Ehrlich'S Hematoxylin Staining Solution

Cat #: A-CSH256

Size: 100mL, 500mL

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

Product Description

Hematoxylin and Eosin (HE) staining, also known as Hematoxylin-Eosin staining, is the most commonly used staining method in pathology and histology. Hematoxylin, a basic natural dye, is responsible for staining 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 DNA double helix a negative charge and an acidic nature. This makes it easy to bind with basic dyes, such as hematoxylin, which carry positive charges, through ionic or hydrogen bonding, resulting in staining. There are two mature methods for hematoxylin preparation: natural oxidation and chemical oxidation. Natural oxidation refers to the exposure to light and air, which is a relatively slow process and takes approximately 3 to 6 months. However, the resulting staining ability can be maintained for a long time. Ehrlich and Delafield hematoxylin are examples of natural oxidation methods.

Ehrlich hematoxylin, as a reliable nuclear staining solution, can also be used for staining mucopolysaccharides in cartilage, bones, and cartilage. Ehrlich hematoxylin staining solution is highly stable and can be sealed and stored for up to 2 years once matured. It provides clear and detailed staining of chromatin, although the staining time is slightly longer, around 15 to 20 minutes. It is suitable for slide preparation staining in teaching and research, but not ideal for frozen section staining.

Usage

I. Paraffin Section Staining

A. Deparaffinization

1. Deparaffinize the sections in water.

2. Treat with xylene twice, 5 to 10 minutes each.

3. (Optional) Treat with absolute ethanol twice, 3 to 5 minutes each.

4. 95% ethanol for 3 to 5 minutes.

5. 90% ethanol for 3 to 5 minutes.

6. 80% ethanol for 3 to 5 minutes.

7. Rinse with tap water or distilled water for 1 to 3 minutes.

B. Staining

1. Stain with Ehrlich hematoxylin solution for 15 to 20 minutes.

2. Rinse with tap water or distilled water for 5 to 10 seconds.

3. (Optional) Differentiate with hydrochloric acid ethanol for 2 to 5 seconds.

4. Rinse with tap water for 20 to 30 seconds.

5. (Optional) Blueing solution for 20 to 40 seconds.

6. Rinse with tap water for 30 to 60 seconds.

7. Stain with eosin staining solution for 3 to 5 minutes.

8. Rinse with tap water for 1 to 5 seconds.

C. Dehydration, Clearing, and Mounting

1. 80% ethanol for 10 to 20 seconds.

2. 90% ethanol for 10 to 20 seconds.

3. 95% ethanol twice, 1 to 2 minutes each.

4. Absolute ethanol twice, 2 to 3 minutes each.

5. Xylene for clearing, three times, 2 to 3 minutes each.

6. Mount with neutral resin.

II. Cell Staining

A. 4% paraformaldehyde fixation for 10 to 20 minutes.

B. Rinse with tap water twice, 2 minutes each.

C. Rinse with distilled water twice, 2 minutes each.

D. Follow the staining, deparaffinization, clearing, and mounting steps as in paraffin section staining, with corresponding shortened durations.

Staining Results

Cell Nucleus	Blue
Cytoplasm and Fibers	Red

Notes

1. The deparaffinization of sections should be as thorough as possible. The series of ethanol solutions should be regularly replaced with fresh ones.
2. The duration of differentiation with hydrochloric acid ethanol should be determined based on the thickness of the sections, tissue type, and the condition of the solutions. Additionally, the rinsing time with tap water after differentiation should be sufficient to thoroughly wash away the acid.
3. Blueing solution is commonly prepared using 0.2-1% ammonia water or Scott's tap water substitute, or a 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.