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

Product number: K8-1367
Product name: Seta-670-pH-di-NHS

General Data

Molecular Mass: 999.03 (protonated form)

Solubility: Water, Alcohol, DMF, DMSO

Insoluble: Acetone, Chloroform, Toluene

Storage: Store out of light, desiccated and refrigerate

Description

- Amine-reactive, pH-sensitive fluorescent label containing two reactive NHS-ester groups and pKa in the physiological pH range.

Applications

- pH-sensing 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).
- Immunofluorescence.
- Homogeneous Assays.
- Assessment of protein structure.

Advantages

- Perfectly suited for excitation with the 670-nm, 650-nm, 635-nm, 404-nm, and 370-nm diode lasers and LEDs.
- Sensitive; high extinction coefficients and high quantum yields up to 20% after covalent attachment to proteins.
- Low non-specific binding.
- pH-sensitive between pH 7 and pH 11, and pH-insensitive between pH 3 and pH 7.
- Good aqueous solubility; this label does not alter the solubility of the protein conjugate.
- 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

Sample	Dye-to-protein Ratio	Protonated form (phosphate buffer, pH < 7.4)				Deprotonated form	pK_a	pH-Range
		Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Quantum Yield[1] [%]	Absorption max. [nm]		
Free dye	—	672	93,000	694	19	535	9.6	7.6–11.4
IgG conjugate	1.0	684		703	7	—		
BSA conjugate 1	0.2	693		712	20	—		
BSA conjugate 2	1.0	693		712	8	—		

[1] Excitation at 630 nm

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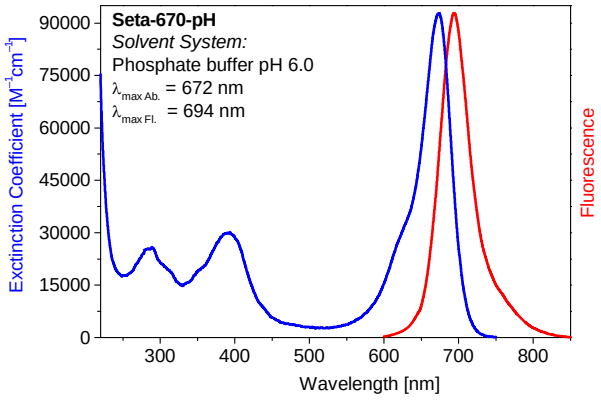
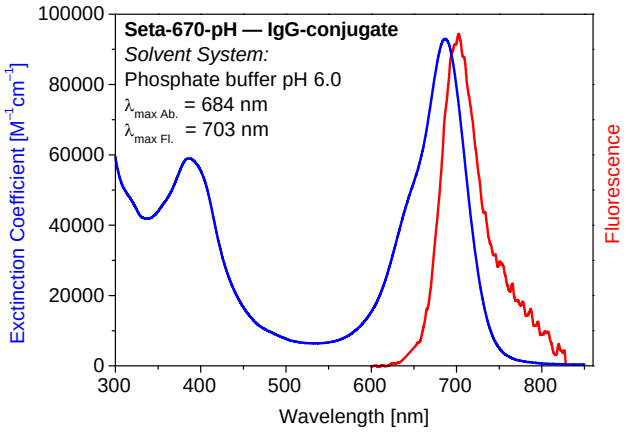
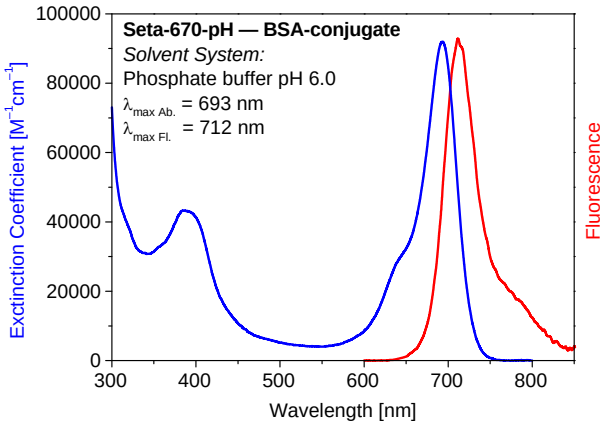


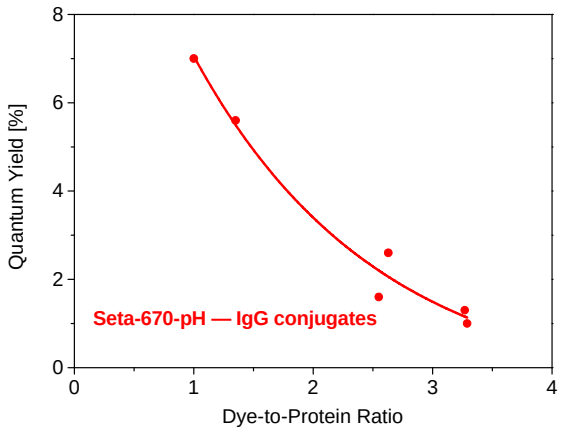
Absorption and fluorescence spectra of **Seta-670-pH** in phosphate buffer (pH 7.4)



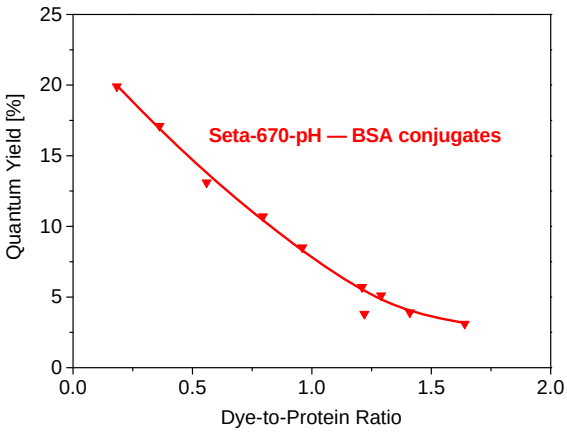
Absorption and fluorescence spectra
of **Seta-670-pH — IgG conjugate**
in phosphate buffer (pH 6.0)



Absorption and fluorescence spectra
of **Seta-670-pH — BSA conjugate**
in phosphate buffer (pH 6.0)



Quantum Yield *vs.* Dye-to-protein Ratio
of **Seta-670-pH — IgG conjugates**
in phosphate buffer (pH 6.0)



Quantum Yield *vs.* Dye-to-protein Ratio
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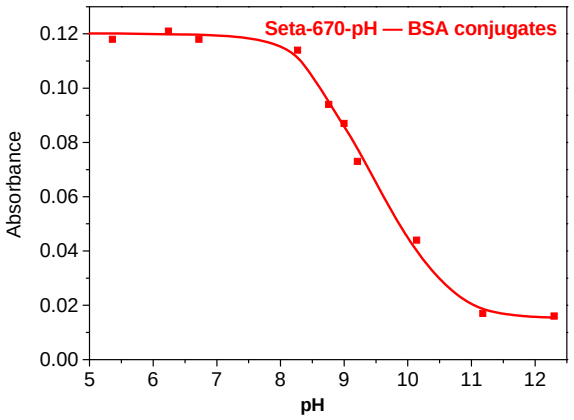
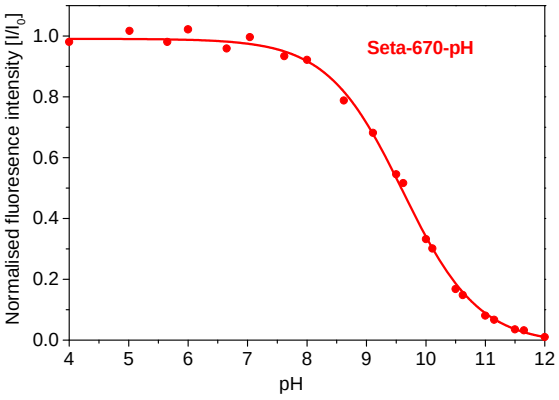


Dependence of absorbance at 693 nm of **Seta-670-pH — BSA conjugate** *vs.* pH



Fluorescence intensity of **Seta-670-pH** *vs.* pH (λ_{exc} 630 nm)