V02

# 植物组织活性氧检测试剂盒（DAB 法）

**货号：**G4815
**规格：**3×100mL
**保存：**2-8℃，避光保存，有效期 1 年。

## 产品组成：

| 试剂名称 | | 3×100mL | 保存 |
|---|---|---|---|
| 试剂(A):DAB 染色工作液 | 试剂 A1:DAB 染色液 | 10mL | 2-8℃，避光 |
| | 试剂 A2:DAB 稀释液 | 90mL | 2-8℃ |
| 临用前，按照 1:9 比例混合 A1 和 A2 配制 DAB 染色工作液，现配现用，不宜提前配制。 | | | |
| 试剂(B):组织脱色液 | | 100mL | 室温 |
| 试剂(C):组织保存液 | | 100mL | 室温 |

## 产品介绍：

植物组织在胁迫环境条件下会产生多种活性氧（ROS），ROS 活性非常大且极其不稳定，因此 ROS 的检测通常因其最终产物而定。过氧化物是植物活性氧主要组成之一，在过氧化物酶的催化下，过氧化物能与 DAB（3,3-二氨基联苯胺四盐酸盐）迅速反应生成棕红色沉淀，从而定位组织中的过氧化物。

索莱宝植物组织活性氧检测试剂盒（DAB 法）用于植物活性组织中的过氧化物染色。一般应用于较嫩的根尖、叶片等的整体染色，染色后组织中有过氧化物聚集的部位呈棕色至深棕色。

## 操作步骤：（*仅供参考*）

1. **组织准备：**采集经胁迫（例如重金属）的植物幼苗或叶片，自来水稍洗净，置于滤纸上吸干多余水分。
2. **组织染色：**按比例配制 DAB 染色工作液，将实验样本浸入 DAB 染色工作液中，-0.1MPa 负压处理 30min，然后室温避光浸染 4-12 h，至阳性部位出现深棕色，其余部位为淡黄色或近无色或呈植物本身的颜色即可。（可根据植物幼嫩程度和显色程度调整负压和染色时间）
3. **组织脱色：**用镊子将实验样本小心取出，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，浸入组织脱色液中于水浴锅 70-80℃处理 20-40min 直至完全脱去组织背景颜色，处理期间如脱色液颜色较深可更换新鲜的组织脱色液。
4. **结果观察：**放凉后取出实验样本，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，将样本转入适量组织保存液中浸泡 10-30 min，随后可取出拍照。样本可置于保存液中可常温保存月余。

## 染色结果：

| | |
|---|---|
| ROS 阳性部位 | 棕色至红棕色 |
| 组织背景（脱色后） | 无色或淡黄色 |

## 注意事项：

1. 过氧化物容易分解，因此植物样本需要新鲜采集，并尽快完成染色。
2. 任何外在刺激因素都可能刺激植物应激产生过氧化物，应尽量完整取材避免人为损伤造成假阳性。
3. 在组织样本染色完成后需尽快拍照保存结果。
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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# Plant Tissue ROS Detection Kit(DAB Method)

**Cat:** G4815
**Size:** 3×100mL
**Storage:** 2-8℃,avoid light, valid for 1 year.

## Kit Components

| Reagent | | 3×100mL | Storage |
|---|---|---|---|
| Reagent A: DAB Working Solution | Reagent A1:DAB Store Solution | 10mL | 2-8℃,avoid light |
| | Reagent A2:DAB Diluent Solution | 90mL | 2-8℃ |
| Before use, mix A1 with A2 by 1：9 to prepare DAB Working Solution. | | | |
| Reagent B:Decolorization Solution | | 100mL | RT |
| Reagent C:Preservation Solution | | 100mL | RT |

## Introduction

Plant tissues produce various reactive oxygen species (ROS) under stress environmental conditions, and ROS activity is very high and extremely unstable. Therefore, the detection of ROS is usually determined by its final product. Peroxides are one of the main components of plant reactive oxygen species. Under the catalysis of peroxidase, peroxides can quickly react with DAB (3,3-diaminobenzidine tetrahydrochloride) to form brownish red precipitates, thereby locating peroxides in tissues.

The Solarbio Plant Tissue ROS Detection Kit(DAB Method) is used for peroxide staining in plant living tissues. Generally used for overall staining of tender root tips, leaves, etc. After staining, the areas in the tissue where peroxides accumulate appear brown to dark brown.

## Protocol(*for reference only*)

1. **Organizational Preparation**:Collect plant seedlings or leaves that have been treated (such as heavy metal stress), wash them with tap water, and place them on filter paper to absorb excess water.
2. **Tissue Staining**:Immerse the experimental sample in DAB Working Solution, treat it under negative pressure of -0.1MPa for 30 min, and then immerse it in room temperature and dark light for 4-12 hours until the positive area appears dark blue, and the remaining areas appear light blue or nearly colorless or in the color of the plant itself. (Negative pressure and staining time can be adjusted based on the degree of plant tenderness and color development)
3. **Tissue Decolorization**:Carefully remove the experiment with tweezers, immerse it in distilled water and rinse back and forth 3-5 times. Place it on a filter paper to absorb excess water, immerse it in the tissue decolorization solution, and treat it in a water bath at 70-80 ℃ for 20-40 min until the background color of the tissue is completely removed. If the color of the decolorization solution is darker during the treatment, replace it with fresh tissue decolorization solution.
4. **Result Observation**:After cooling, take out the experimental sample, immerse it in distilled water and rinse it back and forth 3-5 times. Place it on a filter paper to absorb excess water, then transfer the sample to an appropriate amount of tissue preservation solution and soak it for 10 to 30 min. Then, take out the sample and take a photo. The sample can be placed in a storage solution and stored at room temperature for more than a month.

## Result

| | |
|---|---|
| ROS Positive Areas | Brown to Red Brown |
| Background(after decolorization) | Colorless or Light Yellow |

## Note

1. Peroxides are prone to decomposition, so plant samples need to be collected fresh and stained as soon as possible.
2. Any external stimuli may stimulate plant stress to produce peroxides, and it is recommended to take complete samples as much as possible to avoid artificial damage causing false positives.
3. It is usually recommended that the volume of the decolorization solution be more than 10 times the sample volume during decolorization. It can be reused but it is recommended to discard it when the color is too dark.
4. After the staining of the tissue sample is completed, it is necessary to take photos and save the results as soon as possible.
5. For your safety and health, please wear laboratory clothes and disposable gloves for operation.