



Instructions For Use

HSV-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. 1, 11/18/2024

Hematoxylin Solution (5%)

Description and Principle

Hematoxylin Solution (5%) is a component of the Elastic Stain Kit (Modified Verhoeff's). Hematoxylin is used in a working solution with ferric chloride and iodine to demonstrate elastin in tissue sections.

Expected Results

Elastic fibers:	Black to Blue/Black
Nuclei:	Blue to Black
Collagen:	Red
Muscle & Other:	Yellow

Kit Contents (Cat# ETS-1)

Additional Kit Reagents Sold Separately

	Storage
1. Hematoxylin Solution (5%)	18-25°C
2. Ferric Chloride (10%, Aqueous)	18-25°C
3. Iodine Solution	18-25°C
4. Ferric Chloride (2%) Differentiating Solution	18-25°C
5. Sodium Thiosulfate Solution (5%)	18-25°C
6. Van Gieson's Solution	18-25°C

Suggested Controls (not provided)

Lung or any vascular tissue.

Uses/Limitations

For In-Vitro Diagnostic use only.

Do not use past expiration date.

Use caution when handling reagents.

Non-Sterile

Intended for FFPE sections cut at 5-10µm.

This procedure has not been optimized for frozen sections.

Frozen sections may require protocol modification.

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.

Preparation of Reagents Prior to Beginning:

- Prepare **Working Elastic Stain Solution** by mixing:
 - 2 parts** Hematoxylin Solution (5%)
 - 1 part** Ferric Chloride Solution (10%)
 - 1 part** Lugol's Iodine Solution.

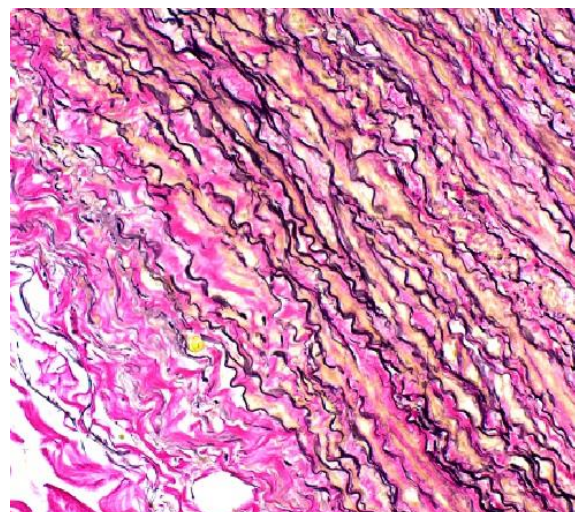
(Mixed solution may be used for 24 hours)

Example: 2mls Hematoxylin Solution, 1ml Ferric Chloride, 1ml Lugol's Iodine.

Example (dropper): Use enclosed graduated mixing vial – 14 drops (560µl) + 7 drops (280µl) + 7 drops (280µl) Total: 1120µl or 1.12ml

(1 drop = ~40µl)

We suggest making at least 1ml working solution per slide if staining on horizontal slides because solution is alcoholic and more susceptible to evaporation.



Elastic fibers on Aorta demonstrated at using Elastic Stain Kit (Modified Verhoeff's) Magnification 200X

2. Note: Lugol's Iodine Solution will cause staining of all kit vials and labels over time. This does not adversely affect the performance of this product and is merely cosmetic in nature.

3. Note: Removal of mercury deposits is not required for tissues that have been fixed in mercury containing fixatives since it will be removed by the staining solution.

Procedure

- Deparaffinize sections if necessary and hydrate to distilled water.
- Stain tissue section with working Elastic Stain Solution for 15 minutes.
- Rinse in running tap water until no excess stain remains on slide.
- Dip slides in Ferric Chloride (2%) Differentiating Solution 10-20 times and rinse in tap water.
- Check slides microscopically for proper differentiation. Repeat step 4 if required.
- Rinse in running tap water.
- Place slides in Sodium Thiosulfate Solution (5%) for 1 minute.
- Rinse in tap water for 2 minutes followed by 2 changes in distilled water.
- Stain slide using Van Gieson's Solution for 2 minutes.
- Rinse in two changes of 95% alcohol.
- Dehydrate in absolute alcohol.
- Clear, and mount in synthetic resin.

References

1. Oh, S.; Rho, N.-K.; Byun, K.-A.; Yang, J.Y.; Sun, H.J.; Jang, M.; Kang, D.; Son, K.H.; Byun, K. Combined Treatment of Monopolar and Bipolar Radiofrequency Increases Skin Elasticity by Decreasing the Accumulation of Advanced Glycated End Products in Aged Animal Skin. *Int. J. Mol. Sci.* 2022, 23, 2993. <https://doi.org/10.3390/ijms23062993>
2. Kim, H.M.; Byun, K.-A.; Oh, S.; Yang, J.Y.; Park, H.J.; Chung, M.S.; Son, K.H.; Byun, K. A Mixture of Topical Forms of Polydeoxyribonucleotide, Vitamin C, and Niacinamide Attenuated Skin Pigmentation and Increased Skin Elasticity by Modulating Nuclear Factor Erythroid 2-like 2. *Molecules* 2022, 27, 1276. <https://doi.org/10.3390/molecules27041276>
3. Shimazu Y, Zhang B, Yue Z, Wallace GG, Fukuda J. Engineering of perfusable double-layered vascular structures using contraction of spheroid-embedded hydrogel and electrochemical cell detachment. *Journal of bioscience and bioengineering.* 2019 Jan 1;127(1):114-20.
4. Hanna M, Muller-Delp JM, Vinogradova OL, Delp MD, Behnke BJ, Stabley JN, McCullough DJ, Maraj JJ, Sofronova SI, Tarasova OS, Gaynullina D. Spaceflight on the Bion-M1 biosatellite alters cerebral. *J Appl Physiol.* 2015;118:830-8.
5. L. Venkataraman, B. Sivaraman, P. Vaidya, and A. Ramamurthi, "Nanoparticulate delivery of agents for induced elastogenesis in three-dimensional collagenous matrices," *Journal of Tissue Engineering and Regenerative Medicine*, Apr. 2014.
6. H. M. Kim, Y. Y. Lim, M. Y. Kim, I. P. Son, D. H. Kim, S. R. Park, S. K. Seo, M. S. Lee, S.-K. Mun, C. W. Kim, and B. J. Kim, "Inhibitory effect of tianeptine on catagen induction in alopecia areata-like lesions induced by ultrasonic wave stress in mice," *Clinical and Experimental Dermatology*, vol. 38, no. 7, pp. 758-767, Oct. 2013.
7. H.-J. Harn, M.-H. Huang, C.-T. Huang, P.-C. Lin, S.-Y. Yen, Y.-W. Chou, T.-J. Ho, H.-Y. Chu, T.-W. Chiou, and S.-Z. Lin, "Rejuvenation of Aged Pig Facial Skin by Transplanting Allogeneic Granulocyte Colony-Stimulating Factor-Induced Peripheral Blood Stem Cells From a Young Pig," *Cell Transplantation*, vol. 22, no. 4, pp. 755-765, Apr. 2013.
9. Vass, D.G., et al. The value of an elastic tissue stain in detecting venous invasion in colorectal cancer. *Journal of Clinical Pathology*, July; 57(7); pages 769-772, 2004.
10. Prophet, E.B., et al. *A.F.I.P. Laboratory Methods in Histotechnology.* Page 134, 1994.
11. Carson, F.L., *Histotechnology: A Self Instructional Text*, ASCP Press, Chicago, IL. Pages 138-139, 1990.
12. O'Connor, W.N., Valle, S., *A Combination Verhoeff's Elastic and Masson's Trichrome Stain for Routine Histology.* *Stain Technology*, 1982 July; 57(4): pages 207-210.
13. Sheenan, D.C., Hrapchak, B.B. *Theory and Practice of Histotechnology*, 2nd Edition. CV Mosby, St. Louis, MO. Pages 196-197, 1980.
14. Mallory, F.B. *Pathological Technique*, 3rd Edition. Hafner Publishers, New York. Page 169, 1968.



ScyTek Laboratories, Inc.
205 South 600 West
Logan, UT 84321
U.S.A.



Emergo Europe
Westervoortsedijk 60
6827 AT Arnhem, The Netherlands