

Calcium Control Slides – Technical Memo

<u>CONTROL SLIDES:</u>	Part 4100A	Part 4100B
	10 Slide/Set	98 Slide/Set

Calcium Control Slides contain a section of positive staining placenta.

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 Von Kossa Calcium Stain:	Individual Stain Solution
Silver Nitrate 5%, Aqueous	Part 13805
Sodium Thiosulfate 5%, Aqueous	Part 1389
Nuclear Fast Red Stain, Kernechtrot	Part 1255

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

APPLICATION:

Newcomer Supply Calcium Control Slides are for the positive histochemical staining of calcium or calcium salts in tissue sections.

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:

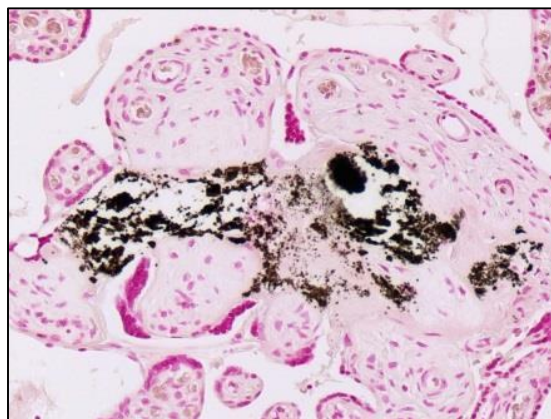
1. All glassware/plasticware must be acid cleaned prior to use.
 - a. See Procedure Notes #1 and #2.
2. Deparaffinize sections thoroughly in three changes of xylene, 3 minutes each. Hydrate through two changes each of 100% and 95% ethyl alcohols, 10 dips each. Wash well with distilled water.
 - a. See Procedure Notes #3 and #4.
3. Place slides in Silver Nitrate 5%, Aqueous according to the following timings and conditions.
 - a. Direct sunlight or ultraviolet light for 10-30 minutes.
 - b. In front of a 60-100 watt light bulb for 1 hour or longer.
 - c. See Procedure Note #5.
4. Check slides periodically and remove from light source when control slide shows black-brown deposits macroscopically.
5. Rinse well in several changes of distilled water.
6. Place slides in Sodium Thiosulfate 5%, Aqueous for 2 minutes.
7. Rinse well in several changes of distilled water.
8. Counterstain in Nuclear Fast Red Stain, Kernechtrot for 5 minutes.
 - a. Shake solution well before use; do not filter.
9. Rinse well in distilled water.
 - a. See Procedure Note #6.
10. Dehydrate in two changes each of 95% and 100% ethyl alcohol; 10 dips each. Clear in three changes of xylene, 10 dips each; coverslip with compatible mounting medium.

RESULTS:

Calcium salts	Black to brown/black
Nuclei	Red
Cytoplasm	Light pink

PROCEDURE NOTES:

1. Acid clean all glassware/plasticware (Part 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.
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. Direct sunlight is the preferred reaction method. If procedure is carried out in minimal sunlight or subdued light, increased incubation time will be necessary.
6. Wash well after Nuclear Fast Red Stain, Kernechtrot to avoid cloudiness in dehydration steps.
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. 269-270.
2. Luna, Lee G. *Manual of Histologic Staining Methods of the Armed Forces Institute of Pathology*. 3rd ed. New York: Blakiston Division, McGraw-Hill, 1968. 176-177.
3. Sheehan, Dezna C., and Barbara B. Hrapchak. *Theory and Practice of Histotechnology*. 2nd ed. St. Louis: Mosby, 1980. 226-227.
4. Modifications developed by Newcomer Supply Laboratory.