Elastic Fiber Staining Kit, E.V.G Method

Catalog No.: RA20132

Basic Information

Product name	Elastic Fiber Staining Kit, E.V.G Method
Sizes	50 mL
Storage	RT, keep away from light
Shipping	RT
Validity	12 months

Product Introduction

Connective tissue, in a narrow sense, is composed of three types of fibers: collagen fibers, reticular fibers, and elastic fibers. Elastic fibers are mainly distributed in the human arterial walls, alveolar walls, and skin. They appear yellow and are highly refractile when fresh.

Elastic fiber staining can reveal changes in elastic fibers in skin tissues, such as elastic nevus, granuloma annulare, and scleroderma. It is also used to display and assess lesions of the endocardium and arteries, to observe whether certain pathological changes are accompanied by proliferation or destruction of elastic fibers, and to identify tumor components such as elastic fibromas. After elastic fiber staining, elastic fiber balls within the tumor can be clearly observed. Commonly used elastic fiber staining methods include the Gomori aldehyde-fuchsin method, resorcin-fuchsin method, orcein method, Victoria blue method, and iron hematoxylin method.

EnkiLife Elastic Fiber Staining Solution (E.V.G Method) belongs to the iron hematoxylin staining category. The staining principle is based on the fact that elastin and pre-elastin fibers are highly cross-linked via disulfide bonds. After oxidation by iodine, some disulfide bonds are converted into anionic sulfated derivatives, which are strongly basophilic and selectively absorb the basic dye hematoxylin in the staining solution. This product uses the most commonly used Van Gieson (VG) counterstaining method. After staining, thick fibers are deeply stained, while thin fibers are slightly less distinct. Elastic fibers appear black, collagen fibers red, and muscle fibers and erythrocytes yellow, providing a clear contrast.

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Product Components

Components		3x 50mL
Reagent (A): Verhöeff dye solution	A1: Verhöeff Staining Solution A	30 ml
	A2: Verhöeff Staining Solution B	12 ml
	A3: Verhöeff Staining Solution C	12 ml
Before use, mix A1:A2:A3 at a ratio of 5:2:2 to prepare the Verhöeff staining solution. Use within 2–3 h. Do not prepare in advance.		
Reagent (B): Verhöeff Differentiating Solution		50 mL
Reagent (C): Van Gieson dye solution 50 mL	C1: Fuchsin Staining Solution	5 ml
	C2: Fuchsin Diluent	45 ml
Before use, mix C1:C2 at a ratio of 1:9 to prepare the Van Gieson staining solution. Do not prepare in advance.		

Materials Required (Not Supplied)

1. Xylene or dewaxing clearing solution, graded ethanol, neutral balsam.

Experimental procedure

1. Dewax paraffin sections with xylene or dewaxing solution and hydrate to water.
2. Immerse sections in freshly prepared Verhöeff staining solution for 10–30 min. Rinse quickly with tap water.
3. Differentiate with Verhöeff differentiating solution until elastic fibers appear black and the background appears gray. Rinse quickly with tap water.
4. Rinse quickly with 95% ethanol to remove iodine.
5. Counterstain with freshly prepared Van Gieson staining solution for 20–60 s. Blot excess staining solution.
6. Dehydrate quickly with absolute ethanol, clear with xylene or clearing solution, and mount with neutral balsam.

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Staining Results

Component	Color
Elastic fibers, nuclei	Black
Collagen fibers	Red
Muscle fibers, erythrocytes	Yellow

Notes

1. Most fixatives are compatible with this staining solution for section fixation.
2. Carefully control the differentiation time with Verhöeff differentiating solution; over-differentiation may result in poor staining of thin fibers.
3. Rinsing with warm tap water can enhance fiber staining intensity.
4. For safety and health, wear lab coats and disposable gloves during operation.

This product is for research use only!