

Verhoeff Elastic Fiber Staining Solution (Orange G Counterstain)

V1518552

Storage Room temperature. Protect from light.

Shipping Ambient temperature transportation. Please store under the specified storage conditions immediately upon receipt.

Introduction

In a narrow sense, connective tissue refers to its three types of fibers: collagen fibers, reticular fibers, and elastic fibers. Elastic fibers are mainly distributed in the arterial walls, alveolar walls, and skin of the human body. They appear yellow when fresh and have strong refraction. Elastic fiber staining can demonstrate changes in elastic fibers in skin tissue, such as elastic nevus, granuloma annulare, and scleroderma; it can reveal and evaluate endocardial and arterial lesions, and observe whether some lesions are accompanied by hyperplasia or destruction of elastic fibers. It can also identify tumor components such as elastofibroma, in which elastic fiber globules can be clearly seen after elastic fiber staining. Common elastic fiber staining methods include Gomori Aldehyde Fuchsin, Resorcinol-Fuchsin, Orcein, Victoria Blue, and Iron-Iodine Hematoxylin.

Verhoeff Elastic Fiber Staining Solution (Orange G Counterstain) belongs to the iron-iodine hematoxylin staining method. Its staining principle is that elastin and pre-elastic fibers are highly cross-linked via disulfide bonds. After oxidation with iodine, some disulfide bonds are converted into anionic sulfuric acid derivatives, which are strongly basophilic and selectively absorb the basic dye hematoxylin in the staining solution. This product uses a modified Orange G counterstaining method. After staining, coarse fibers are deeply stained, while fine fibers are stained less intensely. Nuclei and elastic fibers appear (blue) black, and other tissues appear purplish red, with clear contrast. This reagent is for research use only and not for clinical diagnosis or other purposes.

Kit Contents :

V1518552	Component	3×50mL	Storage
V1518552A	Verhoeff Staining Solution A	30mL	RT
V1518552B	Verhoeff Staining Solution B	12mL	RT
V1518552C	Verhoeff Staining Solution C	12mL	RT. Store in the dark.
V1518552D	Verhoeff Differentiation Solution	50mL	RT
V1518552E	Fuchsin Staining Solution	25mL	RT
V1518552F	Orange G Staining Solution	25mL	RT

Immediately before use, mix A:B:C at a ratio of 5:2:2 to prepare Verhoeff Staining Solution. Use within 2–3 hours.

Immediately before use, mix E:F at a ratio of 1:1 to prepare Orange G Staining Solution.

Materials Required (User-supplied):

Xylene or dewaxing clearing agent, graded ethanol, neutral balsam.

Protocol (For Reference Only):

1. Deparaffinize paraffin sections with xylene or dewaxing clearing agent, then hydrate to water.
2. Stain sections in freshly prepared Verhoeff Staining Solution for 10–30 min, then rinse rapidly with tap water.
3. Differentiate in Verhoeff Differentiation Solution until elastic fibers appear black and the background gray; rinse rapidly with tap water.
4. Rinse quickly in 95% ethanol to remove iodine.
5. Counterstain with Orange G Staining Solution for 25–60 s, then blot excess stain.
6. Dehydrate rapidly in absolute ethanol, clear with xylene or dewaxing clearing agent, and mount with neutral balsam.

Staining Results:

Elastic fibers, nuclei: Black or blue-black;

Erythrocytes: Yellow;

Other tissues: Purplish red.

Precautions:

1. Most fixatives are suitable for fixation of sections used with this staining solution.
2. Pay close attention to the degree of differentiation with Verhoeff Differentiation Solution; fine fibers may fail to stain if over-differentiated.
3. Rinsing with warm tap water can enhance staining intensity of fibers.
4. For your safety and health, wear a lab coat and disposable gloves during operation.