V02

钙盐染色试剂盒(改良茜素红 S 法)

货号：G3280
规格：3×50mL
保存：2-8℃, 避光保存, 有效期6个月。

产品组成：

名称	3×50mL	保存
试剂(A): 茜素红S染色液	50mL	2-8℃, 避光
试剂(B): McGee-Russell分化液	50mL	室温
试剂(C): Mayer 苏木素染色液	50mL	2-8℃, 避光

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。钙在机体内以两种形式存在，一种是离子钙，存在血液循环内，即所谓血钙；另一种是结合钙，和蛋白、碳酸或磷酸结合而沉着在组织内。除骨骼和牙齿外，正常时钙渗透在所有组织和细胞中，一般不以固体状态出现在组织内。但在某些情况下，钙析出成固体并沉着于组织内，则为病理性钙盐沉着。当使用HE染色时，钙一般呈紫蓝色。许多染料可以与钙形成螯合物，包括茜素红S、红紫素、核固红等。茜素红S属一种蒽醌类衍生物，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。一般来说这些染料在识别中至大量的钙时，效果优于轻微染色的微量钙沉积。但茜素红S对微量的钙质也有很好的显示效果。

钙盐染色常用方法有硝酸银法和茜素红S法，本染色液采用改良McGee-Russell法，用茜素红S和Mayer苏木素，钙盐和茜素红s结合形成橙红色沉淀，尤其适用于少量钙盐组织的染色。

自备材料：

10%中性福尔马林固定液、自来水、光学显微镜

操作步骤：*(仅供参考)*

1. 组织固定于10%中性福尔马林，常规脱水包埋。
2. 切片厚5μm，常规脱蜡至95%乙醇，自然晾干。
3. 切片用茜素红S染色液滴染1-5min (见注意事项1)。稍水洗。
4. *（可选）*McGee-Russell分化液迅速分化数秒，水稍洗。
5. Mayer苏木素染色液浅染胞核1-2min。自来水冲洗10min。
6. 常规脱水透明，中性树胶封固。

染色结果：

钙沉积物	橙红色
细胞核	蓝色

注意事项：

1. 茜素红S 的染色时间要根据钙盐的含量来确定，应在显微镜下观察。钙盐呈深橙红色即取出水洗。如染色时间过长，就出现弥散现象，一般1~2min即可。
2. 经过茜素红S 染色液染色后，钙沉积物是双折射的。
3. 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），其显示为橘红色。

Tel: 400-968-6088 https://www.solarbio.com E-mail: sales-china@solarbio.com
Address: No. 85, Liandong U Valley, Middle Zone, 101102, Tongzhou Dist, Beijing, China

Calcium Stain Kit (Modified Alizarin Red S Method)

Cat: G3280
Size: 3×50mL
Storage: 2-8℃, avoid light, valid for 6 months.

Kit Components

Reagent	3×50mL	Storage
Reagent (A): Alizarin Red S Staining Solution	50mL	2-8℃, avoid light
Reagent (B): McGee-Russell Differentiation	50mL	RT
Reagent (C): Mayer Hematoxylin Staining Solution	50mL	2-8℃, avoid light

Introduction

Calcium is abundant in human body, which form bones as a scaffold to support human body. Calcium plays an important role in secretion, transportation, muscle contraction, nerve conduction and so on. Calcium exists in two forms in the body, one is ionic calcium, which exists in the blood circulation, namely blood calcium; the other is bound calcium, which combines with protein, carbonic acid or phosphoric acid and sinks in the tissue. Except for bones and teeth, calcium normally permeates all tissues and cells, and generally does not appear in solid state in tissues. However, in some cases, calcium precipitates into a solid and settles in the tissue, which is pathological calcium deposition. When HE staining is used, calcium is usually purple blue. Many dyes can form chelates with calcium, including Alizarin Red S, purpurin, nuclear fast red, etc. 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. Generally speaking, the effect of these dyes is better than that of slight staining when they are used to recognize large amount of calcium. But Alizarin Red S can get more reliable results for a small amount of sediment.

Silver nitrate method and alizarin red S method are commonly used in calcium salt staining. The modified McGee Russell method is used in this staining solution, which is especially suitable for the dyeing of a small amount of calcium salt tissue.

Self Provided Materials

10% neutral formalin fixative(NBF), Tap water, Microscope.

Protocol(*for reference only*)

1. Fix the tissue with 10%NBF and conventionally dehydrate and embed.
2. Cut the section into 5μm, routinely dewaxed to 95% ethanol, and dried naturally.
3. Dye with Alizarin Red S Staining Solution for 1-5min.(See note 1)Rinse with water for at least 1 min.
4. *(Selectable)* Differentiate with McGee-Russell Differentiation for few seconds quickly. Rinse with water for at least 1 min.
5. Re-dye with Mayer Hematoxylin for 1-2min. Rinse with tap water for 10min.
6. Conventionally dehydrate ,transparent and seal with resinene.

Result

Calcium Precipitation	Orange Red
Nucleus	Blue

Note

1. The dyeing time of Alizarin Red S should be determined according to the content of calcium salt, and should be observed under the microscope. When the calcium salt is dark orange red, take it out and wash it with water. If the dyeing time is too long, dispersion will appear, generally 1-2mins.
2. After dyeing with Alizarin Red S, the calcium deposits are birefringent.
3. This method is particularly useful in identifying and detecting small amounts of calcium, such as abnormal calcium in the kidney (excessive calcium in the urine), which is shown as orange red.