Subject: **ORTH’S SOLUTION**

**PURPOSE:** Used for the demonstration of chromaffin (chromate-loving) granules in the cytoplasm of adrenal medulla. This demonstration may be important in the diagnosis of a pheochromocytoma. Not a good general purpose fixative.

**PRINCIPLE:** The chromaffin granules are colored orange to brown by chromate, the reaction is most intense at a pH of 5 to 6.

**REAGENTS:**

**Orth’s Stock Solution:**
- Potassium dichromate 25.0 gm
- Sodium sulfate 10.0 gm
- Distilled water 1000.0 ml

Mix well, label and date.

**Orth’s Working:**
- Orth’s Stock Solution 50.0 ml
- Just before use, add: Formaldehyde, 37% 5.0 ml

Fix for 24 hours, after fixation specimen must be washed in water.

**CAUTION:** CARCINOGEN, CORROSIVE

**SAFETY/PPE:** Wear gloves, goggles and lab coat. Work in well ventilated area. Potassium dichromate: toxic by inhalation of dust and by ingestion; target organ effects on reproductive and fetal systems. Solid form is corrosive to eyes, skin and mucous membranes.

Formaldehyde: severe eye and skin irritant. Sensitizer by skin and respiratory contact. Toxic by ingestion and inhalation. Target organ effects on respiratory system. Corrosive. Carcinogen.

Label with FORMALDEHYDE WARNING label.

**REFERENCE:**
Sheehan,D, Hrapchak, B, Theory and Practice of Histotechnology, 2nd Ed, 1980, p. 47, Lipshaw

Prepared: By:

Approved: By:
Orth's Stock Solution:
Potassium dichromate 25.0 gm
Sodium sulfate 10.0 gm
Distilled water 1000.0 ml
Mix well, label and date.

Working:
Orth’s Stock Solution 50.0 ml
Just before use, add:
Formaldehyde, 37% 5.0 ml
Fix for 24 hours, after fixation specimen must be washed in water. Store fixed specimen in 70% alcohol.

CAUTION: CARCINOGEN, Corrosive

Date:__________________________

Tech:__________________________