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Part 4194
Revised January 2020

Elastic, Aorta Control Slides – Technical Memo

CONTROL SLIDES:

Part 4194A	**Part 4194B**
10 Slide/Set	98 Slide/Set

PRODUCT SPECIFICATIONS:
Tissue: Positive staining aorta.
Fixation: Formalin 10%, Phosphate Buffered (Part 1090).
Section/Glass: Paraffin sections cut at 4 microns on Superfrost™ Plus slides.
Quality Control Stain: Verhoeff-Van Gieson Elastic quality control stained slide(s) included.
Reactivity: Guaranteed product specific reactivity for one year from date of receipt. Revalidate after one year to verify continued reactivity.
Storage: 15-30°C in a light deprived and humidity controlled environment.
Intended Use: To verify histological techniques and reagent reactivity.

Before using unstained control slides, review the enclosed stained slide(s) to ensure that this tissue source is acceptable for testing needs.

CONTROL SLIDE VALIDATION:

With Elastic, Verhoeff Stain Kit:	**Part 9116A/B**	**Individual Stain Solution**
Solution A: Hematoxylin 5%, Alcoholic	125/250 ml	Part 11623
Solution B: Ferric Chloride 10%, Aqueous	125/250 ml	Part 10856
Solution C: Iodine, Weigert & Lugol, Aqueous	75/150 ml	Part 12092
Solution D: Sodium Thiosulfate 5%, Aqueous	250/500 ml	Part 1389
Solution E: Van Gieson Stain	250/500 ml	Part 1404

APPLICATION:

Newcomer Supply Elastic, Aorta Control Slides are for the positive histochemical staining of elastic fibers in artery.

PRESTAINING PREPARATION:

1. Heat dry sections in oven according to your laboratory protocol.
2. Prepare fresh Verhoeff Working Solution by combining in the exact order listed, mixing well after each addition. Save for Step #5.
   a. *Solution A: Hematoxylin 5%, Alcoholic* *20 ml*
   b. *Solution B: Ferric Chloride 10%, Aqueous* *8 ml*
   c. *Solution C: Iodine, Weigert & Lugol, Aqueous* *8 ml*
3. Prepare fresh Ferric Chloride 2%, Aqueous Solution for Step #7.
   a. *Solution B: Ferric Chloride 10%, Aqueous* *10 ml*
   b. *Distilled water* *40 ml*

STAINING PROCEDURE:

4. Deparaffinize sections thoroughly in three changes of xylene, 3 minutes each. Hydrate through two changes each of 100% and 95% ethyl alcohols, 10 dips each. Wash well with distilled water.
   a. *See Procedure Notes #1 and #2.*
5. Stain in fresh Verhoeff Working Solution (Step #2) for 20 minutes.
   a. *Discard solution after successful differentiation in Step #7.*
6. Rinse in several changes of tap water.
7. Differentiate each slide individually in fresh Ferric Chloride 2%, Aqueous Solution (Step #3) with agitation; approximately 20 dips.
8. Check differentiation; rinse well in tap water and check microscopically for black elastic staining with gray background.
   a. *Repeat in Ferric Chloride 2%, Aqueous Solution if necessary until desired elastic differentiation is achieved.*
   b. *See Procedure Notes #3 and #4.*
9. Wash well in tap water.
10. Place in Solution D: Sodium Thiosulfate 5%, Aqueous for 1 minute.
11. Wash well in running tap water for 5 minutes.
12. Counterstain in Solution E: Van Gieson Stain for 3 to 5 minutes.
13. Dehydrate in two changes each of 95% and 100% ethyl alcohol. Clear in three changes of xylene, 10 dips each; coverslip with compatible mounting medium.

RESULTS:

Elastic fibers/tissue/nuclei	Blue-black to black
Collagen	Red
Other tissue elements	Yellow

PROCEDURE NOTES:

1. Drain slides after each step to prevent solution carry over.
2. Do not allow sections to dry out at any point during procedure.
3. It is easy to over-differentiate in Ferric Chloride 2%, Aqueous Solution.
   a. *If background is completely colorless, the section has been over-differentiated.*
   b. *Over-differentiated sections may be re-stained in Step #5 provided sections have not been treated with alcohol.*
4. Slides must be individually differentiated. Differentiation can vary dependent upon the amount of elastic tissue present in sections.
5. If using a xylene substitute, closely follow the manufacturer's recommendations for deparaffinization and clearing steps.

REFERENCES:

1. Carson, Freida L., and Christa Hladik Cappellano. *Histotechnology: A Self-instructional Text*. 4th ed. Chicago: ASCP Press, 2015. 167-169.
2. Mallory, Frank Burr, and James Homer Wright. *Pathological Technique*. 7th ed. Philadelphia, PA: W.B. Saunders Company, 1918. 118-119.
3. Modifications developed by Newcomer Supply Laboratory.