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TECHNICAL DATA SHEET 797

Picrosirius Red Stain Kit

INTRODUCTION

Picrosirius red method is used to stain collagen I and III. The stain will quantify the amount of collagen in a given area of myocardial tissue, i.e. the collagen area fraction. Picrosirius Red Stain binds specifically to collagen fibrils of varying diameter that is used to distinguish collagen type I from collagen type III. Collagenous structures of the mandible stained brilliant red. Dentinal tubules, Sharpey's fibers and other structures not easily seen in sections stained with hematoxylin and eosin alone were seen clearly after this procedure. Under polarized light collagen fibers could be specifically identified and their orientation determined. Picrosirius Red Stain hematoxylin is recommended for examination of normal or pathologic dental specimens.

CONTENTS OF KIT:

- Solution A - Phosphomolybdic Acid
- Solution B - Picrosirius Red F3BA Stain
- Solution C - .1 N Hydrochloride Acid

FIXATION:

The method is most frequently used on paraffin sections of objects fixed adequately (at least 24 hours but ideally 1 or 2 weeks) in a neutral buffered formaldehyde solution.

PROCEDURE (PARAFFIN EMBEDDED TISSUE):

1. Deparaffinize and hydrate to DI water.
2. Stain in Weigert's Hematoxylin for 8 minutes (optional) if Weigert's hematoxylin is not used, go directly to step four.
3. Rinse well in DI water.
4. Place in Solution A for 2 minutes.
5. Rinse in DI water.
6. Place in Solution B for 60 minutes.
7. Place in Solution C for 2 minutes.
8. 70% Ethanol for 45 seconds.
9. Dehydrate, clear and mount.

References:

1. Puchtler H, Waldrop FS, Valentine LS. Polarization microscopic studies of connective tissue stained with picrosirius red FBA. *Beitr Path* 1973; 150, 174-187
2. Junqueira LCU, Bignolas G, Brentani RR. Picrosirius staining plus polarization microscopy, a specific method for collagen detection in tissue sections. *Histochem J* 1979; 11, 447-455
3. Whittaker P. Polarized light microscopy in biomedical research. *Microscopy and Analysis* 1995; 44, 15-17
4. Whittaker P, Kloner RA, Boughner DR, Pickering JG. Quantitative assessment of myocardial collagen with picrosirius red staining and circularly polarized light. *Basic Research in Cardiology* 1994; 89, 397-410
5. Anique Ducharme, Stefan Frantz, Masanori Aikawa, Elena Rabkin, Merry Lindsey, Luis E. Rohde, Frederick J. Schoen, Ralph A. Kelly, Zena Werb, Peter Libby and Richard T. Lee. Targeted deletion of matrix metalloproteinase-9 attenuates left ventricular enlargement and collagen accumulation after experimental myocardial infarction. *J Clin Invest.* 2000;106(1):55-62. doi:10.1172/JCI8768¹.

PROCEDURE (FROZEN TISSUE¹):

1. Fix fresh frozen tissue in 10% formalin for 2 to 5 minutes
2. Rinse in DI water
3. Stain in Picrosirius Red (Solution B) for 90 minutes
4. Rinse in HCl (Solution C) for 1 minute (2 times)
5. Rinse in DI water
6. Dehydrate in 70% EtOH for 30 seconds
7. Visualize under polarized light

RESULTS:

Stains fibrillar type I and type III collagen.
Collagen = Red
Type I = Yellow
Type III = Green

ORDERING INFORMATION:

Cat. #	Description Size
24901-250	Picrosirius Red Stain Kit 250ml
24901-500	Picrosirius Red Stain Kit 500ml

TO ORDER

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