

Product number: K8-1320
Product name: Square-670-di-NHS

General Data

- Molecular Mass:** 1027.08 (protonated form)
Solubility: Water, Alcohol, DMF, DMSO
Insoluble: Acetone, Chloroform, Toluene
Storage: Store out of light, desiccated and refrigerate

Description

Amine-reactive fluorescent label containing two reactive NHS-ester groups.

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 404, 635 and 670-nm diode laser
- Sensitive; high extinction coefficients and high quantum yields up to 35% after covalent attachment to proteins
- pH-insensitive between pH 3 and pH 10
- Good aqueous solubility; this label does not alter the solubility of the protein conjugate
- High photostability; e.g. compared to fluorescein or Cy5™
- Low molecular weight — **Square** 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

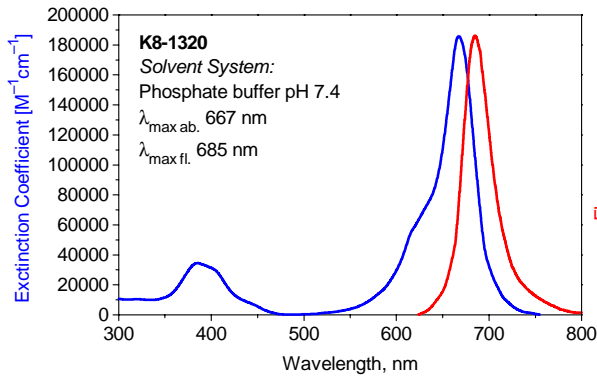
Solvent System: phosphate buffer, pH 7.4

Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [M ⁻¹ ·cm ⁻¹]	Fluorescence* max. [nm]	Quantum Yield [%]	Fluorescence Lifetime [ns]
Free dye	—	667	188,000	685	7	0.84
BSA conjugate 1	0.5	682		701	34	
BSA conjugate 2	0.96	682		701	24	3.26
BSA conjugate 3	1.0	682		701	23	
BSA conjugate 4	1.5	682		701	15	

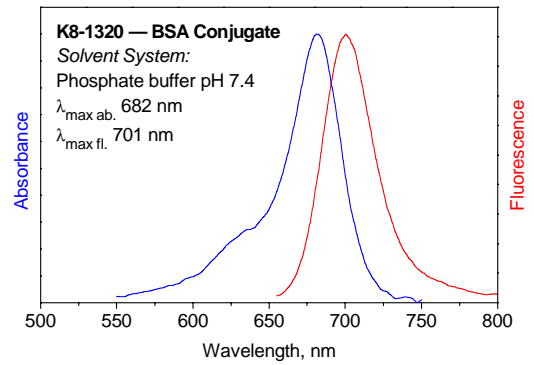
* Excitation at 620 nm

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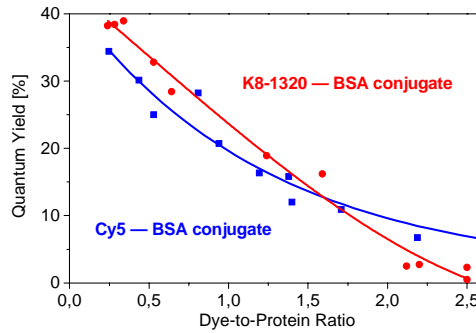
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Absorption and fluorescence spectra of **K8-1320** in phosphate buffer (pH 7.4)



Absorption and fluorescence spectra of **K8-1320 — BSA conjugate** in phosphate buffer (pH 7.4)

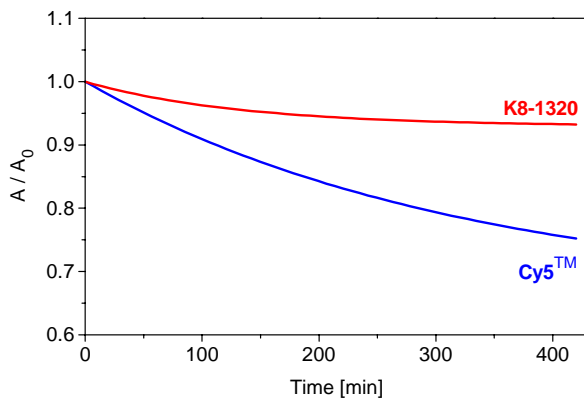


Quantum Yield vs Dye-to-protein Ratio of **K8-1320 — BSA conjugates** in phosphate buffer (pH 7.4)

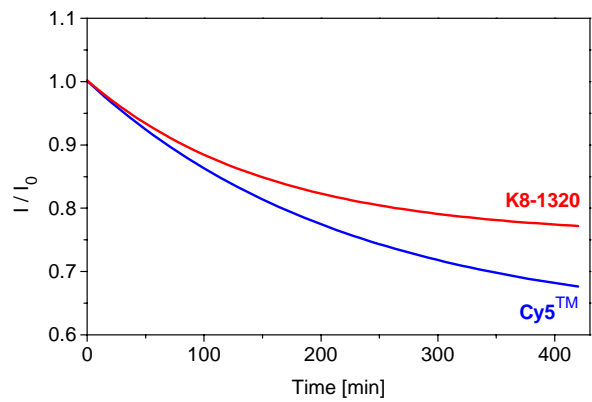
Photostability

when exposed to light from a lamp (200 W)

Solvent System: phosphate buffer pH 7.4



Decay of the long-wavelength absorption band of **K8-1320** as compared to **Cy5™**



Decay of the fluorescence intensity of **K8-1320** as compared to **Cy5™**