2505 Parview Road • Middleton, WI 53562-2579 • 800-383-7799 • www.newcomersupply.com • newly@newcomersupply.com

Part 4040
Revised December 2015

Argyrophil Control Slides – Technical Memo

CONTROL SLIDES: **Part 4040A**
10 Slide/Set

Argyrophil Control Slides contain a section of positive staining small intestine.

PRODUCT DESCRIPTION:
The enclosed positive control slides are intended to be used to verify histological techniques and reagent reactivity. These slides 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 the 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.***

These positive control slides were produced from human surgical or autopsy 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 Grimelius Argyrophil Stain:	**Individual Stain Solution**
Silver Nitrate 1%, Aqueous	Part 13804
Acetic Acid, Glacial, ACS	Part 10010
Sodium Acetate Trihydrate	
Sodium Sulfite, Anhydrous	
Hydroquinone, Powder	Part 12089
Nuclear Fast Red Stain, Kernechtrot	Part 1255

For storage requirements and expiration date refer to individual product labels.

APPLICATION:

Newcomer Supply Argyrophil Control Slides are for the positive histochemical staining of argyrophil granules expressed in neurosecretory tumors.

METHOD:

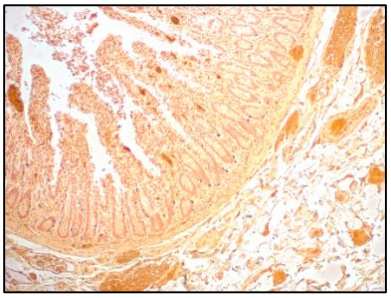
Fixation: Formalin 10%, Phosphate Buffered (Part 1090)
Technique: Paraffin sections cut at 5 microns on Superfrost® Plus
Solutions: All solutions are manufactured by Newcomer Supply, Inc.

NEWCOMER SUPPLY VALIDATION PROCEDURE:

1. All glassware/plasticware must be acid cleaned prior to use.
   a. *See Procedure Notes #1 and #2 (page 2).*
2. Prepare the following solutions; combine and mix well.
   a. ***Acetic Acid Solution, 0.2M***
   Distilled water 47 ml
   Acetic Acid, Glacial, ACS 3 ml
   Store solution at 2°C-8°C for up to 1 year.
   b. ***Sodium Acetate Solution, 0.2M***
   Distilled water 100 ml
   Sodium Acetate, Trihydrate 2.75 gm
   Store solution at 2°C-8°C for up to 1 year.
   c. ***Acetic Acid-Sodium Acetate Buffer, 0.2M***
   Acetic Acid Solution, 0.2M 5 drops
   Sodium Acetate, 0.2M 18 ml
   Make fresh each time; adjust to pH 5.6
3. Prepare fresh Working Silver Solution:
   a. *Distilled water 48.5 ml*
   b. *Acetic Acid-Sodium Acetate Buffer 5 ml*
   c. *Silver Nitrate 1%, Aqueous 1.5 ml*
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 #3 and #4 (page 2).*
5. Immerse slides in room temperature Working Silver Solution (Step #3) in a 60°C water bath for 1 hour; stir occasionally.
6. Prepare fresh Reducing Solution; combine, mix well and preheat to 40°C-50°C in a water bath.
   a. *Distilled water 50 ml*
   b. *Sodium Sulfite, Anhydrous 1.25 gm*
   c. *Hydroquinone, Powder 0.5 gm*
7. Remove slides from Working Silver Solution; drain briefly and place in fresh prepared/preheated Reducing Solution for 1 minute.
   a. ***Save Working Silver Solution for Step #9.***
   b. ***Save Reducing Solution for Step #10.***
8. Rinse slides well in distilled water.
9. Return slides to Working Silver Solution for 10 minutes.
10. Drain slides briefly; return to Reducing Solution for 1 minute.
11. Rinse slides well in distilled water.
12. Counterstain in Nuclear Fast Red Stain, Kernechtrot for 5 minutes.
   a. *Shake solution well before use; do not filter.*
13. Rinse well in distilled water.
   a. *See Procedure Note #5 (page 2).*
14. Dehydrate quickly 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:

Argyrophil cell granules	Brown to black
Nuclei	Red
Background	Pale yellow to brown



PROCEDURE NOTES:

1. Acid clean all glassware/plasticware (12086) and rinse thoroughly in several changes of distilled water. Cleaning glassware with bleach is not equivalent to acid washing.
2. Plastic (5500), plastic-tipped or paraffin coated metal forceps must be used with any silver solution to prevent precipitation of silver salts. No metals of any kind should be in contact with any silver solution. Only glass thermometers should be used.
3. Drain staining rack/slides after each step to prevent solution carry over.
4. Do not allow sections to dry out at any point during staining procedure.
5. Wash well after Nuclear Fast Red Stain, Kernechtrot to avoid cloudiness in dehydration steps.
6. Sodium Acetate Trihydrate (Sigma 71188) and Sodium Sulfate, Anhydrous (Sigma 71988) are the chemicals used in this procedure.
7. If using a xylene substitute, closely follow the manufacturer's recommendations for deparaffinization and clearing steps.

REFERENCES:

1. Carson, Freida L., and Christa Hladik. *Histotechnology: A Self-Instructional Text*. 3rd ed. Chicago, Ill.: American Society of Clinical Pathologists, 2009. 263-264.
2. Luna, Lee G. *Histopathologic Methods and Color Atlas of Special Stains and Tissue Artifacts*. Gaitheresburg, MD: American Histolabs, 1992. 293-294.
3. Modifications developed by Newcomer Supply Laboratory.