

**Product number: K8-1388**

**Product name: Seta-700-di-NHS**

## General Data

- Molecular Mass:** 1287.33 (protonated form)  
**Solubility:** Water, Alcohol, DMF, DMSO  
**Insoluble:** Acetone, Chloroform, Toluene  
**Storage:** Store in absence of light, desiccated and refrigerate

## Description

- Bright, water soluble, amine-reactive fluorescent label containing two reactive NHS-ester groups with. **Quantum yields are up to 25%** when labeled to IgG.

## 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

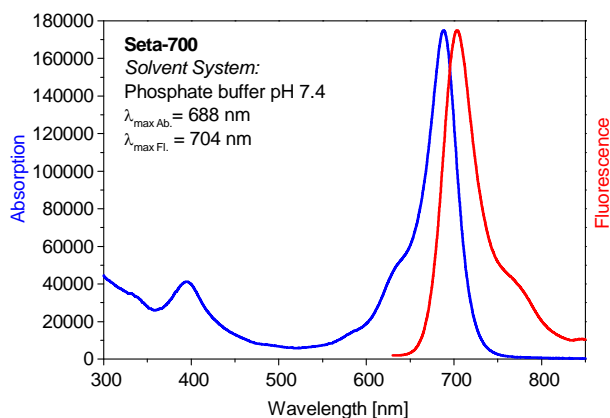
- Perfectly suited for excitation with the 380, 405, 650, 680, and 700-nm diode lasers, and UV light
- Q.Y.s up to 25%** upon covalent attachment to IgGpH-insensitive between pH 4 and pH 9
- Good aqueous solubility; this label does not alter the solubility of the protein conjugate
- High photostability; e.g. compared to fluorescein, **Cy5<sup>TM</sup>**, **Cy7<sup>TM</sup>** or **Alexa Fluor<sup>TM</sup> 700**
- 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

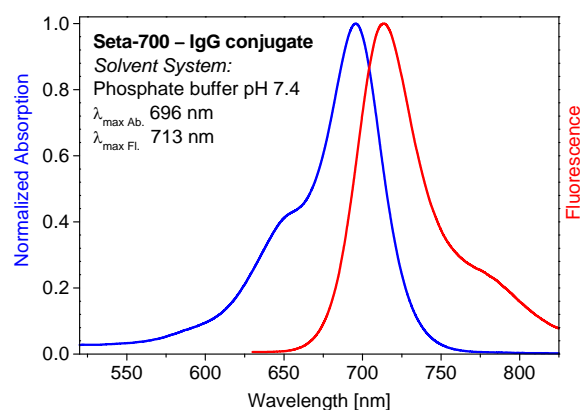
Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [M <sup>-1</sup> cm <sup>-1</sup> ]	Fluorescence max. [nm]	Quantum Yield <sup>1</sup> [%]
Seta-700 in phosphate buffer pH 7.4	—	688 394	180,000 41,000	704	11
Seta-700—IgG in phosphate buffer pH 7.4	1	696		713	23
Seta-700—IgG in phosphate buffer pH 7.4	2	696		713	16
Seta-700—IgG in phosphate buffer pH 7.4	3	696		713	11

<sup>1</sup> **Cy7** in PBS (QY = 13% [1]) was used as a reference.  $\lambda_{\text{ex.}} = 680 \text{ nm}$ .

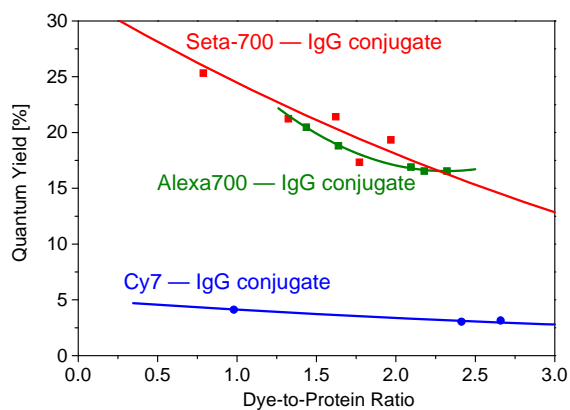
[1] Texier I, Goutayer M, Da Silva A, Guyon L, Djaker N, Jossierand V, Neumann E, Bibette J, Vinet F (2009) Cyanine-loaded lipid nanoparticles for improved in vivo fluorescence imaging. J Biomed. Opt. 14:054005



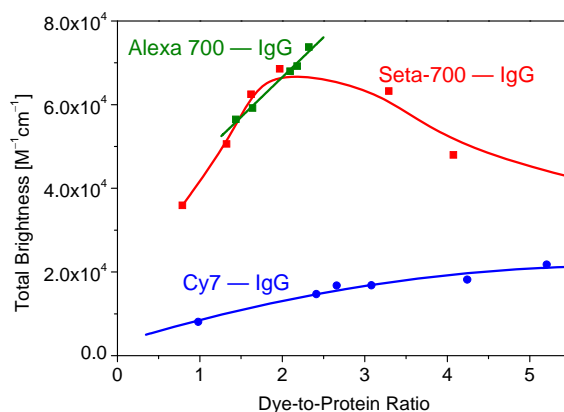
Absorption and emission spectrum of **Seta-700** in phosphate buffer (pH 7.4)



Absorption and emission spectrum of **Seta-700–IgG** in phosphate buffer (pH 7.4, dye-to-protein ratio 2)



Quantum yield vs. dye-to-protein ratio for **Seta-700–IgG conjugates** in phosphate buffer (pH 7.4)



Total brightness ( $\text{QY} \times \epsilon \times \text{D/P}$ ) vs. dye-to-protein ratio (D/P) of **Seta-700–IgG conjugates** in phosphate buffer (pH 7.4)