Product number: **K8-5075**  
Product name: **Seta-680-NHS**

### General Data

**Molecular Mass:** 1272.36  
**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.

### 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 635 nm and 670 nm diode lasers  
- Sensitive; high extinction coefficients and high quantum yields after covalent attachment to biomolecules  
- Quantum yield is highly increased after covalent and non-covalent association with proteins  
- 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 Cy5.5™  
- 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

<table>
<thead>
<tr>
<th>Sample</th>
<th>Dye-to-protein Ratio</th>
<th>Absorption max. [nm]</th>
<th>Extinction Coefficient [M⁻¹·cm⁻¹]</th>
<th>Fluorescence max. [nm]</th>
<th>Quantum Yield [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free dye</td>
<td>—</td>
<td>678</td>
<td>200,000</td>
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<tr>
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<td>IgG conjugate 3</td>
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<td></td>
<td>701</td>
<td>21</td>
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</tbody>
</table>

¹ Excitation at 620 nm
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Absorption and emission spectrum of **Seta-680** in phosphate buffer (pH 7.4)

Absorption and emission spectrum of a **Seta-680 — IgG conjugate** in phosphate buffer (pH 7.4, Dye-to-protein ratio ~1.4)

Quantum yield vs. dye-protein ratio of **Seta-680 — IgG conjugates** in phosphate buffer (pH 7.4)