NEWCOMER SUPPLY®
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Part 4130
Revised March 2018

Copper, Animal Control Slides – Technical Memo

CONTROL SLIDES:

Part 4130A	**Part 4130B**
10 Slide/Set	98 Slide/Set

Copper, Animal Control Slides contain a section of positive staining liver.

PRODUCT DESCRIPTION:
The enclosed positive control slides are intended to be used to verify histological techniques and reagent reactivity. They are to be used for the qualitative purpose of determining positive or negative results, and are not intended to be used for any quantitative purpose. The first serial section within this control box is stained and provided for your reference. ***Before using the unstained slides, review the enclosed stained slide with your pathologist to ensure that this tissue source is acceptable. Newcomer Supply will not accept a return with missing slides in the series. Newcomer Supply guarantees reactivity of these control slides for one year from the date of receipt. Revalidate after one year to verify continued reactivity. Store at 15-30°C in a light deprived and humidity controlled environment.***

The positive control sections were produced from animal tissues under carefully controlled conditions. Reasonable measures are used to deliver quality control slides that are as consistent as possible. However, characteristics of quality control slides may be dissimilar due to variations in the reagents, stains, techniques, laboratory conditions, and tissue sources used. Newcomer Supply Laboratory uses a manual method of performing quality control procedures, specifically avoiding automation, in order to provide reactive control slides for even less aggressive methods of staining that our customers may be using.

CONTROL SLIDE VALIDATION:

With Copper, Rhodanine Stain Kit:	**Part 9113A**	**Individual Stain Solution**
Solution A: Rhodanine Stock Stain 0.2%, Alcoholic	50 ml	Part 10531
Solution B: Hematoxylin Stain, Mayer Modified	250 ml	Part 1202
Solution C: Sodium Borate 0.5%, Aqueous	500 ml	Part 13824

APPLICATION:

Newcomer Supply Copper, Animal Control Slides are for the positive histochemical detection of copper in tissue sections.

METHOD:

Fixation: Formalin 10%, Phosphate Buffered (Part 1090)
Technique: Paraffin sections cut at 4 microns on Superfrost® Plus
Solutions: All solutions are manufactured by Newcomer Supply, Inc.

PRESTAINING PREPARATION:

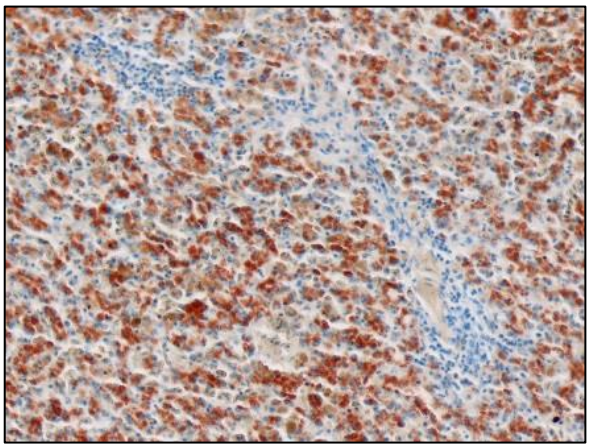
1. Prepare Working Rhodanine Solution; combine and mix well.
   a. *Shake Solution A: Rhodanine Stock Stain 0.2%, Alcoholic well before each use.*
   b. *Solution A: Rhodanine Stock Stain 0.2%, Alcoholic 3 ml*
   c. *Distilled Water 47 ml*

NEWCOMER SUPPLY VALIDATION PROCEDURE:

2. 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 (page 2).*
3. Stain in Working Rhodanine Solution at 60°C for 1-2 hours or at 37°C for 18 hours.
   Microwave Modification: *See Procedure Note #3 (page 2).*
   a. *Place slides in a plastic Coplin jar containing Working Rhodanine Solution and microwave for 6 minutes at 70°C.*
4. At the end of incubation (for both oven and microwave), to avoid unwanted slide precipitate, pour off warm Working Rhodanine Solution into a second Coplin jar; reserve and set aside.
5. Rinse slides well in several changes of distilled water.
6. Check positive control slide microscopically to determine adequate copper/reddish brown development.
   a. *Return slides to reserved Working Rhodanine Solution if additional incubation is required.*
7. Prepare dilute Mayer Hematoxylin Stain Solution directly before use; combine and mix well:
   a. *Solution B: Hematoxylin Stain, Mayer Modified 20 ml*
   b. *Distilled Water 20 ml*
8. Stain in dilute Mayer Hematoxylin Stain Solution for 10 minutes.
9. Rinse in distilled water.
10. Rinse in Solution C: Sodium Borate 0.5%, Aqueous; 2-3 quick dips.
11. Rinse well in distilled water.
12. 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:

Copper	Copper/reddish brown
Nuclei	Light blue



PROCEDURE NOTES:

1. Drain staining rack/slides after each step to prevent solution carry over.
2. Do not allow sections to dry out at any point during staining procedure.
3. The suggested microwave procedure has been tested at Newcomer Supply using an "EB Sciences", 850 watt microwave oven with temperature probe and agitation tubes. This procedure is reproducible in our laboratory. It is nonetheless a guideline and techniques should be developed for your laboratory which meet the requirements of your situation. Microwave devices should be placed in a fume hood or vented into a fume hood, according to manufacturer's instructions, to prevent exposure to chemical vapors.
4. If using a xylene substitute, closely follow the manufacturer's recommendations for deparaffinization and clearing steps.

REFERENCES:

1. Bancroft, John D., and Marilyn Gamble. *Theory and Practice of Histological Techniques*. 6th ed. Oxford: Churchill Livingstone Elsevier, 2008. 251.
2. Carson, Freida L., and Christa Hladik Cappellano. *Histotechnology: A Self-instructional Text*. 4th ed. Chicago: ASCP Press, 2015. 258-260.
3. Sheehan, Dezna C., and Barbara B. Hrapchak. *Theory and Practice of Histotechnology*. 2nd ed. St. Louis: Mosby, 1980. 230.
4. Modifications developed by Newcomer Supply Laboratory.