

## Thionin Staining Solution (2%)

**S1508553**

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**Storage:** Room Temperature. Store in the dark.

### Introduction:

Many dyes exhibit varying degrees of affinity for DNA and can therefore be used to stain chromosomes. For routine staining of chromosomes, good results are generally obtained with Giemsa, orcein, Feulgen, carbol fuchsin, etc. Thionine can be used for chromosome staining in samples such as oral mucosa, urine, amniotic fluid, chorionic villus cells, and cultured cells, and is particularly suitable for staining sex chromatin, which is often difficult to stain. Additionally, thionine can be used for staining structures such as Nissl bodies and mast cells.

Thionin Staining Solution (2%) is primarily composed of phosphate and thionine. When staining Nissl bodies, they appear dark blue; however, when staining mast cells, they appear purplish-red. This reagent is intended for research use only and is not suitable for clinical diagnosis or other purposes.

### Instructions for Use (For Reference Only):

1. Staining of Nissl Bodies:
  - Fixation: Use neutral formalin fixative or other appropriate fixatives.
  - Paraffin sections 6–8  $\mu\text{m}$  thick; routine deparaffinization with xylene or dewaxing clearing solution to distilled water.
  - Immerse the slide specimen in Thionine Staining Solution (2%) for 10–15 minutes; rinse briefly with distilled water.
  - Differentiate rapidly with 95% ethanol.
  - Dehydrate with absolute ethanol, clear with xylene or dewaxing clearing solution, and mount with neutral balsam.
2. Staining of Chromatin:
  - Place the slide specimen in 1 mol/L HCl and incubate at 37°C for 20 minutes.
  - Rinse thoroughly with distilled water and air-dry.
  - Immerse the slide specimen in Thionine Staining Solution (2%) for 10–15 minutes.
  - Rinse with distilled water and air-dry.
  - Under low magnification, search for evenly dispersed cell populations, then carefully observe under oil immersion.

### Staining Results:

1. Nissl bodies appear dark blue; nuclei appear light blue.
2. Chromatin appears purplish-red; other components appear blue.

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**Notes:**

1. Tissue intended for Nissl body staining should be as fresh as possible and fixed promptly; otherwise, Nissl bodies may dissolve and stain poorly.
2. Nissl body specimens should be stored protected from light, as they are prone to fading.
3. During centrifugation to obtain cell pellets, for certain cell types, if the pellet is insufficient, centrifugation force or time may be increased appropriately.
4. This staining solution is more suitable for Nissl body staining; although it can be used for chromatin staining, it is not recommended.
5. For your safety and health, please wear a lab coat and disposable gloves during operation.
6. Use the reagents as soon as possible after opening to avoid affecting subsequent experimental results.

