

Russell Modified Movat Pentachrome Staining Solution

Cat. No.: R1518553 | Pack size: 9×50 mL | Storage: 2-8°C, protected from light; room temperature

Overview

In a narrow sense, connective tissue refers to the three types of fibers it contains: collagen fibers, reticular fibers, and elastic fibers. There are many staining methods for connective tissue, such as Masson trichrome staining, Van Gieson staining, Gomori ammoniacal silver method, and Mallory phosphotungstic acid hematoxylin staining. However, the above methods only focus on the staining of one or two kinds of tissues.

Russell Modified Movat Pentachrome Staining Solution is widely used for its rich and bright staining. This method is mainly used to demonstrate atherosclerotic plaques. Weigert hematoxylin is used to stain cell nuclei, safranin fuchsin to stain cytoplasm, crocein scarlet to stain collagen tissue, and alcian blue to stain the matrix (proteoglycans). Due to the complicated operation procedure of this kit, the staining effect is highly related to the experience and proficiency of the operator, so it is not easy to obtain consistently satisfactory results. This reagent is for research use only. Not for clinical diagnosis or other purposes.

Product Components and Storage Conditions

Cat. No.	Component	9×50 mL	Storage
R1518553A	Hypo Solution	50 mL	RT
R1518553B	Alcian Blue Staining Solution	50 mL	2-8°C. Store in the dark.
R1518553C	Alkalic Alcohol Solution	50 mL	RT
R1518553D	Weigert A	30 mL	RT
R1518553E	Weigert B	20 mL	RT
R1518553F	Weigert C	10 mL	RT. Store in the dark.
R1518553G	Safranin Fuchsin A	40 mL	RT
R1518553H	Safranin Fuchsin B	10 mL	RT
R1518553I	Phosphotungstic Acid Solution	50 mL	RT. Store in the dark.

Cat. No.	Component	9×50 mL	Storage
R1518553J	Weak Acid Differentiation Solution	50 mL	RT
R1518553K	Alcoholic Crocein Scarlet Staining Solution	50 mL	RT
R1518553L	Bouin Fixative	250 mL	RT. Store in the dark.

Immediately before use, mix D:E:F at a ratio of 3:2:1 to obtain Weigert hematoxylin. Do not prepare in advance.

Immediately before use, mix G:H at a ratio of 4:1 to obtain safranin fuchsin staining solution. Do not prepare in advance.

Materials Required

- Graded ethanol, distilled water, xylene or eco-friendly dewaxing and clearing agent, neutral balsam.
- Microwave oven.

Protocol (For Reference Only)

1. Deparaffinize paraffin sections routinely with xylene or dewaxing and clearing agent, and rehydrate with graded ethanol.
2. Place an appropriate amount of Bouin fixative in a microwave oven, heat moderately for 30-60 seconds, then immediately immerse the sections for 10 minutes.
3. Rinse in running water for 10 minutes.
4. Treat sections in Hypo Solution for 5 minutes, then rinse 2-3 times with distilled water.
5. Stain sections in Alcian Blue Staining Solution for 20 minutes, then rinse in running water for 2-5 minutes.
6. Preheat Alkaline Alcohol Solution in a microwave oven at high power to 45-60°C, then immerse sections for 10 minutes.
7. Rinse in running water for 2-5 minutes.
8. Stain sections in pre-mixed Weigert Hematoxylin Staining Solution for 60 minutes, protected from light.
9. Rinse briefly in running water, then wash 2-3 times with distilled water, 3-5 minutes each time.
10. Stain sections in pre-mixed Safranin Fuchsin Staining Solution for 1 minute, protected from light.
11. Rinse 2-3 times with distilled water, 3-5 minutes each time.
12. Treat sections in Phosphotungstic Acid Solution for 5 minutes, then transfer directly into Weak Acid Differentiation Solution for 5 minutes.

13. Rinse 2-3 times with distilled water, 3-5 minutes each time.
14. Dehydrate: 95% ethanol for 1 minute, 100% ethanol twice for 1 minute each.
15. Stain sections in Crocein Scarlet Staining Solution for 5 minutes.
16. Dehydrate: absolute ethanol twice for 1 minute each, clear in xylene or dewaxing and clearing agent, and coverslip.

Staining Results

Nuclei and elastic fibers: Black.

Collagen and reticular fibers: Yellow.

Proteoglycans: bluish Green.

Fibrinoid, deep cellulose: Deep red.

Cardiac muscle and smooth muscle: Red.

Foam cells: Purple.

Precautions

1. Due to staining intensity, tissue section quality and other factors, not all five colors may be displayed after staining. Anti-slip section treatment is recommended.
2. Section thickness is generally about 5 μm ; elastic fiber differentiation is usually completed within 2-3 minutes.
3. Thorough rinsing in running water to remove Weigert Hematoxylin is critical; inadequate rinsing will inhibit subsequent staining steps.
4. This staining method can demonstrate *Cryptococcus neoformans*, which is stained bright blue.
5. Use reagents promptly after opening to avoid affecting experimental results.
6. For your safety and health, wear a lab coat and disposable gloves during operation.

Specifications

Attribute	Value
Synonyms	Russell modified Movat color colored dye
Specifications & Purity	BioReagent, Biological Stain, for microscopy
Stability And Storage	Each component has a shelf life of 1 year under corresponding storage conditions.

Attribute	Value
Storage Conditions	Store at 2-8°C, Protected from light, Room temperature
Shipped In	Wet ice. This product requires cold chain shipping. Ground and other economy services are not available.
Grade	Biological Stain, BioReagent, for microscopy

Contact & Global Offices

Whether you have a technical question, need help with a quotation, or want to inquire about an order, our regional teams are ready to assist. Please contact the office for your region; for general inquiries, the North American office is the corporate primary.

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Limitations & Disclaimer

- For Research Use Only (RUO). Not for use in human or animal diagnostics, therapeutics, or in vivo applications. Not for food, cosmetic, or household use.
- This product is not a CE-marked in vitro diagnostic device under IVDR (EU) 2017/746 and is not an FDA-cleared device under 21 CFR. Use is restricted to verified businesses, institutions, and qualified professionals for research and development purposes.
- Where any kit component is classified as hazardous under CLP (EC) 1272/2008 or OSHA HCS (29 CFR 1910.1200), the product Safety Data Sheet (SDS) takes precedence over this document for handling, storage, and disposal information.
- Performance depends on sample type, sample condition, handling, and operator technique. Users are responsible for validating the product for their specific application.



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