OIL RED O - PROPYLENE GLYCOL - FAT

PURPOSE: To demonstrate fat or lipids in fresh tissue sections. Fat occurring in an abnormal place, such as fatty emboli that may develop after either a bone fracture or an injury that crushes a fatty body area. Tumors arising from fat cells (liposarcomas) can be differentiated from other types of tumors.

PRINCIPLE: Staining with oil-soluble dyes is based on the greater solubility of the dye in the lipoid substances than in the usual hydroalcoholic dye solvents.

CONTROL: Use a positive control of a fat smeared slide, and a negative control slide of a paraffin processed tissue, such as lung.

FIXATIVE: 10% formalin.

TECHNIQUE: Cut frozen tissue sections 10µ.

EQUIPMENT: Cryostat, coplin jars. (Making stain, stir plate, filter paper, fritted glass filter, and vacuum) and a 60°C oven. Rinse all glassware in DI water.

REAGENTS:

Propylene Glycol:
Place in two coplin jars, label #1 and #2, can be reused.

CAUTION: Avoid contact and inhalation.

85% Propylene Glycol:

Propylene glycol	85.0 ml
Distilled water	15.0 ml

CAUTION: Avoid contact and inhalation.

Hematoxylin:
Commercial Gill-3

Glycerin Jelly

Oil Red O Solution:

Oil red O	0.7 gm
Propylene glycol	100.0 ml

Dissolve oil red O in propylene glycol, slowly, while stirring. Heat to 100°C, but not over 110°C, for a few minutes, stirring constantly. Filter through Whatman #2 filter paper. Cool, and filter again through a frittered glass filter of medium porosity with suction. Store in a 60°C oven. Solution stable for 1 year.

CAUTION: Avoid contact and inhalation.

SAFETY: Wear gloves, goggles and lab coat. Avoid contact and inhalation.

Propylene glycol; mild skin and eye irritant. Cumbustible.

PROCEDURE:

1. Pick-up frozen sections on clean glass slides if fresh, albuminized slides if fixed.
2. Fix slides in 10% formalin if fresh.
3. Wash well it tap, rinse in distilled, drain off excess water.
4. Propylene glycol, two changes, 5 minutes each.
5. Oil red O, 7 minutes, agitate.
6. 85% Propylene glycol, 3 minutes.
7. Rinse in distilled water.
8. Hematoxylin, 1 minute.
9. Wash in water.
10. Bluing solution, 20 dips, or running tap water.
11. Wash in tap water, rinse in distilled.
12. Mount with aqueous mounting media, Glycerin Jelly.

RESULTS:

Fat	red
Nuclei	blue

REFERENCES:

Preece A, A manual for Histologic Technicians, 3rd Ed, 1972, Little,Brown and Co, Boston

Crookham,J, Dapson,R, Hazardous Chemicals in the Histopathology Laboratory, 2nd ED, 1991, Anatech

Prepared:_____By: _____

Approved:_____By:_____

PROCEDURE CARD

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Glycerin Jelly

PROPYLENE GLYCOL #1

DATE:_____

TECH:_____

PROPYLENE GLYCOL #2

DATE:_____

TECH:_____

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DATE:_____

TECH:_____

EXPIRATION:_____