

Product number: K9-4169
Product name: SeTau-670-NHS

General Data

Molecular Mass: 1880.09
1492.36 (protonated form)
Solubility: Water, Alcohol, DMF, DMSO
Insoluble: Chloroform
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 635, 640, and 650-nm diode lasers
- Low quenching tendency at high dye-to-protein ratios compared to other labels e.g. **Cy5.5™**
- Higher brightness ($\Phi. \epsilon = 99,000$) compared to Alexa 680 ($\Phi. \epsilon = 68,800$) or Alexa 660 ($\Phi. \epsilon = 48,800$)
- 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** ($\tau = 1$ ns) and **Alexa 680** ($\tau = 1.2$ ns)
- High 2PACS

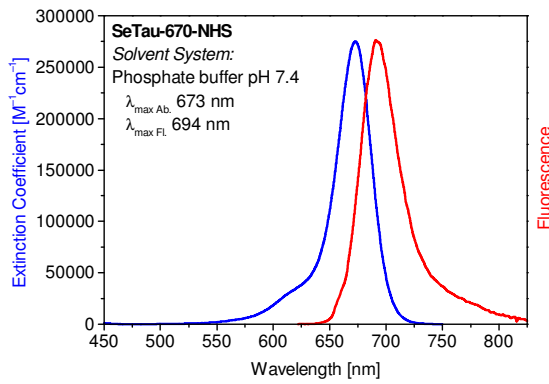
Spectral Data

Solvent System: phosphate buffer pH 7.4

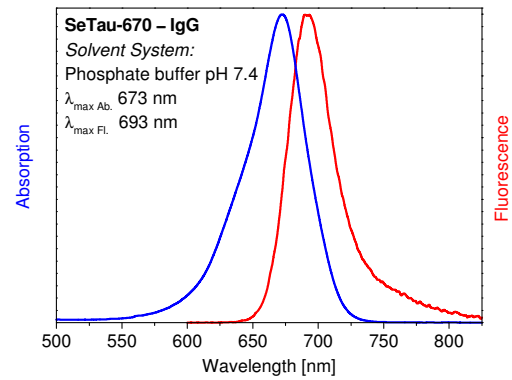
Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Quantum Yield ¹ [%]	Fluorescence Lifetime [ns]
Free dye	—	673	275,000	694	36	1.6
IgG conjugate 1	1.0	673		692	31	-
IgG conjugate 2	2.0	672		692	18	-
IgG conjugate 3	3.0	672		692	15	-
IgG conjugate 4	4.0	672		693	14	1.75

¹ **Cy5.5** in phosphate buffer pH 7.4 (QY = 23% [1]) was used as the reference. $\lambda_{EX.} = 660$ nm.

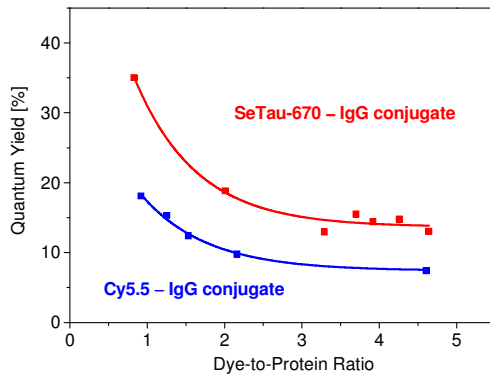
[1] S.R.Mujumdar, R.B.Mujumdar, C.M.Grant, A.S.Waggoner. Cyanine-labeling reagents: sulfobenzindocyanine succinimidyl esters. *Bioconjugate Chem.* (1996), 7, 356–362.



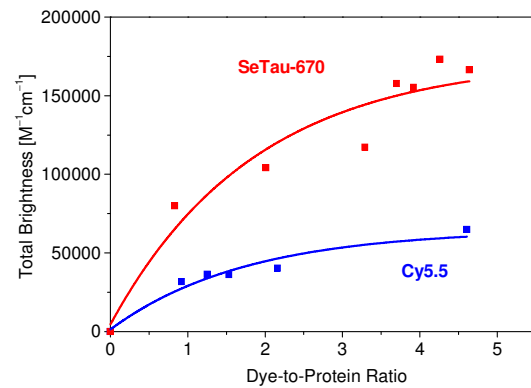
Absorption and emission spectrum of **SeTau-670-NHS** in phosphate buffer (pH 7.4)



Absorption and emission spectrum of a **SeTau-670 – IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 1.0)



Quantum yield vs. dye-to-protein ratio of **SeTau-670 – 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-670 – IgG conjugates** in phosphate buffer (pH 7.4) of in phosphate buffer (pH 7.4)