

General Data

- Molecular Mass:** 1223.33 (protonated form)
Solubility: Alcohol, DMF, DMSO, Water
Insoluble: Acetone, Chloroform, Toluene
Storage: Store in absence of light, desiccated and refrigerate

Description

Highly hydrophilic, amine-reactive fluorescent label containing two reactive NHS-ester groups.

Applications

- Covalent labeling of proteins, amino-modified DNA and amino-modified oligonucleotides
- Fluorescence Lifetime Label — this label exhibits a distinct lifetime change upon binding to a biomolecule
- Resonance Energy Transfer (RET)
- Flow Cytometry
- Immunofluorescence
- Gene Expression
- Homogeneous Assays
- Assessment of protein structure

Advantages

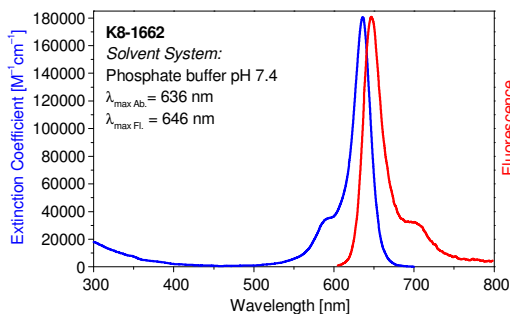
- Perfectly suited for excitation with the 635-nm diode lasers.
- Sensitive; high extinction coefficients and high quantum yields up to 70% after covalent attachment to proteins
- Low non-specific binding
- pH-insensitive between pH 3 and pH 10
- Good aqueous solubility; this label does not alter the solubility of the protein conjugate
- High photostability; e.g. compared to fluorescein, **Cy5** or **Alexa Fluor 647**.
- Low molecular weight — **Seta** dyes do not add substantial mass to the conjugates
- Ideal for non-radioactive labeling of proteins, amino-modified DNA probes and amino-modified oligonucleotides

Spectral Data

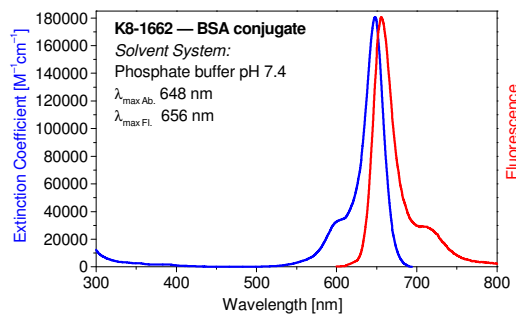
Solvent System: phosphate buffer, pH 7.4

Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [M ⁻¹ .cm ⁻¹]	Fluorescence* max. [nm]	Quantum Yield [%]	Luminescence Lifetime [ns]			Chi Sq.
						τ_1	τ_2	Mean τ	
Free dye	—	636	181,000	646	13	0.4 (58%)	1.0 (42%)	0.7	0.53
BSA conjugate 1	0.5	648		656	66				
BSA conjugate 2	1.0	648		656	62	0.2 (2%)	3.1 (98%)	3.0	1.06
BSA conjugate 3	2.0	646		655	57	0.9 (9%)	2.8 (91%)	2.7	1.73
IgG conjugate 1	1.0	640		650	30				
IgG conjugate 1	3.0	640		650	25	0.5 (30%)	1.6 (70%)	1.2	1.25
IgG conjugate 2	4.0	640		650	23				

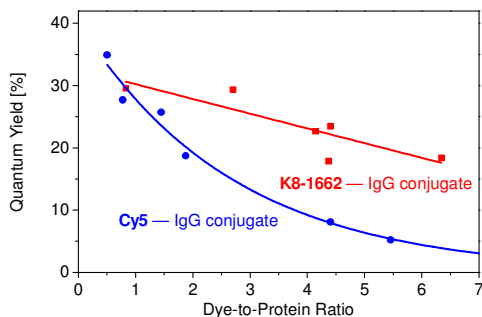
* Excitation at 620 nm



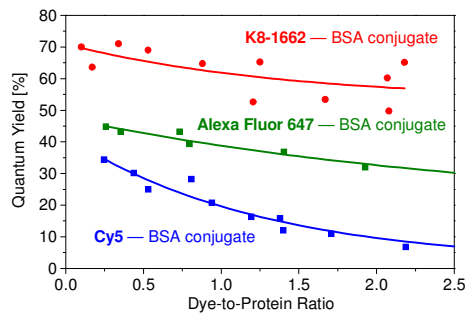
Absorption and emission spectra of **K8-1662** in phosphate buffer (pH 7.4)



Absorption and emission spectra of **K8-1662 — BSA conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 1)



Quantum Yield vs. Dye-to-protein Ratio of **K8-1662 — IgG conjugates** as compared to **Cy5** in phosphate buffer (pH 7.4)

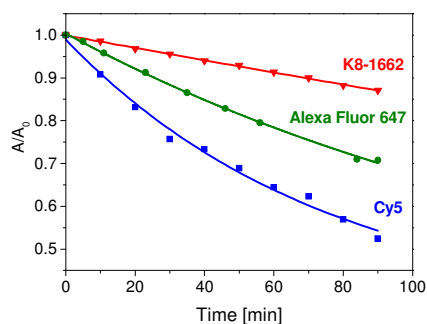


Quantum Yield vs Dye-to-protein Ratio of **K8-1662 — BSA conjugates** as compared to **Cy5** and **Alexa Fluor 647** in phosphate buffer (pH 7.4)

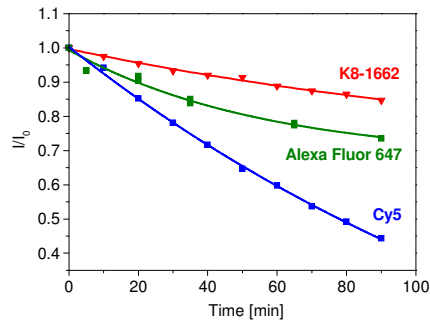
Photostability

when exposed to light from a halogenic lamp (150 W)

Solvent System: phosphate buffer pH 7.4



Decay of the long-wavelength absorption band of **K8-1662** as compared to **Cy5** and **Alexa Fluor 647**



Decay of the fluorescence intensity of **K8-1662** as compared to **Cy5** and **Alexa Fluor 647**