

# Tetramethyl-rhodamine hyaluronic acid (TR-HA)

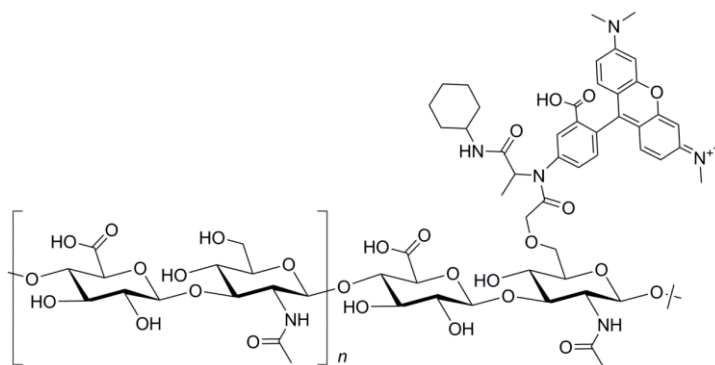
**Chemical names:** Tetramethyl-rhodamine hyaluronic acid Hyaluronan,  
6'-bis(tetramethylamino) -3-oxospiro(isobenzofuran-1(3H),9'-9H]  
xanthen]-5(or 6)- yl).

Tetramethyl-rhodamine B hyaluronan

**Trade name:** Tetramethyl-rhodamine hyaluronic acid (TR-HA)

**CAS nr:** N/A

**Structure:**

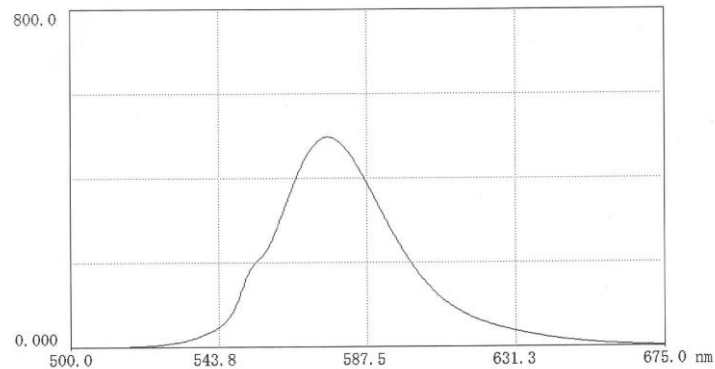


**Fig. 1.** Structural representation of Tetramethyl-rhodamine hyaluronic acid (TR-HA)

## Properties

Hyaluronic acid, a polysaccharide composed of alternating  $\beta$  (1- 3) glucuronide and  $\beta$  (1-4) glucosaminide units -derived from *Streptococcus equi*, is labelled with amino-tetramethyl rhodamine giving a red product that is soluble in water and electrolytes. The DS lies between 0.001 and 0.008. The product is designated by the approximate molecular weights of the hyaluronic acid used, which is approximately 1.5 MDa.

## Spectral data



*Fig. 1. Fluorescence scan of TR-HA in 0.025M borate pH 9.0 (12mg in 50 ml buffer) Excitation 552nm; mission 576nm.*

## Applications

Tetramethyl-rhodamine hyaluronic acid (TR-HA) has similar applications to those described for fluorescein hyaluronic acid (see earlier section) 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 interference from background images in experimental environments. Invasive growth into brain tissue employing TR-HA and 2-photon imaging has been described (1).

## References

1. A. Pusch, A. Boeckenhoff, T. Glaser et al., CD44 and hyaluronan promote invasive growth of B35 neuroblastoma cells into the brain, *Biochim Biophys Acta*, 1803(2010), 261-274.