SETA BioMedicals
Fluorescent Tools for BioMedical Applications
http://www.setabiomedicals.com
e-mail: info@setabiomedicals.com

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** or **Alexa 660**).
- 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
- Much longer fluorescence lifetime compared to **Cy5.5** (2 ns) or **Alexa 660** (0.37 ns) or **Alexa 680** (0.36 ns)
- Extremely bright label: most sensitive organic fluorescent label for proteins or oligos currently on the market for the 647-nm Kr-ion and 670 laser lines: (Φ. ε = 120,000) compared to Alexa 680 (Φ. ε = 68,800) or Alexa 660 (Φ. ε = 48,800)

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 at 25 ºC [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			694	34	2.47
IgG conjugate 4	4.0	663		694	27	2.23

[1] **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.

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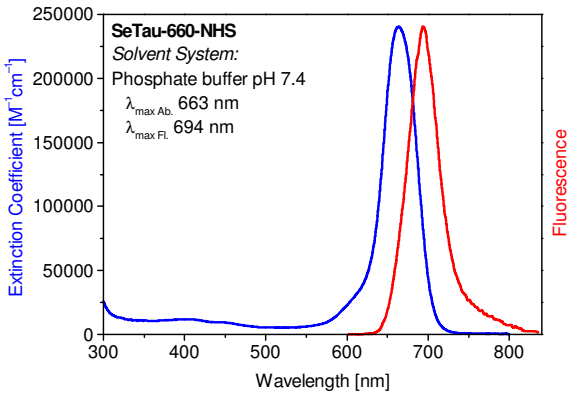
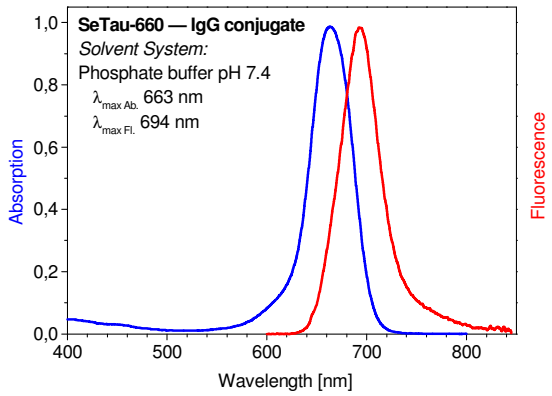
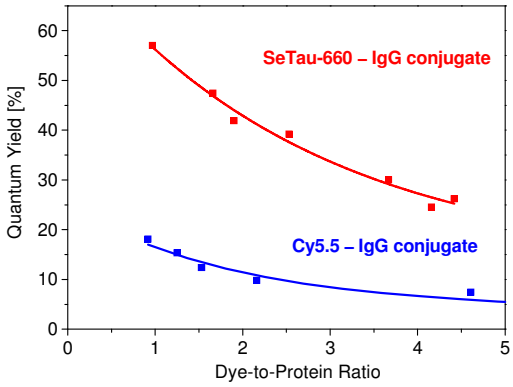


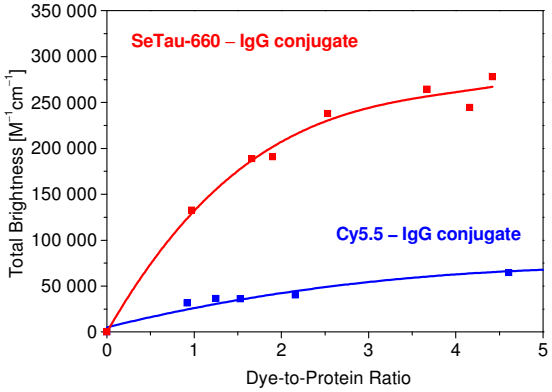
Absorption and emission spectrum
of **SeTau-660-NHS** in phosphate buffer (pH 7.4)



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 × ε × 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)

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