

PTAH METHOD FOR CENTRAL NERVOUS SYSTEM TISSUE

Purpose This stain demonstrates muscle cross striation and fibrin.

Principle The amount of phosphotungstic acid in staining solution is far greater than the amount of hematin (20:1) and it is believed that tungsten binds all available hematin to give a blue colored lake. This lake stains selected tissue components. The phosphotungstic acid stains the red-brown components.

Fixative 10% neutral buffered formalin.

Reagents

PTAH (Purchased)

1% Potassium Permanganate

Potassium permanganate ... 1.0 g

Distilled water ... 100.0 ml

5% Oxalic Acid

Oxalic acid ... 5.0 g

Distilled water ... 100.0 ml

Quality Control Use a control slide of striated muscle or kidney.

Procedure

1. Deparaffinize and hydrate to distilled water.
2. Mordant sections in Zenker's solution containing 5% acetic acid overnight or in 56°C oven for 1 hour.
3. Wash in running water for 15 minutes.
4. Lugol's iodine solution for 15 minutes.
5. Decolorize in 95% alcohol for 1 hour or longer. *Do not use hypo.*
6. Distilled water for 5 minutes.
7. Oxidize in 1% potassium permanganate solution for 5 minutes.
8. Decolorize in 1% oxalic acid solution for 5 minutes.
9. Rinse well in distilled water followed by running water for 5-10 minutes.
10. PTAH solution for 24 hours.
11. 95% alcohol for one quick dip.
12. Dehydrate in absolute alcohol, two quick changes.
13. Clear in xylene, two changes, and mount in synthetic resin.

Results

Nuclei, fibrin, fibroglia and microglia ... blue

Coarse elastic fibrils ... purplish

Procedure Notes

Oven temperature must not exceed 63°C.

References

Histotechnology: A Self-Instructional Text, Freida L. Carson, 1990, p. 156.