TRITC-polysucrose

Chemical names: Tetramethyl-rhodamine isothiocyanatepolysucrose

Polysucrose 3´,6´bis(tetramethylamino) - 3-oxospiro(isobenzofuran-1(3H),9´-9H] xanthen]-5(or 6)- yl)carbamothioate.

Tetramethyl-rhodamine B thiocarbamoylpolysucrose

Trade name: TRITC-polysucrose

CAS nr: N/A

Structure:

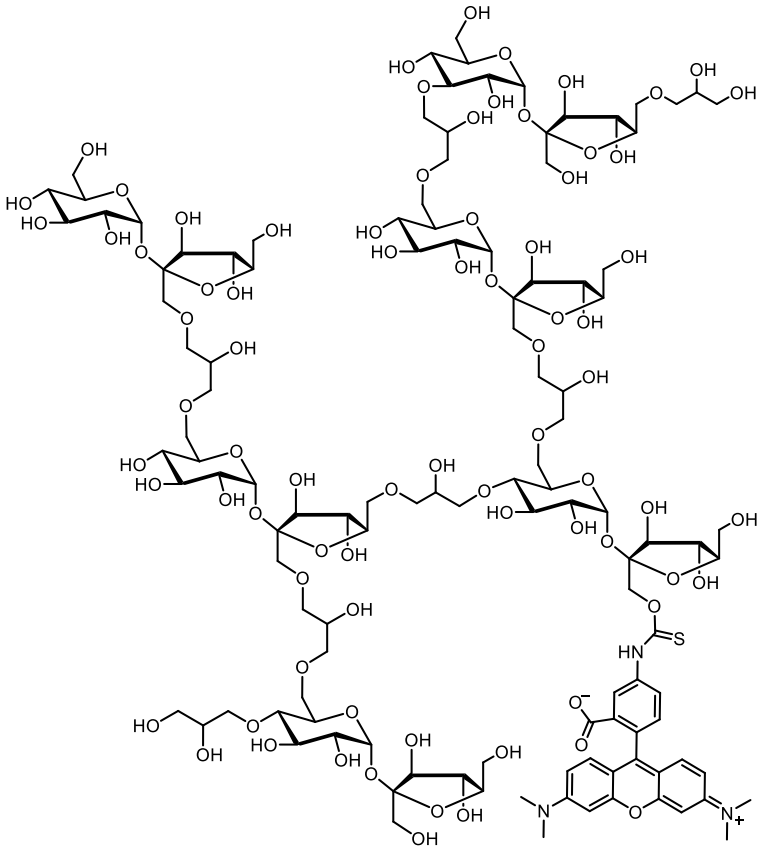

Fig. 1. Structural representation of fragment of TRITC-polysucrose.

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

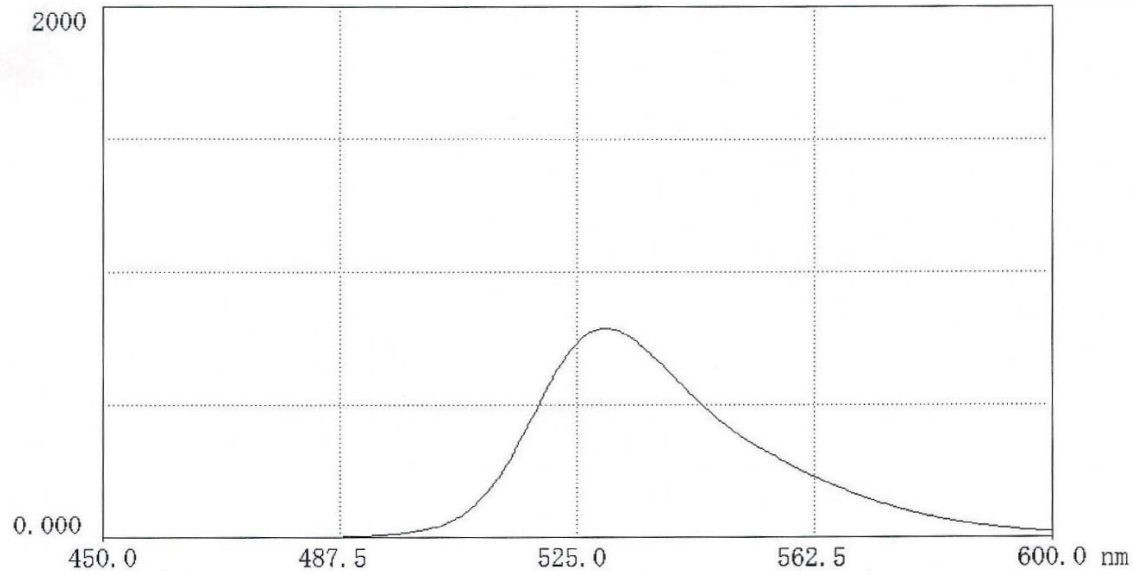

Fig. 2. *Fluorescence scan of TRITC-polysucrose 70 in 0.025M borate pH 9.0 (11mg in 50 ml buffer) Excitation 522nm; Emission 552nm.*

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 tetramethyl rhodamine 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 tetramethyl rhodamine 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.