TTC Staining Kit, 2%

Catalog No.: RA20112

Basic Information

Product name	TTC Staining Kit, 2%
Sizes	100 mL
Storage	2-8 ℃, keep away from light
Shipping	Shipped with ice pack
Validity	6 months

Product Introduction

2,3,5-Triphenyltetrazolium chloride (TTC) has a molecular weight of 334.80, molecular formula $C_{19}H_{15}ClN_4$, and CAS number 298-96-4. TTC is a lipophilic, light-sensitive compound originally used to assess seed viability and later applied to visualize ischemic infarction in mammalian tissues. TTC acts as a proton acceptor for the pyridine-nucleotide-linked enzyme system of the respiratory chain. In normal tissue it is reduced by respiratory enzymes to a red product, whereas ischemic tissue, in which respiratory enzyme activity is decreased, remains pale and unchanged. Thus TTC staining provides a macroscopic method for evaluating dehydrogenase activity in tissues.

EnkiLife TTC Staining Solution (2%) permits observation of myocardial infarction and necrotic areas in brain tissue 3–6 h earlier than electron microscopy and 24 h earlier than light microscopy. It is mainly used for fresh heart and brain tissue in autopsy and for staining early infarcted tissue in experimental animal models; it can also be used to assess seed and pollen viability. Product features: 1. Fresh tissue can be stained immediately without fixation, embedding, or other pre-treatment. 2. Short staining time, generally 20–30 min. 3. The solution can be reused; 10 mL can stain about 20 samples.

Materials Required (Not Supplied)

1. Normal saline, 4% paraformaldehyde or 10% neutral buffered formalin.
2. Low-temperature freezer.

Experimental procedure

(I) Brain-tissue staining

1. Collect fresh brain sample (after anaesthesia with or without saline perfusion); freeze at −20 °C for 20–30 min to facilitate slicing.

2. Slice brain: 2–3 mm thickness for animals, 3–5 mm for human samples; obtain 4–5 consecutive sections. First cut: midpoint between frontal pole and optic chiasm. Second cut: optic chiasm. Third cut: infundibular stalk. Fourth cut: between infundibular stalk and posterior pole (see: Zhang Juntian, ed. Modern Pharmacological Experimental Methods).
3. Immerse slices in TTC Stain (2%) protected from light for 30–35 min.
4. Fix slices in 4 % paraformaldehyde or 10 % neutral buffered formalin for 4–24 h.
5. Blot surface water and measure infarct area/volume with image-analysis systems such as IPP.

(II) Seed staining

1. Cut different viability seeds transversely and longitudinally along the embryo centre; keep half of each seed.
2. Incubate the halves in TTC Stain (2%) at 37 °C for 20 min protected from light.
3. Pour off the stain, rinse 2–3 times with tap water, and immediately observe embryo coloration.

Staining Results

Seed or pollen staining	Color
High viability	Red
Low viability	Pale red
Non-viable or sterile	Colorless

Myocardial or brain-tissue staining	Color
Normal myocardium or brain tissue	Red
Myocardial or cerebral infarct area	Pale
Ischemic brain tissue	Intermediate between red and pale

Notes

1. TTC Stain (2%) is slightly irritating; handle with care.
2. Maintain brain integrity during dissection.
3. If staining is weak, prolong staining time appropriately.
4. Use the freshest samples possible; enzyme activity in normal myocardium and brain declines

quickly—stain promptly.

5. Wear laboratory coat and disposable gloves for personal safety.

6. Use reagent soon after opening to ensure optimal performance.

This product is for research use only!