Picro Sirius Red Stain Kit

S774173

Storage 2-8℃. Protect from light.
Shipping Low-temperature transport.

Introduction

Collagen Fiber is the most widely distributed and abundant fiber in connective tissue, found extensively in various organs, with the highest concentrations in the skin, sclera, and tendons. Type I collagen fibers are primarily found in bone, skin, and tendon fibers; Type II collagen fibers are mainly cartilage collagen; Type III collagen fibers are primarily present in embryonic tissue, adult blood vessels, and the gastrointestinal tract; Type IV collagen fibers are mainly found in basement membranes. Sirius Red and its counterstain are both strong acid dyes that easily bind to basic groups in collagen molecules, forming a firm bond. Under polarized light microscopy, collagen fibers possess the property of positive uniaxial birefringence. When combined with Sirius Red complex staining solution, birefringence is enhanced, and resolution is improved, allowing for the differentiation of Type I and Type III collagen fibers.

This product consists of Sirius Red staining solution and a differentiation solution. It is mainly used for the study of collagen fiber abnormalities or fibrosis in various tissue pathologies. Under a regular light microscope, collagen fibers in tissues such as the heart and blood vessels are stained red. Under polarized light microscopy, it aids in the classification and grading of various fibrotic lesions. Immunohistochemical techniques can also be used to demonstrate Type I and Type III collagen fibers, but the required antibodies are expensive and the procedure is time-consuming. In contrast, using the Sirius Red stain is cost-effective and simple to perform.

Component List

S774173	Component	3×250 mL	Storage
S774173A	Sirius Red Staining Solution	250 mL	2-8℃. Store in the dark
S774173B	Differentiation Solution	2×250 mL	2-8℃. Store in the dark

Instructions

1. Collect tissue blocks, fix them in a tissue fixative, and perform routine paraffin embedding and sectioning.
2. Deparaffinize sections with xylene, hydrate through graded alcohols to water: Xylene (I) 5 min → Xylene (II) 5 min → 100% ethanol 2 min → 95% ethanol 1 min → 80% ethanol 1 min → 75% ethanol 1 min → Distilled water wash 2 min.
3. Completely immerse the sections in Sirius Red Staining Solution for 10-60 min (adjust

staining time based on coloring intensity).

4. Rinse quickly with Differentiation Solution twice, 5 seconds each time.
5. Soak in tap water for 5-15 min.
6. Perform routine dehydration, clearing, and mounting: 95% ethanol (I) 1 min → 95% ethanol (II) 1 min → 100% ethanol (I) 1 min → 100% ethanol (II) 1 min → Xylene (I) 1 min → Xylene (II) 1 min → Mount with neutral resin and observe under a microscope.
7. Staining Results

	Tissue	Color
Regular Light Microscope	Collagen fibers	Red
Regular Light Microscope	Muscle fibers, cytoplasm	Yellow
Polarizing Light Microscope	Type I collagen fibers	Orange-yellow
Polarizing Light Microscope	Type III collagen fibers	Green

Precautions

1. For optimal visualization under polarized light microscopy, a section thickness of 6-7μm is recommended for this method.
2. Nuclei can be counterstained with Mayer's hematoxylin staining solution; it does not affect the visualization or birefringence intensity of Type I and Type III collagen fibers. Other alum hematoxylins can also be used, but the staining time should be shortened to avoid overstaining.
3. This product provides stable staining that is not prone to fading.
4. For your safety and health, please wear a lab coat and disposable gloves during operation.
5. This reagent is intended for research use only and is not suitable for clinical diagnosis or other applications.