

sulfo-Cyanine5 tyramide

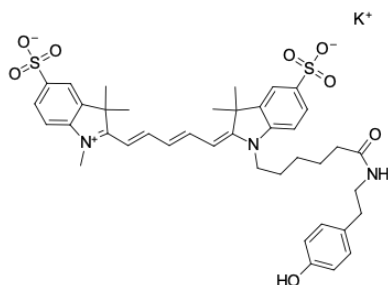
<http://www.lumiprobe.com/p/sulfo-cyanine5-tyramide>

Thyramide signal amplification (TSA) is the most versatile and effective way to enhance the intensity of the fluorescent signal, used in immunohistochemistry (IHC), immunocytochemistry (ICC), and fluorescence *in situ* hybridization (FISH). The TSA method is based on the ability of horseradish peroxidase (HRP) in the presence of low concentrations of hydrogen peroxide to convert a labeled tyramine-containing substrate into an oxidized, highly reactive free radical that covalently binds to the tyrosine residues of protein molecules located next to it.

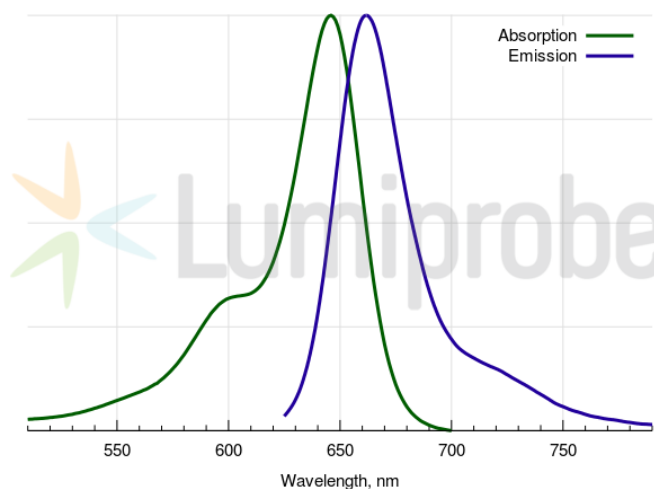
Compared to conventional procedures, the TSA method increases the sensitivity of immunofluorescent detection of target molecules by more than 100 times, making it particularly suitable for detecting low-concentration targets. In applications where increased detection sensitivity is not required, TSA can significantly reduce antibody or probe concentrations without loss of signal intensity, thereby reducing background staining due to cross-reactivity or non-specific binding of antibodies.

Since the binding of the tyramide label is covalent, tyramides of different dyes can be used in several sequential rounds of TSA staining to detect multiple targets in the same sample.

This tyramide is a conjugate of the water-soluble far-red fluorescent dye sulfo-Cyanine5. sulfo-Cyanine5 tyramide (also known as Cy5® and Cyanine5 tyramide from other manufacturers) is a component of many tyramide signal amplification (TSA) kits. It can be used with any antibody or other molecules (streptavidin, etc.) conjugated to HRP to stain cells and tissues by immunofluorescence methods.



Structure of sulfo-Cyanine5 tyramide



Absorption and emission spectra of sulfo-Cyanine5

General properties

Appearance:	dark blue solid
Molecular weight:	800.05
Molecular formula:	$C_{40}H_{46}KN_3O_8S_2$
Solubility:	soluble in water, DMSO, DMF
Quality control:	NMR 1H and HPLC-MS (95+%)
Storage conditions:	24 months after receipt at $-20^\circ C$ in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate. Avoid prolonged exposure to light.

Spectral properties

Excitation/absorption maximum, nm:	646
ϵ , $L \cdot mol^{-1} \cdot cm^{-1}$:	271000
Emission maximum, nm:	662
Fluorescence quantum yield:	0.28
CF_{260} :	0.04

CF₂₈₀:

0.04

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