

Product number: K8-1644

Product name: Seta-635-mono-NHS

General Data

Molecular Mass: 960.10 (protonated form)

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
- Assessment of protein structure

Advantages

- Perfectly suited for excitation with the 635 nm diode lasers
- Sensitive; high extinction coefficients and high quantum yields after covalent attachment to biomolecules
- Quantum yield is highly increased after covalent and non-covalent association with proteins
- pH-insensitive between pH 3 and pH 10
- Good aqueous solubility; this label does not alter the solubility of the bioconjugate
- High photostability; e.g. compared to fluorescein or **Cy5**TM
- 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

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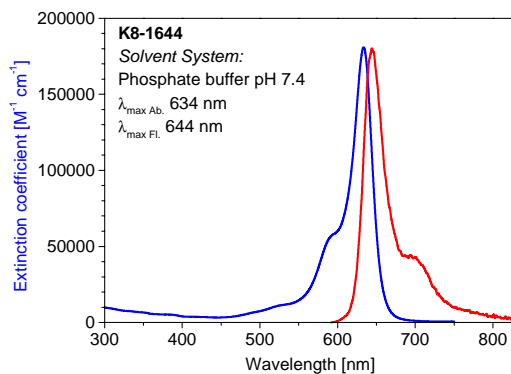
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Spectral Data

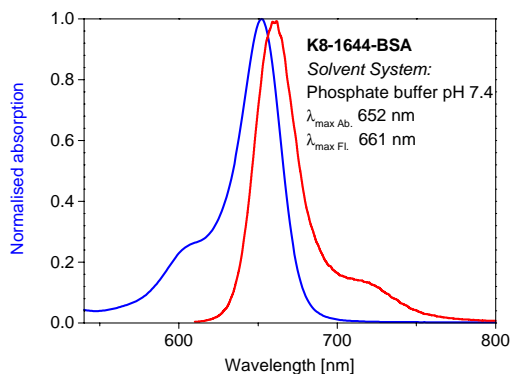
Solvent System: phosphate buffer pH 7.4

Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [$M^{-1}.cm^{-1}$]	Fluorescence* max. [nm]	Quantum Yield [%]
Free dye	—	634	181,000	644	4
BSA conjugate 1	1.0	650		660	56
BSA conjugate 2	2.0	648		659	46
BSA conjugate 3	3.0	647		658	39
BSA conjugate 4	4.0	647		658	35
IgG conjugate 1	1.0	638		651	15
IgG conjugate 2	2.0	638		651	12
IgG conjugate 3	3.0	638		651	10
IgG conjugate 4	4.0	638		651	8

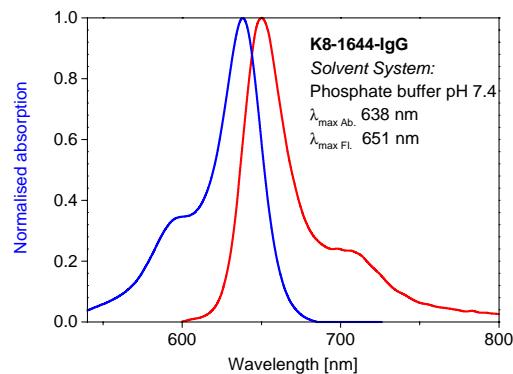
* Excitation at 600 nm



Absorption and emission spectrum of **K8-1644** in phosphate buffer (pH 7.4)



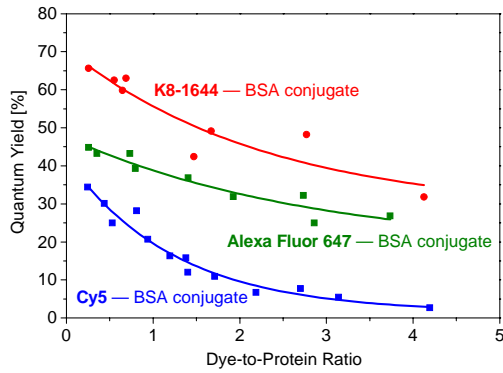
Absorption and emission spectrum of **K8-1644 — BSA conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 0.5)



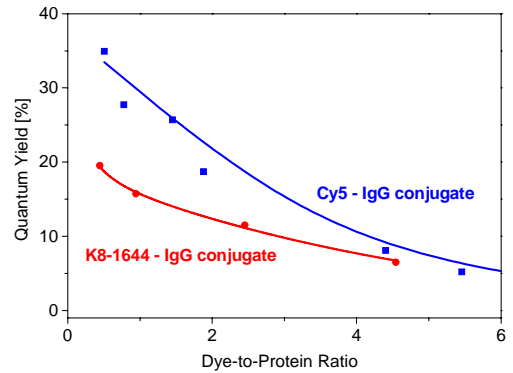
Absorption and emission spectrum of **K8-1644 — IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 1.0)

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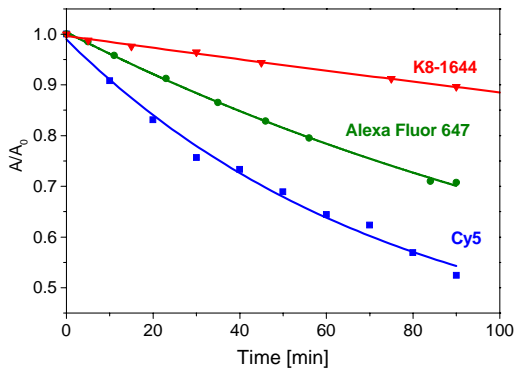
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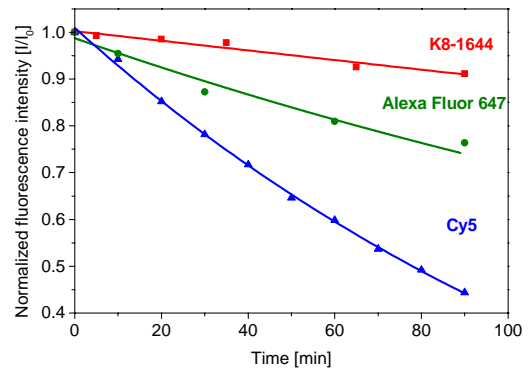
Quantum Yield vs Dye-to-protein Ratio of **K8-1644 — BSA conjugates** as compared to **Cy5** and **Alexa Fluor 647** in phosphate buffer (pH 7.4)



Quantum Yield vs Dye-to-protein Ratio of **K8-1644 — IgG conjugates** as compared to **Cy5** in phosphate buffer (pH 7.4)



Decrease in relative absorption [A/A₀] of **K8-1644** compared to **Cy5** and **Alexa Fluor 647** upon exposure to 150 W lamp



Decrease in relative intensity [I/I₀] of **K8-1644** compared to **Cy5** and **Alexa Fluor 647** upon exposure to 150 W lamp