Gill'S Hematoxylin Staining Solution (Gill No.1)

Cat #: A-CSH258

Size: 100mL, 500mL

Storage: 10-30 °C, Avoid exposure to light (1 year)

Product Description

Hematoxylin and Eosin (HE) staining, which combines Hematoxylin and Eosin dyes, is the most commonly used staining method in pathology and histology. Hematoxylin is a basic natural dye that stains the cell nuclei. The main component of chromatin in the cell nucleus is DNA. In the double helix structure of DNA, the phosphate groups on the two nucleotide chains are oriented outward, giving the outer side of the DNA double helix a negative charge, making it acidic. This acidic nature allows it to easily bind to the positively charged basic dye Hematoxylin through ionic or hydrogen bonding, resulting in staining.

Gill Hematoxylin staining solution (Gill No.1), also known as Gill I solution, is a semi-oxidized Hematoxylin staining solution. It contains a lower concentration of Hematoxylin, which is within the normal range. It is used for progressive staining and does not require differentiation with hydrochloric acid ethanol after staining. It is particularly suitable for cytological smears staining, with a staining time of approximately 3 to 5 minutes. The disadvantage of this staining solution is that it can stain adherent gelatin or even the glass slides themselves. It is not recommended for staining paraffin sections, as the staining time for paraffin sections should be longer than 15 minutes. It is less commonly used for routine diagnostic slide preparations in clinical settings.

Usage

I. Paraffin Section Staining

(A) Deparaffinization

1. Bake the slides for 30-60 minutes, deparaffinize with xylene (I) for 5-10 minutes.
2. Deparaffinize with xylene (II) for 5-10 minutes.
3. Wash with absolute ethanol for 1-5 minutes.

4. Wash with 95% ethanol for 1-5 minutes.

5. Wash with 75% ethanol for 1-5 minutes.

6. Rinse with tap water or distilled water.

(B) Staining

1. Stain with Hematoxylin for 5-20 minutes.

2. Rinse with tap water or distilled water for 5-10 seconds, observe the depth of cell nuclei under a microscope to estimate the differentiation time.

3. Differentiate with acidic ethanol for 2-5 seconds (optional).

4. Rinse with tap water for 20-30 seconds, observe the appropriate depth of cell nuclei under a microscope to determine the need for bluing, re-staining, or further differentiation.

5. Blueing solution for 5 minutes on slides with suitable staining intensity, followed by rinsing with running water for 5 minutes.

6. Treat with 95% ethanol for 1 minute.

7. Stain with Eosin for 15-30 seconds.

8. Wash with 75-85% ethanol for 30 seconds.

(C) Dehydration, Clearing, and Mounting

1. Wash with 95% ethanol (I) for 0.5-2 minutes.

2. Dehydrate with 95% ethanol (II) for 2-5 minutes.

3. Dehydrate with absolute ethanol (I) for 2-5 minutes.

4. Dehydrate with absolute ethanol (II) for 2-5 minutes.

5. Clear with xylene (I) for 1 minute.

6. Clear with xylene (II) for 1 minute and mount with neutral resin.

II. Frozen Section Staining

(A) No deparaffinization required. Rinse directly with distilled water for 2-3 minutes after fixation.

(B) Follow the staining, deparaffinization, clearing, and mounting steps as in paraffin section staining.

III. Cell Staining

1. Fix with 4% paraformaldehyde for 10-20 minutes.

2. Rinse twice with tap water for 2 minutes each.

3. Rinse twice with distilled water for 2 minutes each.

4. Follow the staining, deparaffinization, clearing, and mounting steps as in paraffin section staining, with reduced duration accordingly.

Staining Results

Cell Nucleus	Blue
Cytoplasm and Fibers	Red

Notes

1. Deparaffinization should be as thorough as possible. The series of ethanol solutions should be regularly replaced with fresh ones.
2. The staining time for frozen sections should be kept as short as possible.
3. Blueing solution commonly uses 0.2-1% ammonia water, Scott's tap water substitute, or 0.1-1% lithium carbonate solution.
4. For your safety and health, please wear a lab coat and disposable gloves while performing the procedure.

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.