

Masson Trichrome Staining Kit

Catalog No.: RA20094

Basic Information

Product name	Masson Trichrome Staining Kit
Sizes	50 mL, 100 mL
Storage	RT, keep away from light
Shipping	RT
Validity	12 months

Product Introduction

Connective tissue, in a narrow sense, refers to the three types of fibers it contains: collagen fibers, reticular fibers, and elastic fibers. Among them, collagen fibers are the most widely distributed and abundant. Masson trichrome staining, also known as Masson staining, is the most classical method for connective tissue staining and is an authoritative and traditional technique for collagen fiber visualization.

The so-called "trichrome" staining typically refers to staining the nucleus and selectively displaying collagen and muscle fibers. The staining principle is related to the size of anionic dye molecules and tissue permeability: smaller molecules penetrate dense, low-permeability tissues more easily, while larger molecules only enter loosely structured, high-permeability tissues. Since light green or aniline blue have large molecular weights, after Masson staining, muscle fibers appear red, while collagen fibers appear green (light green) or blue (aniline blue). This method is mainly used to distinguish collagen fibers from muscle fibers.

EnkiLife's Masson Trichrome Staining Solution features: Stable staining; Short differentiation time; Clear and bright colors; Wide application range, suitable for paraffin and frozen sections; Stained sections can be stored for a long time without fading.

Product Components

Components		7x 50mL	7x 100mL
Reagent (A): Weigert Iron Hematoxylin Staining Solution	A1: Weigert Solution A	25 mL	50 mL
	A2: Weigert Solution B	25 mL	50 mL

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Mix A1 and A1 in equal parts before use. Do not prepare in advance.		
Reagent (B): Acid Ethanol Differentiation Solution	50 mL	100 mL
Reagent (C): Masson Blue Solution	50 mL	100 mL
Reagent (D): Ponceau Fuchsin Staining Solution	50 mL	100 mL
Reagent (E): Weak Acid Solution	50 mL	100 mL
Reagent (F): Phosphomolybdic Acid Solution	50 mL	100 mL
Reagent (G): Aniline Blue Staining Solution	50 mL	100 mL

Materials Required (Not Supplied)

1. Fixative: Choose from formalin-mercury or formalin-saline solution.
2. Distilled water, graded ethanol series, xylene or eco-friendly deparaffinizing and clearing solution.

Experimental procedure

Perform a pilot experiment before starting formal staining.

1. Deparaffinize and rehydrate sections to water. Stain with freshly prepared Weigert Iron Hematoxylin for 5–10 min.
2. Differentiate with acid ethanol differentiation solution for 2–10 s, then rinse with water.
3. Blue with Masson blue solution for 30–60 s, rinse with distilled water for 1 min.
4. Stain with Ponceau Fuchsin staining solution for 5–10 min, rinse briefly with distilled water.
5. Treat with phosphomolybdic acid solution for 2–5 min (do not rinse with water).
6. Transfer directly into aniline blue staining solution for 1–3 min (do not rinse with water).
7. Rinse with weak acid solution until no more blue color leaches out (control under microscope if necessary).
8. Quickly dehydrate with 95% ethanol, then absolute ethanol 3 times, 5–10 s each.
9. Clear with xylene or deparaffinizing solution 3 times, 1–2 min each, and mount with neutral balsam.

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Staining Results

Component	Color
Nuclei, Collagen fibers / Protein	Blue
Cytoplasm, Muscle, Red blood cells	Red

Notes

1. This staining solution can be used with either drop staining or immersion staining. For small sample numbers, drop staining is recommended.
2. Deparaffinization should be thorough. Fixation plays a key role; different fixatives may extend or shorten staining time.
3. For frozen sections, fix with ether-ethanol mixture or formalin-based fixative for 10 s–3 min, then rinse with water before staining.
4. Mix A1 and A2 in equal parts to prepare Weigert Iron Hematoxylin. It generally loses staining ability after 24 h.
5. Acid ethanol differentiation time should be adjusted based on section thickness, tissue type, and tissue age.
6. This method uses Weigert Iron Hematoxylin to stain nuclei. Harris Hematoxylin may also be used, but the nuclear color may not be as vivid. The main purpose of this staining is to distinguish collagen fibers from muscle fibers; bright and clear contrast is sufficient, and nuclear staining is optional.
7. Hematoxylin (blue) stains nuclei, Ponceau acid fuchsin (red) stains muscle fibers, and aniline blue (blue) or fast green (green) stains collagen fibers. Using fast green enables trichrome staining; using aniline blue results in two-color staining.
8. Weak acid solution enhances color clarity and brightness. If used in large quantities, it can be replaced with 0.1–0.3% acetic acid solution.
9. Phosphomolybdic acid differentiates collagen fibers stained red to colorless or light red, while muscle and fibrin remain red. It also acts as a mordant for collagen, enhancing binding with large-molecule dyes. Differentiation time is usually 1–2 min, depending on staining intensity.
10. Masson blue solution can be replaced with Scott tap water substitute or 0.1–1% lithium carbonate aqueous solution.
11. For your safety and health, wear a lab coat and disposable gloves during operation.

This product is for research use only!