

**Product number: K4-215**

**Product name: Seta-400-NHS**

## General Data

**Molecular Mass:** 544.39

**Solubility:** Water, Alcohol, DMF, DMSO

**Insoluble:** Benzene, Hexane

**Storage:** Store in absence of light, desiccated and refrigerate

## Description

Positively charged, water-soluble amine-reactive label containing one NHS-ester group with extremely large Stokes shift

## Applications

- Covalent labeling of proteins, amino-modified DNA and amino-modified oligonucleotides
- Resonance Energy Transfer (RET)
- Flow Cytometry
- Immunofluorescence
- Gene Expression
- Homogeneous Assays
- Assessment of protein structure

## Advantages

- Perfectly suited for excitation with 370-nm, 380-nm and 405-nm diode lasers
- **Extremely large Stokes' shift of over 170 nm**
- Low molecular weight — **Seta** dyes do not add substantial mass to the conjugates
- Soluble in aqueous buffers
- Ideal for non-radioactive labeling of proteins, amino-modified DNA probes and amino-modified oligonucleotides

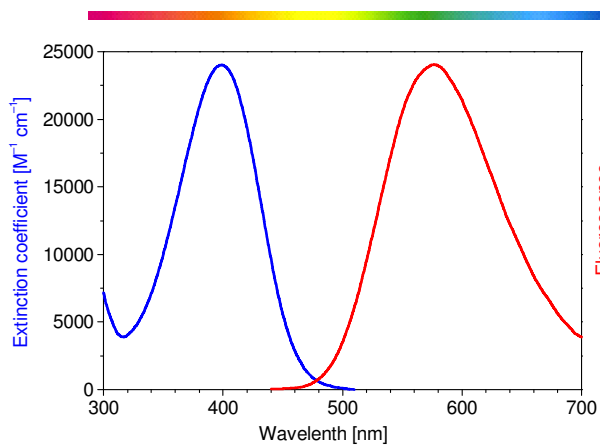
## Spectral Data

**Solvent System:** phosphate buffer (pH 7.4)

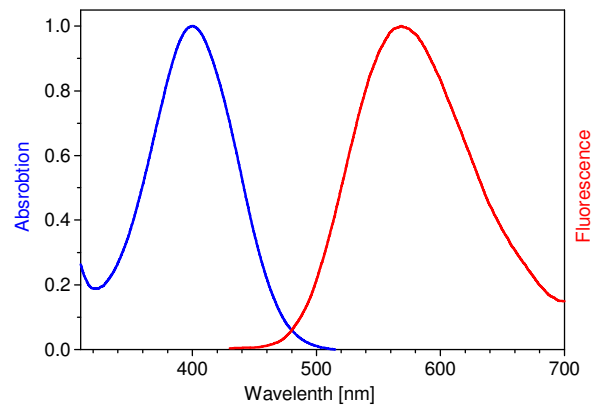
Sample	Dye-to-protein Ratio (D/P)	Absorption max. [nm]	Extinction Coefficient [M <sup>-1</sup> cm <sup>-1</sup> ]	Fluorescence max. [nm]	Quantum Yield <sup>1</sup> [%]
Free dye	—	399	24,000	576	34
IgG conjugate 1	3.0	401		569	19
IgG conjugate 2	5.0	401		569	13
IgG conjugate 3	7.0	401		569	9
BSA conjugate 1	3.0	403		558	19
BSA conjugate 2	5.0	403		558	17

<sup>1</sup> Quinine in 0.1 M H<sub>2</sub>SO (QY = 54.6% [1]) was used as the reference. λ<sub>Ex.</sub> = 355 nm.

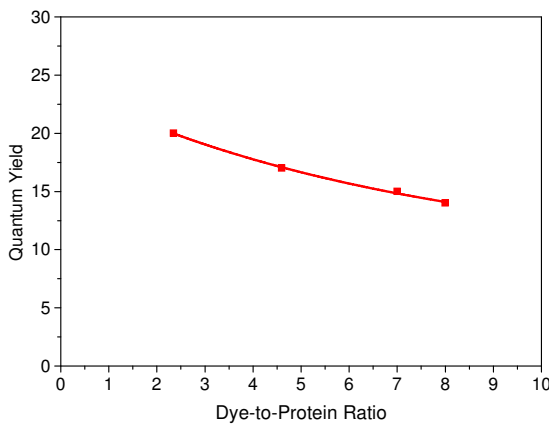
[1] A.M.Brouwer (2011) Standards for photoluminescence quantum yield measurements in solution (IUPAC Technical Report). Pure Appl. Chem., Vol. 83, No. 12, pp. 2213–2228.



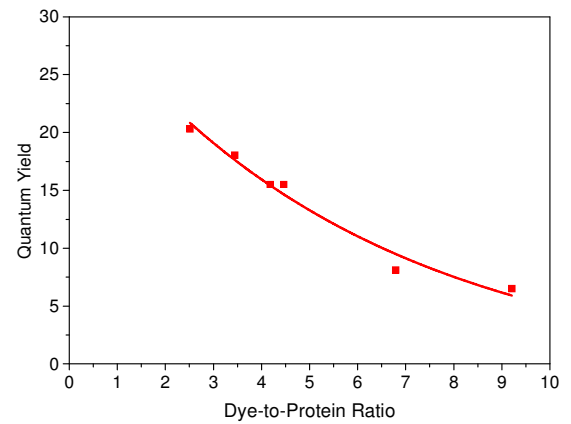
Absorption and emission spectra of **Seta-400-NHS** in water



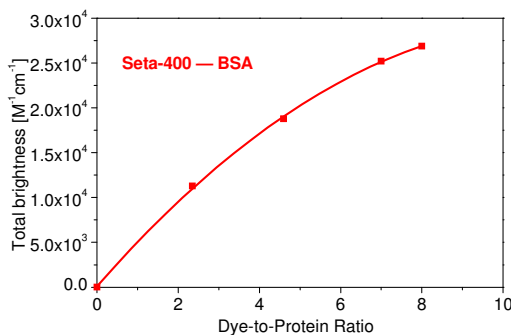
Absorption and emission spectrum of a **Seta-400-IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 4.0)



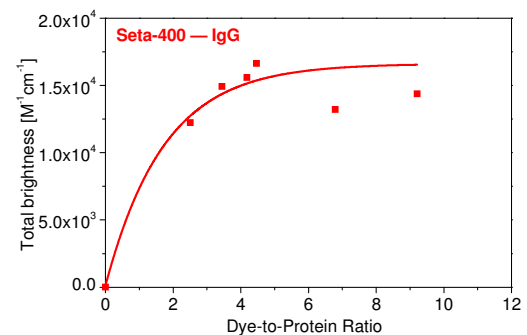
Quantum yield vs. dye-to-protein ratio of **Seta-400-BSA conjugates** in phosphate buffer (pH 7.4)



Quantum yield vs. dye-to-protein ratio of **Seta-400-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-400-BSA conjugates** in phosphate buffer (pH 7.4)



Total brightness ( $QY \times \epsilon \times D/P$ ) vs. dye-to-protein ratio (D/P) of **Seta-400-IgG conjugates** in phosphate buffer (pH 7.4)