

Product number: K9-4142

Product name: SeTau-647-di-NHS

General Data

- Molecular Mass:** 1780.15
1521.67 (protonated form)
- Solubility (moderate):** Water, Alcohol, DMF, DMSO
- Insoluble:** Chloroform
- Storage:** Store in absence of light, desiccate and refrigerate

Description

- Water-soluble, amine-reactive label containing two NHS-ester groups — **brightest fluorescent label** currently available for the 647-nm Kr-ion laser line

Applications

- Fluorescence imaging
- Fluorescence lifetime applications and fluorescence lifetime imaging (FLIM)
- Superresolution microscopy
- Immunofluorescence and FRET applications
- 2-Photon microscopy
- Single molecule applications
- Fluorescence correlation spectroscopy (FCS)
- Proteomics

Advantages

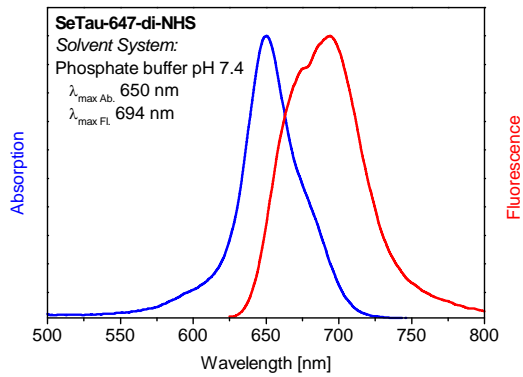
- Perfectly suited for excitation with the 635-nm, 647-nm, or 650-nm lasers
- Brightest dye** currently available on the market for the red laser lines
- Highly sensitive: high extinction coefficient of $200,000 \text{ M}^{-1}\text{cm}^{-1}$ and high quantum yield of ~60% in aqueous environments
- Good aqueous solubility: this label does not alter the solubility of the protein conjugate
- Ozone stability: Higher ozone stability than **Alexa Fluor™ 647** or **Cy5™** enables array experiments to be performed with SeTau 647 under any environmental condition
- Large Stokes' shift:** SeTau 647 has a 44 nm Stokes' shift
- Extremely photostable:** Much higher photostability as compared to **Alexa Fluor™ 647**, **DyLight 650**, **ATTO 647N** or **Cy5™** (see below)
- Fluorescence lifetime three times longer** than that of **Cy5™** or **Alexa Fluor™ 647**: 3.1 ns in water
- Ideal for non-radioactive labeling of proteins, amino-modified DNA probes and amino-modified oligonucleotides

Spectral Data

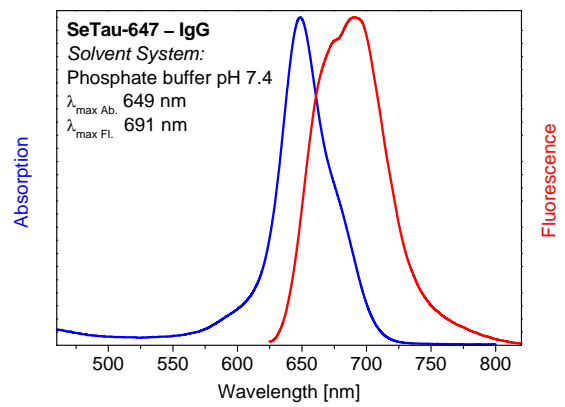
Solvent System: phosphate buffer pH 7.4

Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [$\text{M}^{-1}\text{cm}^{-1}$]	Fluorescence max. [nm]	Quantum Yield ¹ [%]
Free label	—	650	200,000	694	65
IgG conjugate 1	0.5	649		691	58

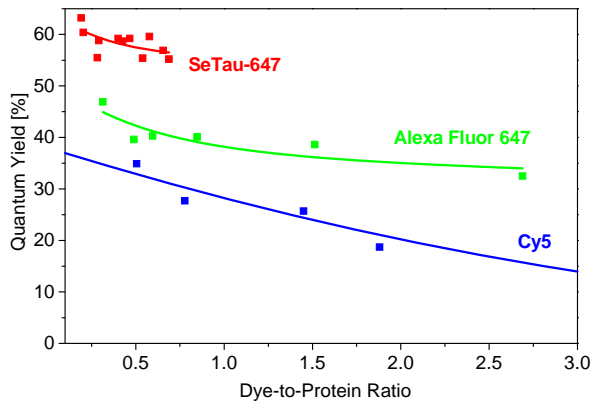
¹ Excitation at 620 nm



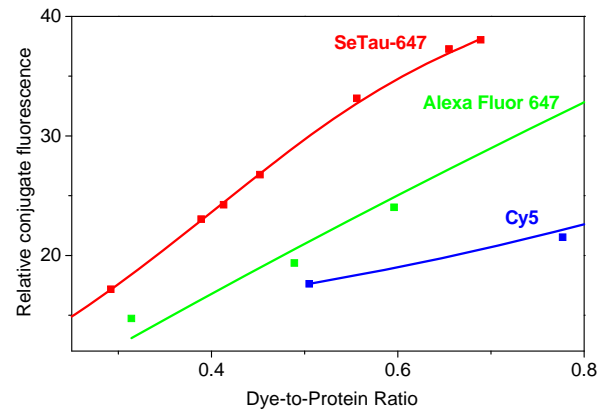
Absorption and emission spectrum of **SeTau-647-di-NHS** in phosphate buffer (pH 7.4)



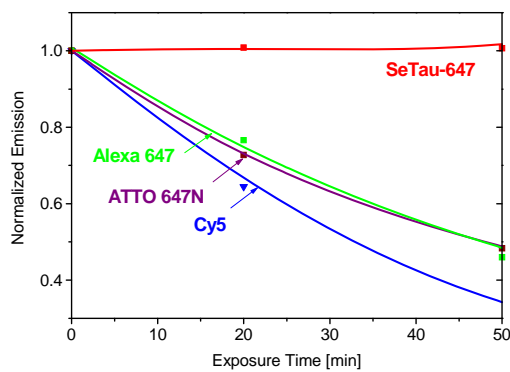
Absorption and emission spectrum of a **SeTau-647 – IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 1.0)



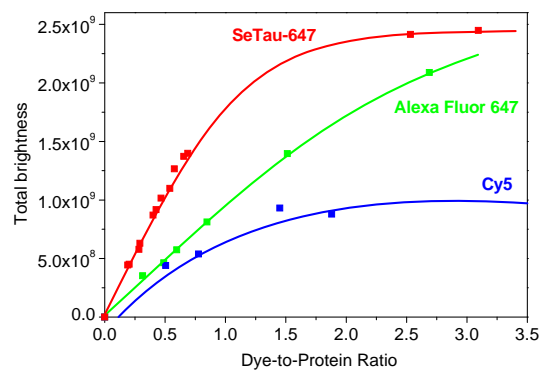
Quantum yield vs. dye-to-protein ratio of **SeTau-647 – IgG conjugates** in phosphate buffer (pH 7.4)



Relative fluorescence (Q.Y. x D/P ratio) of **SeTau-647 – IgG conjugates** in phosphate buffer (pH 7.4) as compared to **Cy5** and **Alexa Fluor 647** conjugates



Relative photostability of **SeTau-647** vs. Alexa 647, ATTO 647N or **Cy5**



Total brightness (Q.Y. x D/P x ϵ) of **SeTau-647 – IgG conjugates** in phosphate buffer (pH 7.4) as compared to **Cy5** and **Alexa Fluor 647** conjugates