Diagnostic BioSystems

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Picro-Sirius Red Stain Kit (For Collagen)

Catalog Number: KT037

Document #: DS-3022-A
Effective Date: 02/015/15

Intended Use
For In Vitro Diagnostic Use

Summary and Explanation
The Picro-Sirius Red Stain Kit (For Collagen) is intended for use in the histological visualization of collagen I and III fibers in addition to muscle in tissue sections. The PSR stain may be viewed using standard light microscopy or polarized light resulting in birefringence of the collagen fibers to distinguish between type I and type III.

Light Microscopy
Collagen: Red
Muscle Fibers: Yellow
Cytoplasm: Yellow

Polarized Light Microscopy
Type I (Thick fibers) Yellow-Orange Birefringence
Type III (Thin fibers) Green Birefringence

Control Tissue
Tissues fixed in 10% formalin are suitable for use prior to paraffin embedding. Consult references (Kiernan, 1981: Sheehan & Hrapchak, 1980) for further details on specimen preparation.

1. Cut sections, usually 3 to 5 µm and pick the sections up on glass slides.
2. Bake the slides for at least 30 minutes at approximately 70°C.
3. Allow to cool.

Recommended Positive Control

1. Lung
2. Uterus
3. Muscle
4. Kidney

Reagents Provided

Kit Contents	Volume	Storage
Picro-Sirius Red Solution	250 mL	15-30°C
Acetic Acid Solution	250 mL X 2	15-30°C

Storage and Handling
Do not use product after the expiration date printed on vial. If reagents are stored under conditions other than those specified here, they must be verified by the user. Diluted reagents should be used promptly.

Staining Procedure

1. Deparaffinize sections if necessary and hydrate to distilled water.
2. Apply adequate Picro-Sirius Red Solution to completely cover tissue section and incubate for 60 minutes.
3. Rinse slide quickly in two changes of Acetic Acid Solution (0.5%).
4. Rinse slide using absolute alcohol.
5. Dehydrate in 2 changes of absolute alcohol, clear, and mount in synthetic resin.

Limitations of the Procedure

1. Histological staining is a multiple step diagnostic process that requires specialized training in the selection of the appropriate reagents, tissue selections, fixation, processing, preparation of the slide, and interpretation of the staining results.
2. Tissue staining is dependent on the handling and processing of the tissue prior to staining.
3. Improper fixation, freezing, thawing, washing, drying, heating, sectioning, or contamination with other tissues or fluids may produce artifacts or false negative results.
4. The clinical interpretation of any positive staining, or its absence, must be evaluated within the context of clinical history, morphology and other histopathological criteria. It is the responsibility of a qualified pathologist to be familiar with the special stain and methods used to produce the slide.
5. Staining must be performed in a certified licensed laboratory under the supervision of a pathologist who is responsible for reviewing the stained slides and assuring the adequacy of positive and negative controls.

Precautions

1. Consult local and/or state authorities with regard to recommended method of disposal.
2. Materials of human or animal origin should be handled as biohazardous materials and disposed of with proper precautions.
3. Avoid microbial contamination of reagents. Contamination could produce erroneous results.
4. This reagent may cause irritation. Avoid contact with eyes and mucous membranes.
5. If reagent contacts these areas, rinse with copious amounts of water.
6. Do not ingest or inhale any reagents.

Troubleshooting
If unexpected staining is observed which cannot be explained by variations in laboratory procedures and a problem is suspected, contact Diagnostic BioSystems Technical Support at (925) 484-3350, extension 2 or techsupport@dbiosys.com.

References

I. Puchtler H., Waldrop F.S., Valentine L.S. Polarization microscopic studies of connective tissue stained with picro-sirius red FBA. Beitr Path. 1973; 150, pages 174-187.

II. Junqueira L.C.U., Bignolas G., Brentani R.R. Picro-sirius staining plus polarization microscopy, a specific method for collagen detection in tissue sections. Histochemistry J. 1979, 11, pages 447-455.

III. Whittaker P. Polarized light microscopy in biomedical research. Microscopy and Analysis 1995; 44, pages 15-17.

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