

Verhoeff Elastic Fiber Staining Solution (Eosin Counterstain)

V1518609

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 the three types of fibers it contains: 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, Iron-Iodine Hematoxylin, and others.

Verhoeff Elastic Fiber Staining Solution (Eosin Counterstain) belongs to the iron-iodine hematoxylin staining method. Its staining principle is that elastin and proelastin fibers are highly cross-linked via disulfide bonds. After oxidation by iodine, part of the disulfide bonds is 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 eosin counterstaining method. After staining, coarse fibers are deeply stained, while fine fibers show slightly weaker staining. Nuclei and elastic fibers appear (blue) black, and other tissues appear red, with clear contrast. This reagent is for research use only and not for clinical diagnosis or other purposes.

Kit Contents

V1518609	Component	3×50mL	Storage
V1518609A	Verhoeff Staining Solution A	30mL	RT
V1518609B	Verhoeff Staining Solution B	12mL	RT
V1518609C	Verhoeff Staining Solution C	12mL	RT. Store in the dark.
V1518609D	Verhoeff Differentiation Solution	50mL	RT
V1518609E	Eosin Staining Solution	50mL	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.

Materials Required (User-supplied):

Xylene or eco-friendly dewaxing and clearing agent, graded ethanol, neutral balsam

Protocol (For Reference Only):

1. Deparaffinize paraffin sections with xylene or dewaxing clearing agent and 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 and nuclei: Black or blue-black;

Erythrocytes: Brownish yellow;

Other tissues: Red in varying degrees.

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.