植物组织铁染色试剂盒

货号： G4812
规格： 2×100mL
保存： 室温，避光保存，有效期 1 年。

产品组成：

试剂名称		2×100mL	保存
试剂(A): 铁染色工作液	试剂 A1:铁染色 A 液	50mL	室温，避光
	试剂 A2:铁染色 B 液	50mL	室温
临用前，1:1 等量混合 A1 和 A2 配制铁染色工作液，现用现配。			
试剂(B):组织透明液		100mL	室温

产品介绍：

Perls 普鲁士蓝反应(Prussian Blue Reaction)是一种古老而又敏感的显示铁的染色方法，其染色原理在于亚铁氰化钾溶液使三价铁离子从蛋白质中被稀盐酸分离出来，三价铁与亚铁氰化钾反应，生成一种不溶解的蓝色化合物，即三价铁的亚铁氰化物。

植物组织铁染色试剂盒由常规 Perls 染色液和组织保存液组成，使得植物材料能从整体上简单、快速的显示铁的分布情况。该试剂仅用于科研领域，不用于临床诊断或治疗。

操作步骤：（*仅供参考*）

1. **组织准备：**对于种子，用锋利的刀片和解剖针，将胚从种子中解剖出来，蒸馏水稍洗；对于根部和叶，采集完整样本，蒸馏水洗干净，置于滤纸上吸干多余水分。
2. **组织染色：**将样本浸入新鲜配制的 Perls 染色液中，染色 20-40 min。蒸馏水漂洗 3 次，每次 1-2 min。（见注意事项 2）
3. **组织透明：**用塑料夹取出样本，浸入蒸馏水中来回漂洗 3-5 次，置于滤纸上吸干多余水分后，浸入组织透明液中于水浴锅 70-80℃处理 20-40min 直至组织目视透明，处理期间如脱色液颜色较深可更换新鲜的组织脱色液。置于 1×PBS 中平衡 10-20min 后再观察拍照。
4. **结果观察：**将样本置于载玻片上，用刀片将样本薄切，盖上盖玻片，种子或胚不要压片，如果是组织切片可稍微压一下。解剖镜或普通显微镜下观察，拍照记录结果。

染色结果：

三价铁富集位点	蓝绿色到蓝色

阴性对照(可选): 取相同切片或种子入 5%草酸孵育 2-10h，经 Perls 染色，其余步骤同上，结果为阴性。

注意事项：

1. 整个操作过程中容器要干净，避免用金属铁制品，洗切片和容器时以蒸馏水为宜，因自来水内含铁质。
2. 组织样本染色时间可根据实验进行延长或缩短，茎、叶样本可负压处理促进染色。
3. 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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Plant Tissue Iron Stain Kit

Cat: G4812
Size: 2×100mL
Storage: RT,avoid light, valid for 1 year.

Kit Components

Reagent		2×100mL	Storage
Reagent A:Iron Stain Working Solution	Reagent A1:Iron Stian Solution A	50mL	RT,avoid light
	Reagent A2:Iron Stian Solution B	50mL	RT
Before use, mix A1 with A2 by equal to prepare Iron Stain Working Solution.			
Reagent B:Transparent Solution		100mL	RT

Introduction

Perls Prussian Blue Reaction is an ancient and sensitive staining method for displaying iron. Its staining principle is that potassium ferrocyanide solution separates trivalent iron ions from proteins by dilute hydrochloric acid, and trivalent iron reacts with potassium ferrocyanide to produce an insoluble blue compound, namely the ferrous cyanide of trivalent iron.

The Plant Tissue Iron Stain Kit consists of conventional Perls staining solution and tissue preservation solution, allowing plant materials to display the distribution of iron in a simple and fast manner as a whole. This reagent is only used in the field of scientific research and is not intended for clinical diagnosis or treatment.

Protocol(*for reference only*)

1. **Tissue Preparation**:For seeds, use a sharp blade and dissecting needle to dissect the embryo from the seed, and wash it slightly with distilled water; For roots and leaves, collect complete samples, wash them with distilled water, and place them on filter paper to absorb excess water.
2. **Tissue Staining**:Immerse the sample in freshly prepared Perls staining solution and stain for 20-40 min. Rinse with distilled water three times, each time for 1-2 min. (See Note 2)
3. **Tissue Transparency**:Take out the sample with a plastic clip, immerse it in distilled water and rinse it back and forth 3-5 times. Place it on a filter paper to absorb excess water, immerse it in tissue transparency solution, and treat it in a water bath at 70-80 ℃ for 20-40 min until the tissue is visually transparent. If the color of the decolorization solution is darker during the treatment, replace it with fresh tissue decolorization solution. Balance in 1×PBS for 10-20 minutes before observing and taking photos.
4. **Result Observation**:Place the sample on a glass slide, use a blade to thin cut the sample, cover it with a cover glass, and do not compress the seed or embryo. If it is a tissue slice, slightly press it. Observe under dissecting microscope or ordinary microscope, take photos and record the results.

Result

Trivalent iron enrichment site	Blue Green To Blue

Negative control (*optional*): Take the same slice or seed and incubate it with 5% oxalic acid for 2-10 hours. After Perls staining, follow the same steps as before, and the result is negative.

Note

1. During the entire operation process, the container should be clean and avoid using metal iron products. It is advisable to use distilled water when washing slices and containers, as tap water contains iron.
2. The staining time of tissue samples can be extended or shortened according to the experiment, and stem and leaf samples can be treated under negative pressure to promote staining.
3. For your safety and health, please wear laboratory clothes and disposable gloves for operation.

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