

Antonia Red™-dextran

CAS nr: N/A

Structure:

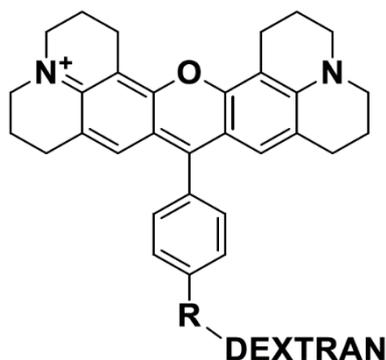


Fig. 1. Structural representation of Antonia Red-dextran.

Synthesis and structure

Antonia Red™ dextrans are synthesised from well-characterized dextran fractions derived from *Leuconostoc mesenteroides* labelled with Antonia Red. After purification from non-bound dye, the products are controlled for Mw, appearance, solubility, DS, fluorescence and free dye. The products are designated by the approximate molecular weights of the dextran fractions used. Thus, for example, the product Antonia Red dextran 4 has a molecular weight of approx. 4000 Da. The actual molecular weight is determined by GPC. This value is supplied with the Certificate of Analysis. The dextran used is from *Leuconostoc mesenteroides* B-512F which is essentially a linear α -(1-6)-linked glucose chain with however a low percentage (2-5%) of α -(1-3) branches distributed along the chain. The dextran fractions used are from Mw of 4000 to 150000 and are carefully controlled by GPC, optical rotation, absorbance and other control parameters.

Spectral properties

Antonia Red dextran has an absorbance maximum at 583 nm (in borate buffer, pH 9.0) and an emission wavelength of 602 nm. The dye residue exhibits high photo- and chemical stability and bright fluorescence. The DS lies between 0.001-0.01.

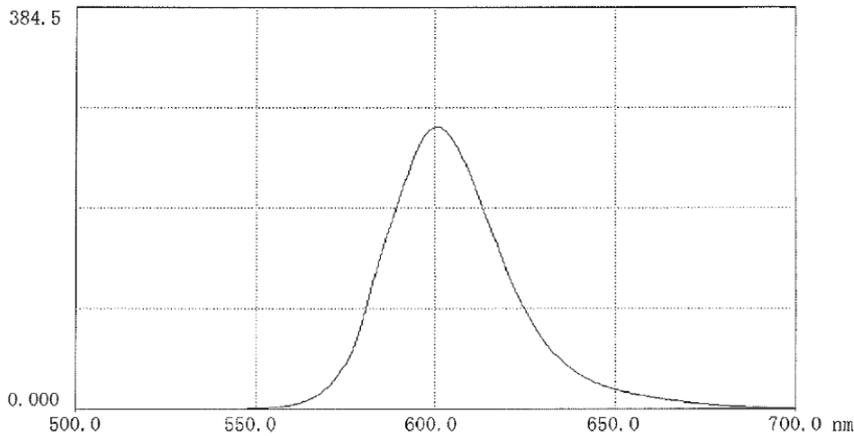


Fig. 2. Fluorescence scan of Antonia Red dextran 150 obtained in borate buffer, pH 9.0. The excitation wavelength was 583 nm.

Stability

No prospective stability studies on Antonia Red-dextran have been performed. However, the structural properties of the dextran carrier and those of the chemical linkage of the Antonia Red-dye to the dextran chain would suggest good stability of the product. It is recommended that the products are stored in air-tight containers in the dark. Antonia Red dextran may be stored at ambient temperatures.

Applications

Antonia Red dextran is primarily used for studying permeability and transport in cells and tissues, trace cell lineage and perform vasculature studies. An added benefit is that measurements of the fluorescence provide quantitative data on the permeability of healthy and diseased tissues. Such studies can be performed in real time by intra-vital fluorescence microscopy. The technique offers high sensitivity and concentrations down to $1 \mu\text{g/ml}$ can be detected in tissue fluids. Antonia Red dextran is brightly fluorescent using the red (Texas Red) filter in fluorescence microscopy.