

Product number: K8-5035

Product name: Seta-650-NHS

Not licensed for use in time-resolved FRET application!

General Data

- Molecular Mass:** 1270.60
1012.11 (protonated)
- Solubility:** Water, Alcohol, DMF, DMSO
- Insoluble:** Acetone, Chloroform, Toluene
- Storage:** Store in absence of light, desiccate and refrigerate

Description

- Highly hydrophilic, amine-reactive label containing one NHS-ester group.

Applications

- Covalent labeling of proteins, amino-modified DNA and amino-modified oligonucleotides
- Fluorescence intensity and fluorescence polarization-based applications
- Resonance Energy Transfer (RET)
- Flow Cytometry
- Immunofluorescence
- Gene Expression
- Homogeneous Assays
- Microarrays

Advantages

- Perfectly suited for excitation with the 635-nm and 650-nm diode lasers
- Sensitive; high extinction coefficients and high quantum yields after covalent attachment to biomolecules
- pH-insensitive between pH 3 and pH 10
- Good aqueous solubility; this label does not alter the solubility of the bioconjugate
- High photostability compared to fluorescein, **Atto 647**, **DyLight 650**, **Alexa 647** or **Cy5TM**
- Low molecular weight — **Seta** dyes do not add substantial mass to the conjugates
- Ideal for non-radioactive labeling of proteins, amino-modified oligonucleotides and amino-modified lipids

Spectral Data

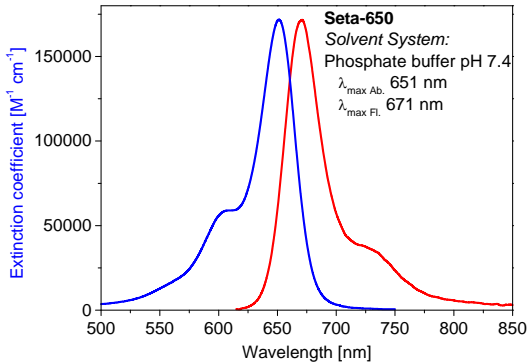
Solvent System: phosphate buffer pH 7.4

Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Quantum Yield ¹ [%]
Free dye	—	651	200,000	671	28
IgG conjugate 1	1	654		673	37
IgG conjugate 2	2	654		673	32
IgG conjugate 3	3	654		673	27

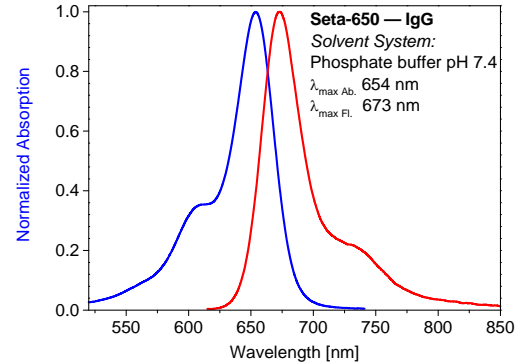
¹ Cy5 in phosphate buffer pH 7.4 (QY = 27% [1]) was used as a reference. $\lambda_{Ex.} = 610$ nm.

[1] R.B. Mujumdar, L.A. Ernst, S.R. Mujumdar, C.J. Lewis, A.S. Waggoner. Cyanine dye labeling reagents: sulfoindocyanine succinimidyl esters. Bioconj. Chem. (1993), 4, 105–111.

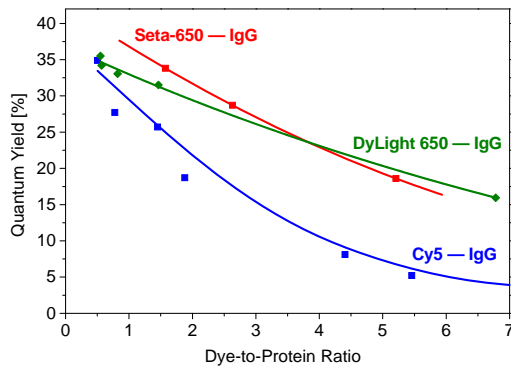
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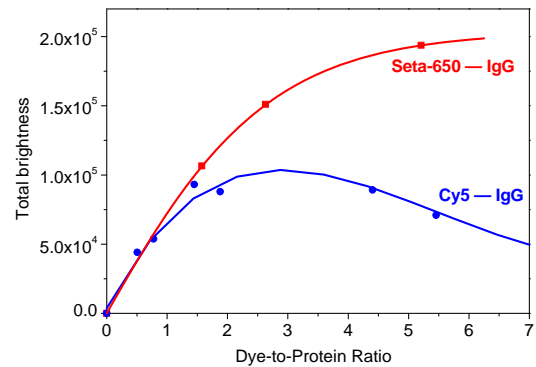
Absorption and emission spectrum of **Seta-650** in phosphate buffer (pH 7.4)



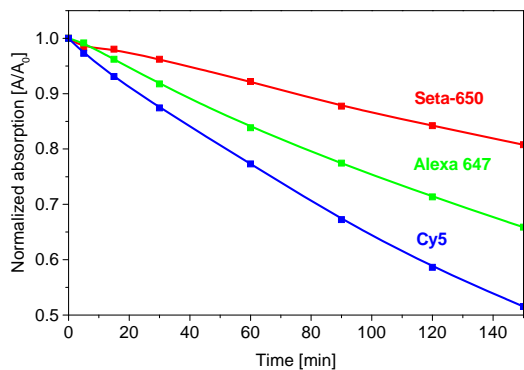
Absorption and emission spectrum of a **Seta-650 — IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 1.6)



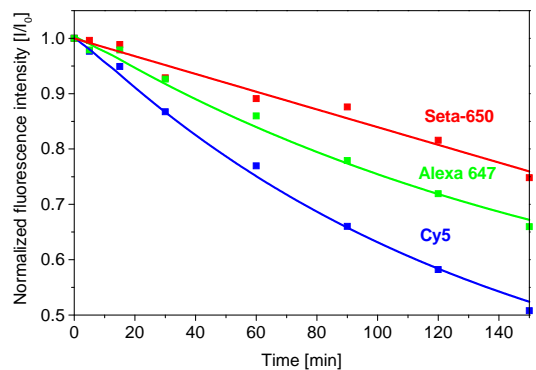
Quantum yield vs. dye-to-protein ratio of **Seta-650 — IgG conjugates** in phosphate buffer (pH 7.4)



Total brightness ($QY \times \epsilon \times D/P$) vs. dye-to-protein ratio (D/P) of **Seta-650 — IgG conjugates** in phosphate buffer (pH 7.4)



Decrease of the long-wavelength absorption band of **Seta-650** compared to **Cy5** and **Alexa 647**



Decrease of the fluorescence intensity of **Seta-650** compared to **Cy5** and **Alexa 647**