



# Instructions For Use

## SRC-IFU

205 South 600 West Logan, Utah 84323, U.S.A. – Tel. (800) 729-8350 – Tel. (435) 755-9848 – Fax (435) 755-0015 – www.scytek.com Rev. 3, 7/26/2022

## Picro-Sirius Red Stain Kit (For Cardiac Muscle)

### Description and Principle

The Picro-Sirius Red Stain Kit (For Cardiac Muscle) is intended for use in the histological visualization of thin septa and collagen fibers. This modification of the Picro-Sirius Red stain eliminates the yellow cytoplasmic staining that can obscure thin collagenous septa. Using this procedure easily allows viewing of collagenous septa as thin as 0.2-0.5 microns. The PSR stain may be viewed using standard light microscopy or polarized light resulting in birefringence of the collagen fibers.

Collagen fibers are selectively stained by Sirius Red in a strongly acidic solution saturated with picric acid. Pretreatment by dilute phosphomolybdic acid decreases picric acid background staining which can obscure thin collagenous fibers and septa. Sirius Red binds to collagen in a highly ordered parallel manner enhancing the natural birefringent properties of collagen.

### Expected Results

#### Light Microscopy

Collagen:	Red
Septa:	Red
Cytoplasm:	Colorless to Slightly Yellow

#### Polarized Light Microscopy

Collagen:	Yellow-Orange and Green Birefringence
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### Kit Contents

1. Phosphomolybdic Acid Solution (0.2%)
2. Picro-Sirius Red Solution
3. Acetic Acid Solution (0.5%)

### Storage

- 18-25°C
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- 18-25°C

### Suggested Controls (not provided)

Cardiac Muscle, Uterus, Lung, Kidney.

### Uses/Limitations

Not to be taken internally.  
For In-Vitro Diagnostic use only.  
Histological applications.  
Do not use if reagent become cloudy.  
Do not use past expiration date.  
Use caution when handling reagent.  
Non-Sterile.

### Storage

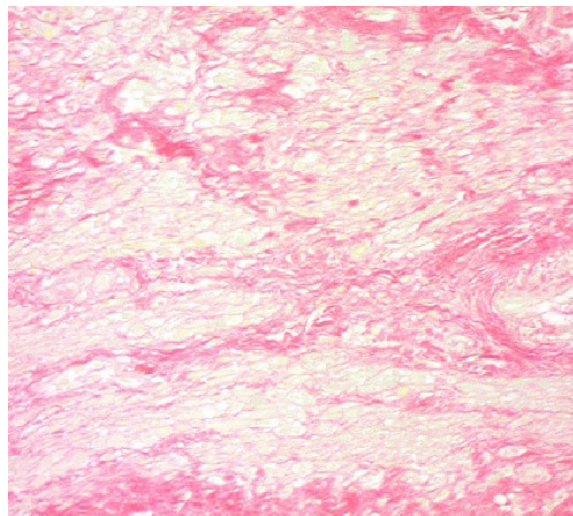
Store kit and all components at room temperature (18-25°C).

### Safety and Precautions

Please see current Safety Data Sheets (SDS) for this product and components GHS classification, pictograms, and full hazard/precautionary statements.

### Procedure:

1. Deparaffinize sections if necessary and hydrate to distilled water.
2. Apply adequate Phosphomolybdic Acid Solution (0.2%) to completely cover tissue section and incubate for 1-5 minutes.
3. Dip slide one time in distilled water.



Cardiac muscle and collagen fibers in Human Heart stained with Picro-Sirius Red Stain Kit (For Cardiac Muscle) (SRC-1)

4. Apply adequate Picro-Sirius Red Solution to completely cover tissue section and incubate for 60-90 minutes.

5. Rinse slide quickly in two changes of Acetic Acid Solution (0.5%).

6. Rinse slide using absolute alcohol.

7. Dehydrate in 2 changes of absolute alcohol, clear, and mount in synthetic resin.

### References

1. Takakuma, A., Nishii, M., Valaperti, A. et al. Prostaglandin-E2 receptor-4 stimulant rescues cardiac malfunction during myocarditis and protects the heart from adverse ventricular remodeling after myocarditis. *Sci Rep* 11, 20961 (2021). <https://doi.org/10.1038/s41598-021-99930-5>.
2. Song JW, Nam HS, Ahn JW, et al. Macrophage targeted theranostic strategy for accurate detection and rapid stabilization of the inflamed high-risk plaque. *Theranostics*. 2021;11(18):8874-8893. Published 2021 Aug 18. doi:10.7150/thno.59759
3. Dinger, K., Kasper, P., Hucklenbruch-Rother, E. et al. Early-onset obesity dysregulates pulmonary adipocytokine/insulin signaling and induces asthma-like disease in mice. *Sci Rep* 6, 24168 (2016). <https://doi.org/10.1038/srep24168>
4. 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.
5. Junqueira L.C.U., Bignolas G., Brentani R.R. Picrosirius staining plus polarization microscopy, a specific method for collagen detection in tissue sections. *Histochemistry J.* 1979, 11, pages 447-455.
6. Dolber, P.C., Spach, M.S. Picrosirius red staining of cardiac muscle following phosphomolybdic acid treatment. *Stain Technology*, January 1987, Volume 62(1): pages 23-26.
7. Whittaker, P., Kloner, R.A., Boughner, D.R., Pickering, J.G. Quantitative assessment of myocardial collagen with picrosirius red and circularly polarized light. *Basic Research in Cardiology*. 1994, Volume 89, Number 5, pages 397-410. DOI: 10.1007/BF00788278
8. Whittaker P. Polarized light microscopy in biomedical research. *Microscopy and Analysis* 1995; 44, pages 15-17.



ScyTek Laboratories, Inc.  
205 South 600 West  
Logan, UT 84321  
435-755-9848  
U.S.A.



EC REP

Emergo Europe  
Prinsessegracht 20  
2514 AP The Hague, The Netherlands