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Part 12772
Revised November 2019

Oil Red O Stain, Propylene Glycol - Technical Memo

SOLUTION:	**250 ml**		**500 ml**	
Oil Red O Stain, Propylene Glycol	Part 12772A		Part 12772B	
Additionally Needed:				
Formalin 10%, Phosphate Buffered	Part 1090			
Propylene Glycol 100%, ACS	Part 13391			
Propylene Glycol 85%, Aqueous	Part 133912			
Hematoxylin Stain, Mayer Modified	Part 1202			
Lithium Carbonate, Saturated Aqueous	Part 12215	or	Scott Tap Water Substitute	Part 1380
Mount-Quick Aqueous	Part 6271A			

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

APPLICATION:

Newcomer Supply Oil Red O Stain, Propylene Glycol procedure is classified as a physical staining method and is used for identification of fat/lipid in frozen sections.

METHOD:

Fixation: Fresh tissue or formalin fixed unprocessed tissue
- *a. See Procedure Note #1.*

Technique: Frozen sections cut at 8-10 microns on adhesive slides
Solutions: All solutions are manufactured by Newcomer Supply, Inc.

All Newcomer Supply stain procedures are designed to be used with Coplin jars filled to 40 ml following the provided staining procedure.

STAINING PROCEDURE:

1. Fix frozen section slides in Formalin 10%, Phosphate Buffered (1090) for 1 minute.
   - *a. See Procedure Note #2.*
2. Rinse sections carefully in two changes of distilled water.
3. Blot excess water and place slides in Propylene Glycol 100%, ACS (13391) for 2-5 minutes.
4. Place directly into Oil Red O Stain, Propylene Glycol for 1 hour. Agitate occasionally or place Coplin jar on rotator/shaker with continuous gentle agitation.
   - *a. See Procedure Notes #3 and #4.*
5. Differentiate in Propylene Glycol 85%, Aqueous (133912) with agitation for a minimum of 3 minutes.
6. Rinse gently in two changes of distilled water.
7. Counterstain with Hematoxylin Stain, Mayer Modified (1202) for 2-3 minutes.
8. Wash gently in several changes of tap water.
9. Blue in Lithium Carbonate, Saturated Aqueous (12215) or Scott Tap Water Substitute (1380) for 10 dips.
   - *a. The use of a bluing agent is optional.*
10. Wash gently in several changes of tap water.
11. Blot excess water from slide; coverslip with Mount-Quick Aqueous (6271A) mounting medium.
    - *a. See Procedure Note #5.*

RESULTS:

Fat	Bright red
Nuclei	Blue to dark blue

PROCEDURE NOTES:

1. To freeze formalin fixed unprocessed tissue:
   - *a. Place specimen in tissue cassette, wash in running tap water for 5 minutes.*
   - *b. Remove tissue from cassette; blot well, removing all excess water from tissue.*
   - *c. Freeze tissue according to laboratory protocol.*
2. Frozen formalin fixed tissue does not require additional formalin fixation.
3. To decrease staining time; preheat Oil Red O Stain, Propylene Glycol in a 60ºC oven; stain for 7-10 minutes.
4. If a filmy precipitate develops in Oil Red O Stain, Propylene Glycol, filter with coarse filter paper.
5. Use minimal pressure when applying coverslip or fat/lipid staining may be disturbed. To remove trapped air bubbles or to recoverslip;
   - *a. Soak slide in warm water until coverslip is easily removed.*
   - *b. Blot excess water from slide.*
   - *c. Remount with new coverslip and Mount-Quick Aqueous mounting medium.*

REFERENCES:

1. Carson, Freida L., and Christa Hladik. *Histotechnology: A Self-Instructional Text*. 3rd ed. Chicago, Ill.: American Society of Clinical Pathologists, 2009. 184-186.
2. Prophet, Edna B., Bob Mills, Jacquelyn Arrington, and Leslie Sobin. *Laboratory Methods in Histotechnology*. Washington, D.C.: American Registry of Pathology. 1992.178.
3. Sheehan, Dezna C., and Barbara B. Hrapchak. *Theory and Practice of Histotechnology*. 2nd ed. St. Louis: Mosby, 1980. 205.
4. Modifications developed by Newcomer Supply Laboratory.

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