

**Product number: K8-1663**

**Product name: Seta-633-mono-NHS**

## General Data

- Molecular Mass:** 1012.11 (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. A **brighter** and **more photostable** replacement for **Alexa 633**, with a much **higher extinction coefficient** ( $\epsilon = 250,000$ ) and **brightness** after labeling to proteins.

## 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
- Microarrays

## Advantages

- Perfectly suited for excitation with the 633 or 635 nm diode lasers
- Sensitive; high extinction coefficients and quantum yields highly increase after covalent attachment to biomolecules
- 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<sup>TM</sup>**
- 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

## Spectral Data

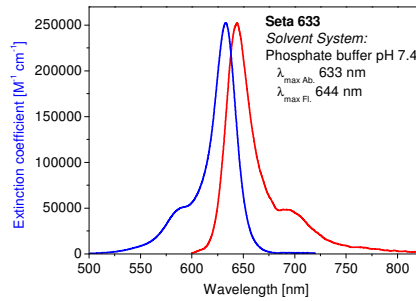
**Solvent System:** phosphate buffer pH 7.4

Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [ $M^{-1}\cdot cm^{-1}$ ]	Fluorescence* max. [nm]	Quantum Yield [%]
Free dye	—	633	250,000	644	7
BSA conjugate 1	1.0	646		656	51
BSA conjugate 2	2.0	647		656	43
BSA conjugate 3	3.0	647		656	37
BSA conjugate 4	4.0	647		656	32
IgG conjugate 1	1.0	637		647	26
IgG conjugate 2	2.0	637		647	23
IgG conjugate 3	3.0	637		647	20
IgG conjugate 4	7.0	637		647	15

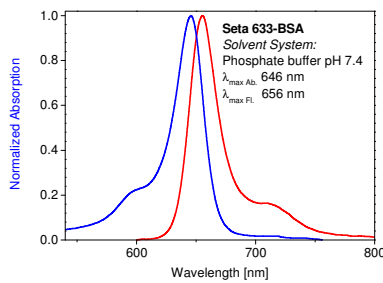
\* Excitation at 600 nm

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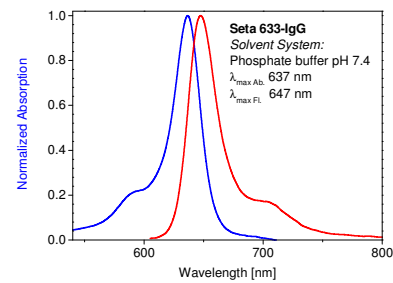
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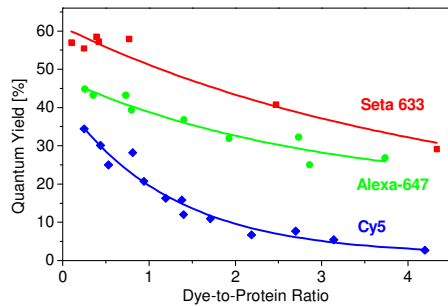
Absorption and emission spectrum of **Seta 633** in phosphate buffer (pH 7.4)



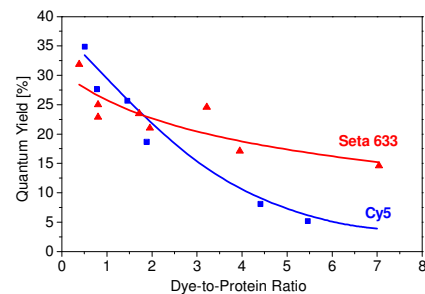
Absorption and emission spectrum of a **Seta 633—BSA conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 1.7)



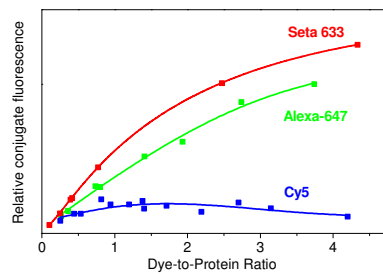
Absorption and emission spectrum of a **Seta 633—IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio 0.8)



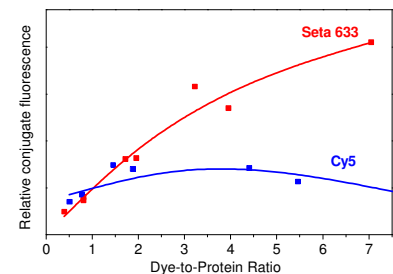
Quantum yield vs. dye-to-protein ratio of **Seta 633—BSA conjugates** in phosphate buffer (pH 7.4)



Quantum yield vs. dye-to-protein ratio of **Seta 633—IgG conjugates** in phosphate buffer (pH 7.4)



Relative fluorescence (Q.Y x D/P ratio) of **Seta 633—BSA conjugates** in phosphate buffer (pH 7.4) as compared to Alexa 647 and Cy5 conjugates



Relative fluorescence (Q.Y x D/P ratio) of **Seta 633—IgG conjugates** in phosphate buffer (pH 7.4) as compared to Alexa 647 and Cy5 conjugates

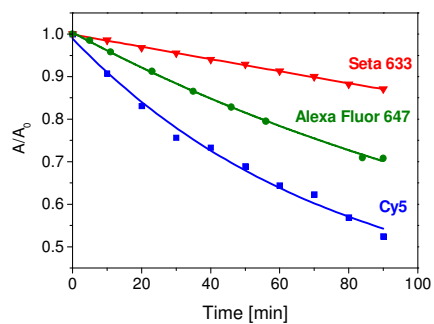
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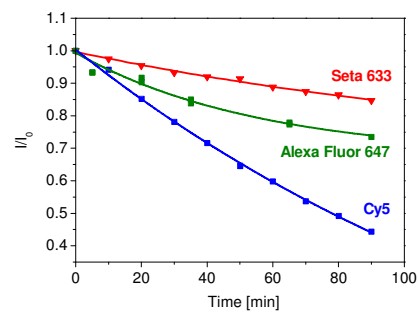
### Photostability

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

**Solvent System:** phosphate buffer pH 7.4



Relative decrease of the absorption maximum of Seta 633 as compared to Cy5 and Alexa Fluor 647



Decrease of the fluorescence intensity of Seta 633 as compared to Cy5 and Alexa Fluor 647