

Carson Modified Millonig Formalin – Technical Memo

SOLUTION:

Carson Modified Millonig Formalin

1 Gallon

Part 12445A

20 Liter Cube

Part 12445C

30 ml vial, 15 ml fill (100/cs)

Carson Modified Millonig Formalin Vial

Part 12445E

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

APPLICATION:

Newcomer Supply Carson Modified Millonig Formalin, is a formalin based ready-to-use fixative that is buffered with sodium monobasic phosphate and sodium hydroxide. Carson Modified Millonig Formalin promotes fixation with rapid tissue penetration, providing excellent cellular detail and ultrastructural preservation.

This multi-purpose fixative has applications for both light microscopy (LM) and electron microscopy (EM) studies (including immunogold labeling) and can readily be used in place of standard 10% formalin fixatives.

METHOD:**Fixation:**

- Small Biopsies: A minimum of 1-2 hours is recommended.
- Larger Specimens: A minimum of 4-6 hours is recommended.

Solutions: All solutions are manufactured by Newcomer Supply, Inc.

FIXATION PROCEDURE:

1. Place fresh tissue specimen in Carson Modified Millonig Formalin as soon as possible after surgical excision.
 - a. See Procedure Notes #1 and #2.
2. Hold tissue specimens in Carson Modified Millonig Formalin until ready to process.
 - a. See Procedure Note #3.
3. **Light Microscopy Processing:** place on tissue processor starting in a primary fixation step or primary alcohol step.
4. **Electron Microscopy Processing:** after initial Carson Modified Millonig Formalin fixation, a secondary osmium tetroxide fixation is most often recommended. Refer to laboratory protocol for electron microscopy processing.

PROCEDURE NOTES:

1. A specimen initially received in Formalin 10%, Phosphate Buffered, should be rinsed thoroughly in tap water prior to placing in Carson Modified Millonig Formalin.
2. Tissues requested for electron microscopy studies should be fixed within 15 minutes after surgical excision and minced into 1 mm cubes for expedient fixative infiltration.
3. Tissue can remain in Carson Modified Millonig Formalin over an extended period of time.

REFERENCES:

1. Bancroft, John D., and Marilyn Gamble. *Theory and Practice of Histological Techniques*. 6th ed. Oxford: Churchill Livingstone Elsevier, 2008. 68.
2. Carson, Freida L., and Christa Hladik. *Histotechnology: A Self-Instructional Text*. 3rd ed. Chicago, Ill.: American Society of Clinical Pathologists, 2009. 11-12, 335-336.
3. Carson, Freida L., and James Martin. "Formalin Fixation for Electron Microscopy." *The Journal of Histotechnology* 2.2 (1979): 58-60.
4. Sheehan, Dezna C., and Barbara B. Hrapchak. *Theory and Practice of Histotechnology*. 2nd ed. St. Louis: Mosby, 1980. 46.
5. Modifications developed by Newcomer Supply Laboratory.