

**Product number: K9-4159**  
**Product name: SeTau-660-NHS**

## General Data

**Molecular Mass:** 1826.33  
1438.60 (protonated form)  
**Solubility:** Water, Alcohol, DMF, DMSO  
**Insoluble:** Chloroform, Hexane  
**Storage:** Store in absence of light, desiccate and refrigerate

## Description

- Extremely bright, water-soluble, amine-reactive label containing one NHS-ester group. The ideal label for proteins and other amino-modified biomolecules including oligonucleotides.

## Advantages

- Perfectly suited for excitation with 640, 650, and 670-nm diode lasers
- Low quenching tendency at high dye-to-protein ratios compared to other labels e.g. **Cy5.5™**
- Stokes' shift of ~31 nm (larger than for **Cy5.5**).
- Considerably higher photostability compared to fluorescein or other cyanine dyes (**Cy5** or **Cy5.5** dyes)
- High chemical stability against oxidation with peroxides or other oxygen species
- Longer fluorescence lifetime compared to **Cy5.5**
- Extremely bright label: most sensitive organic fluorescent label for proteins currently on the market for the 647-nm Kr-ion and 670 laser lines

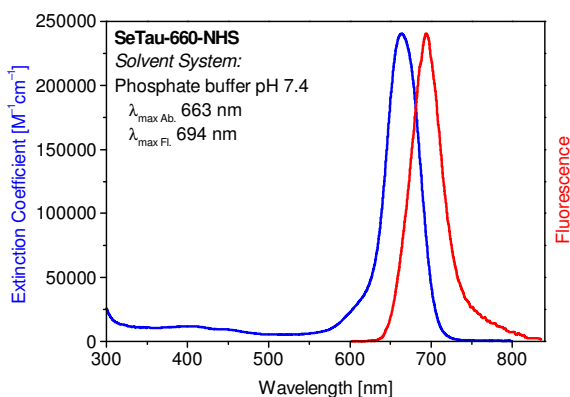
## Spectral Data

**Solvent System:** phosphate buffer pH 7.4

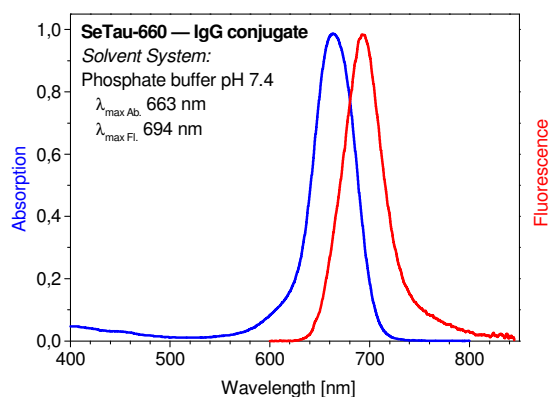
Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [ $M^{-1}cm^{-1}$ ]	Fluorescence max. [nm]	Quantum Yield <sup>1</sup> [%]	Fluorescence Lifetime at 25 °C [ns]
Free dye	—	663	240,000	694	50	3.36
IgG conjugate 1	1.0	663		694	56	
IgG conjugate 2	2.0	663		694	43	
IgG conjugate 3	3.0	663		694	34	2.47
IgG conjugate 4	4.0	663		694	27	2.23

<sup>1</sup> **Cy5.5** in phosphate buffer pH 7.4 (QY = 23% [1]) was used as the reference.  $\lambda_{Ex.} = 650$  nm.

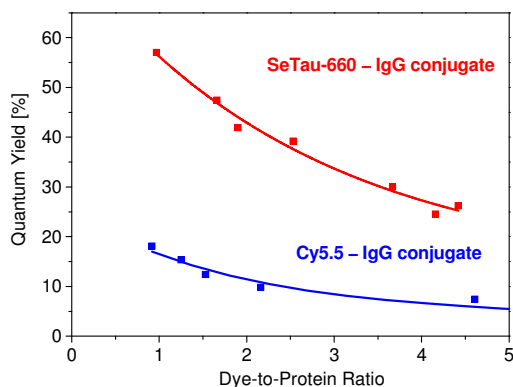
[1] S.R.Mujumdar, R.B.Mujumdar, C.M.Grant, A.S.Waggoner. Cyanine-labeling reagents: sulfobenzindocyanine succinimidyl esters. Bioconjugate Chem. (1996), 7, 356–362.



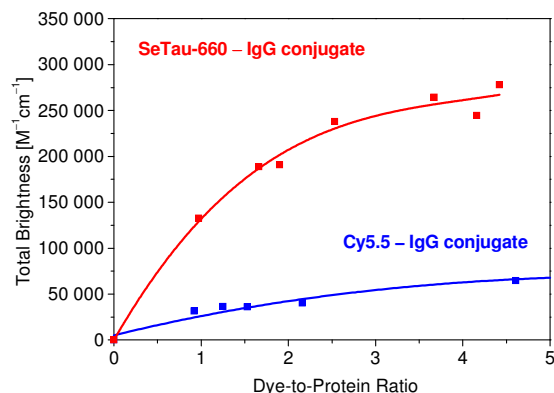
Absorption and emission spectrum of **SeTau-660-NHS** in phosphate buffer (pH 7.4)



Absorption and emission spectrum of a **SeTau-660 — IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 1.0)



Quantum yield vs. dye-to-protein ratio of **SeTau-660 — IgG conjugates** in phosphate buffer (pH 7.4) as compared to **Cy5.5 — IgG conjugates**



Total brightness ( $QY \times \epsilon \times D/P$ ) vs. dye-to-protein ratio (D/P) of **SeTau-660 — IgG conjugates** in phosphate buffer (pH 7.4) of in phosphate buffer (pH 7.4)

<sup>i</sup> V.Buschmann, K.D.Weston, M.Sauer. Spectroscopic study and evaluation of red-absorbing fluorescent dyes. Bioconjugate Chem. (2003), 14, 195–204.