Congo Red Staining Solution (1%)

C1516057

Storage: Room Temperature.
Shipping: Normal.

Introduction:

Amyloid is an amorphous, extracellular, eosinophilic substance that can be present in various tissues and organs, and the disease it causes is known as amyloidosis. Amyloid is mainly composed of proteins, most of which are arranged in an antiparallel β-pleated sheet structure. Under an electron microscope, amyloid appears as fibrils; in pathological specimens, it consists of abundant extracellular non-branching filaments, mostly randomly arranged. Histological methods for identifying amyloid include methyl violet staining, Congo red staining, and observation under polarized light microscopy. Studies have shown that the traditional methyl violet staining method has low sensitivity and poor specificity, while the classic and effective method is Congo red staining. In 1922, Bennhold discovered that Congo red could be used to identify amyloid in vivo and applied it to tissue sections.

The staining principle of Congo Red Staining Solution (1%) is that amyloid has a greater affinity for Congo red than other tissue structures. Its hydroxyl groups combine with the amino groups of Congo red, thereby staining amyloid red. This reagent is for research use only. Not for clinical diagnosis or other purposes.

Materials Required:

10% neutral formalin fixative, distilled water, graded ethanol series.

Protocol (for reference only):

1. Routine fixation, usually with 10% neutral formalin fixative, followed by routine dehydration and embedding.
2. Cut sections at 4 μm thickness. Deparaffinize routinely in xylene or dewaxing agent to water.
3. Stain in Congo Red Staining Solution (1%) for 30 minutes.
4. Proceed with subsequent staining steps.

Staining Results:

Amyloid: Red.

Note: Under polarized light microscopy, amyloid shows yellow-green birefringence.

Precautions:

1. Section deparaffinization should be thorough, otherwise staining quality will be affected.

2. Prefer immersion staining with Congo Red Staining Solution. If using drop staining, sections should be kept in a moist chamber to prevent evaporation.
3. Short differentiation time may also stain collagen fibers red; excessive differentiation will decolorize amyloid.
4. If over-decolorized, sections may be rinsed and restained with Congo Red Staining Solution.
5. For your safety and health, wear laboratory coat and disposable gloves during operation.
6. Use the reagent promptly after opening to avoid affecting experimental results.