

Scharlach Red S Staining Solution (0.2%)

Cat #: A-CSH337

Size: 100mL

Storage: Room temperature, avoid light (12 months)

Product Composition

Component	Size	Store at
Alizarin Red S staining solution (0.2%)	100ml	10~30°C, and were protected from light

Product Description

Calcium is abundant in the human body, forming the skeletal framework that serves as the support structure. It also plays a crucial role in secretion, transportation, muscle contraction, and nerve conduction. Calcium exists in two forms within the body: ionized calcium, which circulates in the bloodstream (referred to as blood calcium), and bound calcium, which combines with proteins, carbonates, or phosphates and deposits in tissues. Apart from bones and teeth, calcium normally permeates all tissues and cells in a non-solid state. However, in certain circumstances, calcium can precipitate and deposit as a solid in tissues, leading to pathological calcium salt deposition. The deposited calcium salts are primarily calcium phosphate, followed by calcium carbonate. Calcium salts are typically uniaxial, but calcium oxalate is birefringent. When using HE staining, calcium generally appears purple-blue. Many dyes can form chelates with calcium, including Alizarin Red S, Eriochrome Red B, and Nuclear Fast Red.

Alizarin Red S is a derivative of anthraquinone and the sodium salt of alizarin sulfonic acid. It can chelate with calcium salts in calcium carbonate or calcium phosphate to form an orange-red complex. Generally, these dyes are more effective in identifying large amounts of calcium compared to the slight staining of trace calcium deposits. However, Alizarin Red S staining often provides more reliable results for staining small amounts of deposits. It is commonly used in combination with Alcian Green or Mayer's hematoxylin stain, resulting in the formation of an orange-red precipitate, suitable for staining tissues with small amounts of calcium salts

Usage

1. Fix the tissue in 10% neutral formalin or ethanol and perform routine dehydration and embedding.
2. Section the tissue to 95% ethanol.
3. Place the slides vertically and allow them to air dry completely.
4. Immerse the sections in a staining dish containing Alizarin Red S staining solution for 5-20 minutes (see Note 1).
5. Rinse quickly with distilled water.
6. (Optional) Restain with a restaining solution, rinse with distilled water three times.
7. Perform routine dehydration, clearing, and mount with a neutral mounting medium.

Staining Results

Calcium sediment	orange red
background	Depending on the color of the counterdye solution

Notes

1. The staining time of the Alizarin Red S staining solution should be determined based on the content of calcium salts. It should be observed under a microscope, and the sections should be removed and rinsed with water when the calcium salts exhibit a deep orange-red color. Prolonged staining time may result in diffusion. Generally, 1-2 minutes is sufficient.
2. Calcium deposits appear birefringent after staining with the Alizarin Red S staining solution.
3. Alizarin Red S staining is particularly useful for identifying and detecting small amounts of calcium, such as abnormal calcification in the kidneys (excessive urinary calcium).
4. For your safety and health, please wear lab attire and disposable gloves when performing the procedure.

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.