

Transganglionic transport of dextran conjugated to xanthene dyes (1). Jan 1991.

Where to acquire the fluorescent labelled dextrans

Rhodamine B dextran-amine (70,000 Mw): Molecular Probes Inc

Tetramethyl rhodamine-dextran-amine or Fluoro-Ruby (10,000 Mw): Molecular Probes Inc.
A vial contains 25 mg.

Storage of fluorescent labelled dextrans

Dry: They can be stored for many months at 4 degrees C

Solution: Solution under mineral oil can be stored at -20 degrees C for a least 2 months
(Glover et al.)

Animals in which it is used

Chicken embryo (Glover et al.)

Adult rats (Schmued et al.)

Anesthesia

Pentobarbital and chloral hydrate (Schmued et al.)

Pentobarbital (50 mg/kg i.p.) (Thanos et al.)

Application methods

Injection: Pressure or iontophoresis (Schmued et al.)

Dilution:

- Pressure injection: 10% dye solution dissolved in saline (Glover et al.)
- Iontophoresis: 10% dye solution dissolved in 0.01 M neutral phosphate buffer (Glover et al)
- Peripheral nerve (2): 25% dye solution in distilled water with or without 5% Triton X-100 (Glover et al.)

Survival period

CNS: 6 to 14 days (min 3, max 30 days) (Schmued et al)

PNS: possibly the same

They can be stored at -20 degrees C for many weeks without loss of quality

References

Glover JC, Petursdottir G and Jansen Jan KS (1986) "Fluorescent dextran- amines used as axonal tracers in the nervous system of the chicken embryo". J Neurosci Methods 18:243-254

Schmued L, Kyriakidis K and Heimer L (1990) "In vivo anterograde and retrograde axonal transport of the fluorescent rhodamine-dextran-amine, Fluoro-Ruby, within the CNS". Brain Res 526:127-134

Thanos S, Vidal-Sanz M and Aguayo AJ (1987) "The use of rhodamine-B-isothiocyanate (RITC) as an anterograde and retrograde tracer in the adult rat visual system". Brain Res 406:317-321

Notes

(1) Xanthene dyes: Fluorescein, rhodamine B, tetramethyl rhodamine, Texas red

(2) Axons must be injured for these substance to be efficiently taken up. A similar effect can be obtained by coinjecting the dye with a membrane-permeabilizing substance. Excellent labelling is obtained with fluorescein-conjugated dextran-amine in 5% Triton X-100 in the central nervous system (Glover et al.)