌、真菌、神经纤维、黑色素颗粒等。索莱宝推荐采用亚甲蓝法不佳的情况下，采用本试剂盒对慢性胃炎和消化性溃疡的诊断和治疗效果的判断，作为鉴别幽门螺旋杆菌的染色方法。

自备材料：

10%福尔马林固定液、蒸馏水、染色缸、染色架、水浴锅

操作步骤：(*仅供参考*)

1. 组织固定于 10%福尔马林，常规脱水包埋。
2. 切片厚 4-6μm,常规脱蜡至水。蒸馏水浸洗切片 1min，再重复 2 次。
3. 切片入酸性 Ag 溶液（加盖），56℃染色 1h 或 43℃ 染色 4-24h。
4. 在上述染色过程中配制 Warthin-Starry 染色液，按 B1: B2: B3=3:9:4 混合，即为 Warthin-Starry 染色液。取出切片入 Warthin-Starry 染色液（加盖），置于 56℃恒温染色至切片呈淡黄棕色时取出，平放在染色架上，用预热至 56℃的蒸馏水彻底清洗。蒸馏水浸洗 5min。
5. 常规脱水，二甲苯透明，中性树胶封片。

染色结果：

菌丝及颗粒	黑色
背景	黄色

注意事项：

1. 尽量采用玻璃器皿，并且尽量用硫酸洗液浸泡并冲洗干净。
2. Warthin-Starry 染色时间很关键，建议预实验设置不同的染色时间同时染色多张切片，做梯度比较。
3. 根据不同的病种选择不同的孵育时间，如幽门螺旋杆菌 56℃ 1h 或 43℃ 4h，螺旋体、鼻硬结杆菌、尘埃颗粒染色时间应相应延长。
4. 为了您的安全和健康，请穿实验服并戴一次性手套操作。

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Spirochete Silver Staining Kit(Warthin-Starry Method)

Cat: G1940
Size: 2×50mL
Storage:2-8℃, avoid light, valid for 6 months.

Introduction

The staining method is used by Warthin and Starry in 1920 to display spirochetes. The principle of staining is that the mucins on the surface of spirochetes combine with silver to form black complex. The staining contrast is clear and the section can be preserved for a long time, but the operation is more cumbersome and time-consuming.

Spirochete Silver Staining Kit(Warthin-Starry Method) can show spirochetes, Helicobacter pylori, coccobacterium felis, sclerobacterium nasi, fungi, nerve fibers, melanin particles, etc. When the methylene blue method is not good, this kit is recommended for the diagnosis of chronic gastritis and peptic ulcer.

Kit Components

Reagent		2×50mL	Storage
Reagent(A): Acid Silver Solution		50mL	2-8℃, avoid light
Reagent(B): Warthin-Starry Stain Working Solution	B1: Warthin-Starry A	11mL	2-8℃, avoid light
	B2: Warthin-Starry B	32mL	2-8℃
	B3: Warthin-Starry C	15mL	2-8℃, avoid light
Mix reagent B1: B2: B3 in ratio 3:9:4 to form Warthin-Starry Stain Solution before use.			

Self Provided Materials

10% Formalin fixative, Distilled water, Water bath

Protocol (*for reference only*)

1. Fix the tissue in 10% formalin. Conventionally dehydrate and embed.
2. Cut the section in 4μm. Conventionally dewax and rehydrate.Wash with distilled water for 1min twice.
3. Stain the section with Acid Sliver Solution(Capped) for 1h at 56℃ or 4-24h at 43℃.
4. By the way, mix reagent B1: B2: B3 in ratio 3:9:4 to form Warthin-Starry Stain Solution. Re-dyeing in Warthin-Starry Stain Solution in water bath at 56℃ till the section is yellowish brown.
5. Wash the section thorough with distilled water preheated to 56 ℃. Rinse with distilled water for 5min.
6. Conventionally dehydrate, transparent by xylene and seal with resinene.

Result

Mycelium and Granules	Black
Background	Yellow

Note

1. The glass container used in the experiment shall be soaked in the washing liquid in advance, rinsed and dried.
2. Time of Warthin-Starry staining is very important. Too short staining time leads to too light bacterial staining, too long staining time leads to dark brown background, and the contrast is not clear. The feasible way to control the staining time is to set a time gradient to dye multiple sections at the same time, and choose the most appropriate staining time according to the results.
3. Different incubation time is selected according to different diseases, such as H. pylori 56 ℃ 1h or 43 ℃ 4h. The staining time of spirochetes, Sclerotinia nasalis and dust particles should be prolonged accordingly.
4. For your safety and health, please wear experimental clothes and disposable gloves.