

## **F-385 MODIFIED MOVATS**

**Fixation:** 10% Buffered Neutral Formalin (F-110) or Bouin's Solution (F-40)

**Note:** If formalin fixative is used, decerated tissue sections must be mordanted in Bouins Fluid for 1 hour in a 50°C oven. Wash well in running water to remove picric acid deposits.

**Sections:** 4-6 microns

### **Procedure:**

1. Decerate section and hydrate to distilled water.
2. Stain in Alcian Blue, 1% (F-385-1) for 20 minutes.
3. Dip five times in distilled water.
4. Place in Alkaline Alcohol (F-385-2) in a 56°C oven for 10 minutes.
5. Wash in running tap water for 2 minutes.
6. Stain in Orcein-Verhoeff working solution for 2 hours.  
To prepare Orcein-Verhoeff working solution:  
Immediately before use, in the following order, combine the solutions below:  
Orcein, 0.2% (F-385-3) 25.0 ml  
Alcoholic Hematoxylin, 5% (F-385-4) 8.0 ml  
Ferric Chloride, 10% (F-385-5) 5.0 ml  
Lugol's Iodine (F-385-6) 5.0 ml
7. Wash in running tap water for 3 minutes.
8. Stain in Woodstain Scarlet- Acid Fuchsin Working Solution (F-385-7) for 2 1/2 minutes.
9. Place in Acetic Acid, 0.5% (F-385-8) for 30 seconds.
10. Differentiate in Phosphotungstic Acid, 5% (F-385-9) for 5-10 minutes, well differentiated sections demonstrate colorless collagen and blue-green mucopolysaccharides.
11. Rinse in Acetic Acid, 0.5% (F-385-8) for 30 seconds.
12. Three changes of 100% ethyl alcohol, 1 minute each,
13. Stain in Alcoholic Saffron (F-385-10) for 8 minutes.
14. Dehydrate in 100% ethyl alcohol, two changes.
15. Clear in xylene, three changes.
16. Coverslip.

### **Stain Results:**

Nuclei	Black
Cytoplasm	Red
Elastic Fibers	Purple to Black
Collagen and Bone	Yellow
Mucopolysaccharides	Blue-Green
Muscle	Red

### References:

- Movat, H.Z.,: Demonstoration of all Connective Tissue Elements in a Single Section.  
*Arch Path.*, 60:289-295, 1955.
- Roman N., et al: Orcein-Hematoxylin in Iodized Ferric Chloride as a Stain for Elastic Tissue.  
*Stain Techn.*, 42:199-202, 1967.
- Silverman Jefferey., A Modified Movat Pentachrome Stain.  
*Histologic*, p. 33. 1972