

FONTANA - MASSON FOR MELANIN AND ARGENTAFFIN GRANULES

Purpose This stain demonstrates argentaffin substances such as melanin and argentaffin granules of carcinoid tumors.

Principle Certain tissue components are argentaffin, that is they possess the ability to bind with silver and be reduced to a visible form.

Fixative 10% neutral buffered formalin.

Reagents

Silver Nitrate (Fontana)

Silver nitrate ... 10.0 g

Distilled water ... 100.0 ml

To 95.0 ml of this solution add ammonium hydroxide until a clear solution with no precipitate is obtained. Titrate remaining 5.0 ml silver nitrate solution to cause clear solution to become slightly cloudy. Let stand several hours. When ready to use dilute each 25.0 ml of silver nitrate-ammonium hydroxide solution with 75.0 ml of distilled water and filter.

Gold Chloride Solution

Gold chloride, 1% aqueous ... 10.0 ml

Distilled water ... 40.0 ml

5% Sodium Thiosulfate (Hypo) Solution

Sodium thiosulfate ... 5.0 g

Distilled water ... 100.0 ml

Nuclear Fast Red (Kernechtrot) Solution

Fast Red ... 1.0 g

5% Aluminum sulfate ... 100.0 ml

Procedure

1. Deparaffinize and hydrate slides to distilled water.
2. Place slides in silver nitrate solution in oven at 63°C for one hour. Sections will turn light brown.
NOTE: Silver nitrate solution should be made fresh.
3. Rinse in distilled water for several changes.
4. Place in gold chloride solution for 10 minutes.
5. Rinse well in distilled water.
6. Place in sodium thiosulfate solution for 5 minutes.
7. Rinse in distilled water for several changes.
8. Counterstain in nuclear fast red for 2 minutes.
9. Rinse well in distilled water.
10. Dehydrate in 95% alcohol, absolute alcohol, and clear in xylene, two changes each.
11. Mount in synthetic resin.

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Results

Melanin and argentaffin ... black
Background ... red

References

N/A