

Fite, *Nocardia sp.*, Artificial Control Slides – Technical Memo

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| CONTROL SLIDES: | Part 4215A | Part 4215B |
| | 10 Slide/Set | 98 Slide/Set |

PRODUCT SPECIFICATIONS:

Tissue: Positive staining rat lung and negative staining human lung.

Fixation: Formalin 10%, Phosphate Buffered (Part 1090).

Section/Glass: Paraffin sections cut at 4 microns on Superfrost™ Plus slides.

Quality Control Stain: AFB, Fite 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 AFB, Fite Stain Kit: | Part 91013A | Individual Stain Solution |
|--|--------------------|----------------------------------|
| Solution A: Xylene/Peanut Oil, 2:1 | 500 ml | Part 1449 |
| Solution B: Carbol Fuchsin Stain, Ziehl-Neelsen | 250 ml | Part 1030 |
| Solution C: Acid Alcohol 1% | 250 ml | Part 10011 |
| Solution D: Light Green SF Yellowish 0.1%, Aqueous | 250 ml | Part 12203 |

APPLICATION:

Newcomer Supply Fite, *Nocardia sp.*, Artificial Control Slides are for the positive histochemical staining of *Nocardia sp.* and acid fast bacilli in tissue sections. *Nocardia sp.*, purchased from American Type Culture Collection, is used to produce the positive control tissue.

PRESTAINING PREPARATION:

- Heat dry sections in oven according to your laboratory protocol.
- Filter Solution B: Carbol Fuchsin Stain, Ziehl-Neelsen with high quality filter paper.
- Prepare Diluted Acid Alcohol Solution:
 - Solution C: Acid Alcohol 1% 20 ml
 - Distilled Water 20 ml

NEWCOMER SUPPLY VALIDATION PROCEDURE:

- Deparaffinize slides in Solution A: Xylene/Peanut Oil, 2:1, two changes for 12 minutes each.
 - See Procedure Note #1.
- Drain slides, wipe off excess oil, and blot to opacity taking care to remove residual oil.
 - See Procedure Note #2.
- Stain in freshly filtered Solution B: Carbol Fuchsin Stain, Ziehl-Neelsen for 15 minutes at room temperature.
- Rinse well in distilled water.
- Differentiate slides individually in Diluted Acid Alcohol Solution (Step #3) until background is pale pink; 10-20 dips.
- Quickly rinse in distilled water and check microscopically for correct differentiation.
- Rinse well in distilled water.
- Counterstain in Solution D: Light Green SF Yellowish 0.1%, Aqueous; 5-10 dips.
- Rinse in distilled water.
- Blot excess water from slide and air-dry or oven-dry completely.
- Dip dried slides in xylene and coverslip with a compatible mounting medium.

RESULTS:

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| <i>Nocardia sp.</i> | Red |
| Acid-fast bacilli | Red |
| Other tissue elements | Green |
| Negative lung | Negative for <i>Nocardia sp.</i> |

PROCEDURE NOTES:

- Acid-fastness of the organisms is enhanced when the waxy capsule is protected by the mixture of xylene/peanut oil and the avoidance of dehydrating solutions.
- It is important to blot well, residual oil may produce staining artifact.
- A small percentage of *Nocardia sp.* organisms may resist taking the red stain and remain green due to the growth phase of the individual organism.
- If using a xylene substitute, closely follow the manufacturer's recommendations for coverslipping step.

REFERENCES:

- Carson, Freida L., and Christa Hladik Cappellano. *Histotechnology: A Self-instructional Text*. 4th ed. Chicago: ASCP Press, 2015. 220-221.
- Fite, George, P.J. Cambre and M.H. Turner. "Procedure for Demonstrating Lepra Bacilli in Paraffin Sections". *Archives of Pathology* 43 (1947). 624-625.
- Sheehan, Dezna C., and Barbara B. Hrapchak. *Theory and Practice of Histotechnology*. 2nd ed. St. Louis: Mosby, 1980. 237.
- Modifications developed by Newcomer Supply Laboratory.