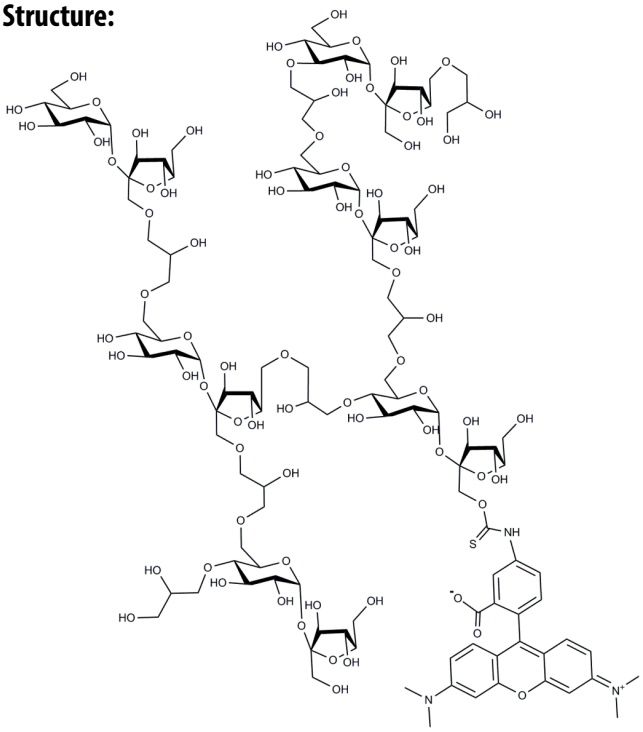
TRITC-polysucrose
(TRITC-Ficoll®)

Chemical names: Tetramethyl-rhodamine isothiocyanate-polysucrose
Polysucrose 3´,6´bis(tetramethylamino) -3-oxospiro(isobenzofuran-1(3H),9´-9H] xanthen]-5(or 6)- yl)carbamothioate.
Tetramethyl-rhodamine B thiocarbamoyl-polysucrose

CAS number: not available

Structure:



Properties:

TRITC-polysucrose is a derivative of polysucrose – a polymer synthesized by cross-linking sucrose with epichlorohydrin. TRITC-polysucrose is prepared by reacting polysucrose with TRITC under similar conditions to those used for TRITC-dextrans. TRITC-polysucrose is readily soluble in water and salt solutions over a wide range of pH. Polysucrose is more sensitive to acid than dextran so that care must be taken when working at acid pH. It is supplied as a red powder which is freely soluble in water.

Spectral data:

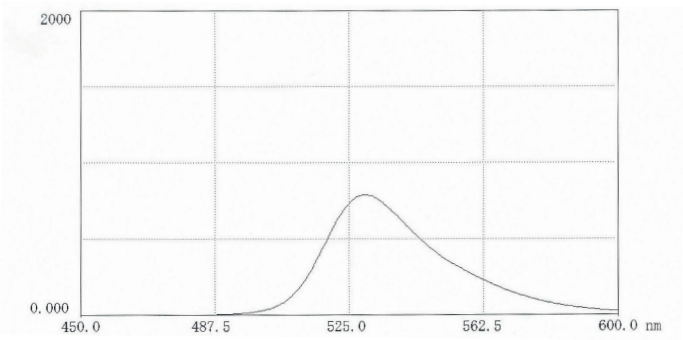


Fig. 1. Fluorescence scan of TRITC-polysucrose 70 in 0.025M borate pH 9.0
(11mg in 50 ml buffer) Excitation 522nm; Emission 552nm.

Storage and stability

TRITC-polysucrose powder when stored in air-tight containers at ambient temperatures is stable for at least 6 years. The stability of TRITC-polysucroses in solution has not been investigated in detail. The stability of the thiocarbamoyl linkage between the tetramethylrhodamine moiety and polysucrose will be similar to that with dextran (see TRITC-dextran). However, low pH storage is not recommended for polysucrose-based products owing to the lability of glycosidic linkages in sucrose. Polysucrose itself can be autoclaved at neutral and slightly alkaline pH.

Applications

TRITC-polysucrose has similar applications to those described for FITC-polysucrose but has certain advantages. As mentioned earlier, the fluorescence of tetramethylrhodamine is less dependent on pH than FITC-labels. Also the longer emission wavelength avoids background interference in experimental environments.

A TRITC-polysucrose 70 has been used in studies of the renal endothelial barrier (1,2). Antibody response to thymus-independent antigens has been studies with the aid of TRITC-Ficolls (3).

References

1. M.P. Hutchens, T. Fujiyoshi, R. Komers et al., Estrogen protects renal endothelial barrier from ischemia reperfusion in vitro and in vivo, Am J Physiol Renal Physiol, 303(2012), F377-F385.

2. M. Ikeda, K. Schenning, S. Anderson et al., Estrogen administered after cardiac arrest and cardiopulmonary resuscitation is renoprotective, www.epostersonline. om/asa2014/node/1059.

3. L. Amlot, D. Grennan and J.H. Humphrey, Splenic dependence of the antibody response to thymus-independent (TI-2) antigens, Eur J Immunol, 15(1985), 508-512.

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