

Product number: K8-1667

Product name: Seta-635-pH-di-NHS

General Data

- Molecular Mass:** 950.99 (protonated form)
Solubility: Water, Alcohol, DMF, DMSO
Insoluble: Acetone, Chloroform, Toluene
Storage: Store in absence of light, desiccated and refrigerate

Description

- Amine-reactive, pH-sensitive fluorescent label containing two reactive NHS-ester groups and pKa = 10.2 (free dye).

Applications

- Covalent labeling of proteins, amino-modified DNA, amino-modified oligonucleotides and other small molecules.
- Fluorescence Lifetime Label — this label exhibits a distinct lifetime change upon binding to a biomolecule.

Advantages

- Perfectly suited for excitation with the 635-nm diode laser
- Sensitive; high extinction coefficients and high quantum yields up to 30% after covalent attachment to proteins
- Low non-specific binding
- Good aqueous solubility; this label does not alter the solubility of the protein conjugate
- High photostability
- Low molecular weight — **Seta** dyes do not add substantial mass to the conjugates
- Ideal for non-radioactive labeling of proteins, amino-modified DNA probes, amino-modified oligonucleotides and other small molecules

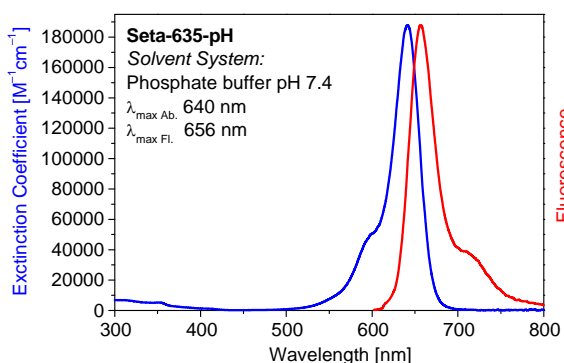
Spectral Data

Sample	Dye-to-protein Ratio (D/P)	Protonated form (phosphate buffer, pH < 9)				Deprotonated form (pH > 11)	pK _a	pH-Range
		Absorption max. [nm]	Extinction Coefficient [M ⁻¹ .cm ⁻¹]	Fluorescence max. [nm]	Quantum Yield ¹ [%]	Absorption max. [nm]		
Free dye	—	640	188,000	656	33	519	10.2	9.2–11.8
BSA conjugate 1	0.5	655		670	27		—	
BSA conjugate 2	1.0	655		670	14		—	
BSA conjugate 3	1.5	655		670	5		—	
IgG conjugate 1	1.0	646		663	21		—	
IgG conjugate 2	2.0	646		663	16		—	

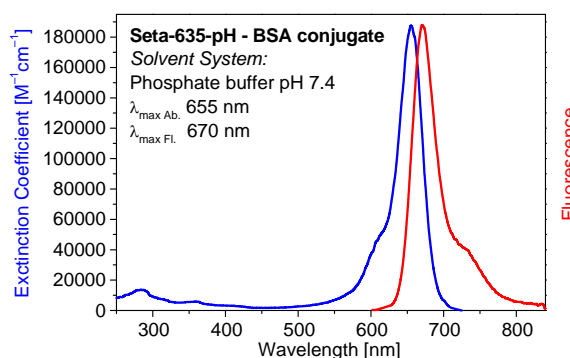
¹ Excitation at 620 nm

Fluorescence Lifetime

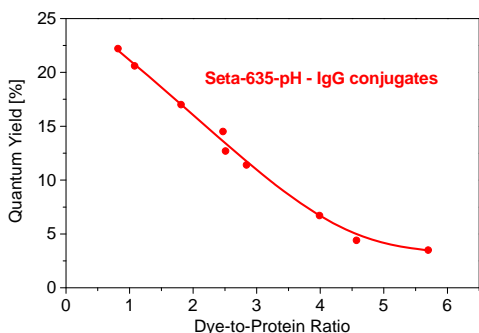
Dye	D/P	τ_1 [ns]	f_1	τ_2 [ns]	f_2	χ^2	τ_{mean} [ns]
Free dye	—	1.80	1.00	—	—	1.60	1.80
BSA conjugate	2.0	1.87	0.67	0.34	0.33	0.94	1.37



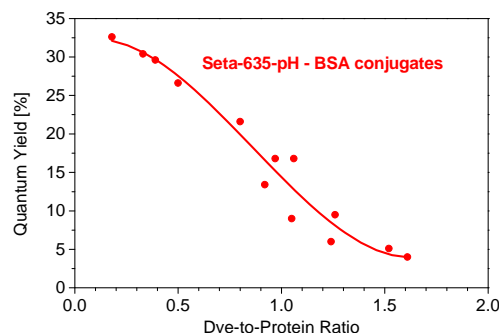
Absorption and fluorescence spectra of **Seta-635-pH** in phosphate buffer (pH 7.4)



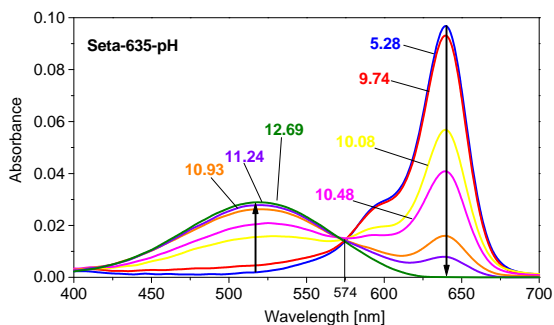
Absorption and fluorescence spectra of **Seta-635-pH — BSA conjugate** in phosphate buffer (pH 7.4)



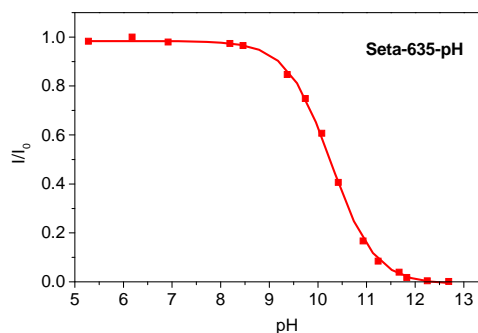
Quantum Yield vs Dye-to-protein Ratio of **Seta-635-pH — IgG conjugates**



Quantum Yield vs Dye-to-protein Ratio of **Seta-635-pH — BSA conjugates**



Absorption spectrum of **Seta-635-pH** vs. pH



Normalized fluorescence intensity of **Seta-635-pH** vs. pH values (pKa 10.2)