V02

茜素红 S 染色液(1%, pH4.2)

货号：G1452
规格：100mL
保存：2-8 ℃, 避光保存, 有效期 6 个月。

产品介绍：

钙在人体内大量存在，构成骨骼作为支持人体的支架，在分泌、运送、肌肉收缩、神 经传导等也起重要作用。 许多染料可以于钙形成螯合物，包括茜素红 S、红紫素、核固红等。茜素红 S 属于一种蒽醌类衍生物，是茜素磺酸钠盐，它能与碳酸钙或磷酸钙中的钙盐螯合形成橙红色复合物。茜素红 S 往往对少量的沉积物染色可得到更可靠的结果。常与固绿或 Mayer 苏木素染色液合用，结合形成橘红色沉淀，适用于少量钙盐组织的染色。

操作步骤：(*仅供参考*)

(一)石蜡切片

1. 组织固定于 10%中性福尔马林或无水乙醇，常规脱水包埋。
2. 切片脱蜡至 95%乙醇。
3. 载玻片竖立放置，彻底风干。
4. 向切片上滴加茜素红 S 染色液(1%, pH4.2)，室温染色 5-10min。
5. 蒸馏水快速冲洗，防止过度洗涤导致钙盐着色脱去。（*见注意事项 1*）
6. (可选)复染液复染，蒸馏水冲洗 3 次。
7. 无水乙醇开始脱水，二甲苯透明，中性树胶封固。

(二)培养细胞

1. 移除培养板中培养基，用 PBS 洗 2 次。
2. 用 10%中性福尔马林或 4%多聚甲醛固定 10-15min。
3. 弃去固定液，用蒸馏水洗 3 次。
4. 将水完全吸干净后慢慢加入茜素红 S 染色液(1%, pH4.2)，室温染色 20-30min。
5. 蒸馏水快速冲洗，防止过度洗涤导致钙盐着色脱去。（*见注意事项 1*）
6. 每孔加入适量无水乙醇防止孔内干燥。显微镜下观察并拍照。（*见注意事项 3*）

染色结果：

钙沉积物	紫红色至橙红色

注意事项：

1. 茜素红 S 染色液的染色时间要根据钙盐的含量来确定，应在显微镜下观察，见钙盐呈较深的橙红色即取出水洗，如染色时间过长，容易出现弥散现象，一般 5min 即可。若是想要最大程度上保留钙盐着色，建议使用无水乙醇洗涤切片和细胞，该操作可有效防止脱色。
2. 经过茜素红 S 染色液染色后，钙沉积物是双折射的。该方法在辨别和检测少量钙时特别有用，如肾中的异常钙化(尿钙过多)。
3. 钙盐着色颜色与钙盐沉积情况和染色前 pH 有关系，如果出现明显大量矿化结节并聚集成团，钙盐着色会偏向于橙红色，反之整体可能会偏向于紫色或紫红色。建议细胞在固定之后用弱酸性蒸馏水或超纯水洗涤细胞，PBS 清洗可能会影响细胞 pH 导致染色结果偏紫。
4. 复染液采用固绿时，背景呈绿色。复染液采用 Mayer 苏木素时，细胞核呈蓝色。
5. 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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Alizarin Red S Solution, 1%, pH 4.2

Cat: G1452
Size:100mL
Storage: 2-8℃, avoid light, valid for 6 months.

Introduction

Calcium is abundant in human body. As a scaffold to support human body, bone plays an important role in secretion, transportation, muscle contraction, nerve conduction and so on. Alizarin Red S is an anthraquinone derivative, which is sodium alizarin sulfonate. It can chelate with calcium carbonate or calcium phosphate to form orange red complex. Alizarin Red S can get more reliable results for a small amount of sediment. It is often combined with fast green or Mayer hematoxylin staining solution to form orange red precipitate, which is suitable for dyeing a small amount of calcium salt tissue.

Protocol(*for reference only*)

For paraffin section

1. Fix the tissue in 10% neutral formalin or ethanol, then dehydrate and embed.
2. Dewax the section to 95% ethanol.
3. Place the section vertically and air dry thoroughly.
4. Add Alizarin Red S Solution,1%, pH 4.2 onto the section and stain for 5-10min.
5. Quickly rinse in distilled water to prevent excessive washing from causing discoloration and removal of calcium salts.(*See Note 1*)
6. (*optional*)Re-dyeing with counterstain solution and wash with distilled water for three times.
7. Dehydrate with anhydrous ethanol, transparent with xylene and seal with neutral gum.

For cultured cell

1. Remove the medium from the plate and wash twice with PBS.
2. Fix in 10% neutral formalin or 4% paraformaldehyde for 10-15min.
3. Discard the fixative and wash with distilled water for 3 times.
4. After the water is completely absorbed, add Alizarin Red S Solution,1%, pH 4.2 slowly and dye for 5-10min.
5. Quickly rinse in distilled water to prevent excessive washing from causing discoloration and removal of calcium salts.(*See Note 1*)
6. Add a proper amount of anhydrous ethanol into each hole to prevent drying in the hole. Observe and photograph under the microscope.(*See Note 3*)

Result

Calcium Deposits	Purple Red to Orange Red

Note

1. The dyeing time of Alizarin Red S Solution should be determined according to the content of calcium salt. It should be observed under the microscope. When the calcium salt is deep red, take out and wash. If you want to preserve calcium salt staining to the greatest extent possible, it is recommended to wash the slices and cells with anhydrous ethanol, which can effectively prevent discoloration.After dyeing with Alizarin Red S Solution, the calcium deposits are birefringent.
2. After staining with Alizarin Red S Solution, calcium deposits exhibit birefringence. This method is particularly useful for identifying and detecting small amounts of calcium, such as abnormal calcification in the kidneys (excessive urinary calcium).
3. After staining with Alizarin Red S Solution, calcium deposits exhibit birefringence. This method is particularly useful for identifying and detecting small amounts of calcium, such as abnormal calcification in the kidneys (excessive urinary calcium).
4. When re-dyeing with fast green, the background is green. When re-dyeing with Mayer's hematoxylin staining solution, the nucleus is blue.
5. For your safety and health, please wear experimental clothes and disposable gloves.