SETA BioMedicals
Fluorescent Tools for BioMedical Applications
http://www.setabiomedicals.com
e-mail: info@setabiomedicals.com

Product number: K9-3152
Product name: SeTau-488-NHS

General Data

Molecular Mass: 1642.73
1384.24 (protonated form)

Solubility: Water, Alcohol, DMF, DMSO, Acetonitrile

Insoluble: Hexane

Storage: Store in absence of light, desiccate and refrigerate

Description

- Large Stokes shift, highly stable and bright, water-soluble, amine-reactive label containing one NHS-ester group.
- Ideal for labeling antibodies, proteins, and other amino-modified biomolecules, including oligonucleotides.
- Brighter and more photostable replacement for Cy3 and fluorescein-type labels such as Alexa 488 and Alexa 555.
- Perfectly suited for excitation with 480–490-nm light sources.

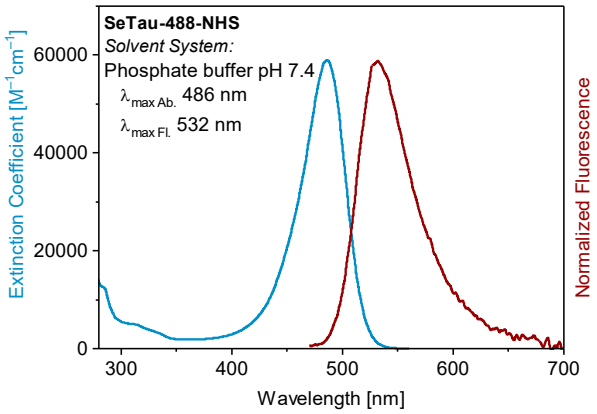
Advantages

- Excellent chemical stability against oxidation by peroxides and other reactive oxygen species (ROS).
- Significantly higher photostability compared to fluorescein-based dyes such as FITC (see below).
- Large Stokes shift of ~47 nm, larger than FITC (30 nm, ex/em: 490/520) or Alexa 488 (23 nm, ex/em: 494/517).

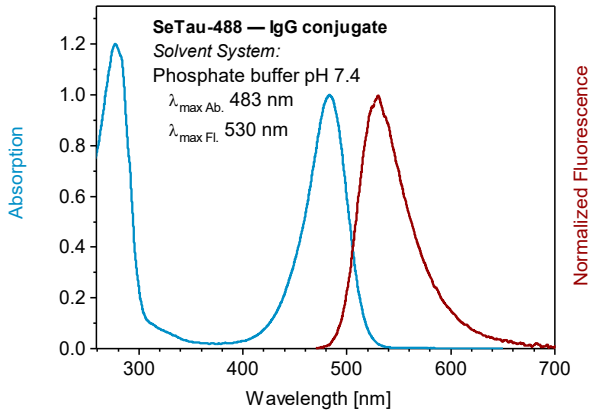
Spectral Data

Sample	Solvent System	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Quantum Yield* [%]	Fluorescence Lifetime at 25 °C [ns]
Free dye	PBS (pH 7.4)	–	486	59,000	532	27	1.2
IgG conjugate 1		1.0	484		529	66	2.4
IgG conjugate 2		2.0	484		530	61	2.3
IgG conjugate 3		5.0	483		530	52	2.2
IgG conjugate 4		10.0	483		530	46	1.8
BSA conjugate 1		1.0	480		526	45	
BSA conjugate 2		2.0	481		527	43	

* **Fluorescein** in 0.1N NaOH (QY = 92%) was used as the reference. $\lambda_{Ex.}$ = 450 nm.



Absorption and emission spectrum
of **SeTau-488-NHS** in PBS (pH 7.4)



Absorption and emission spectrum
of a **SeTau-488 — IgG conjugate** in PBS (pH 7.4)
(Dye-to-protein ratio 3.7)

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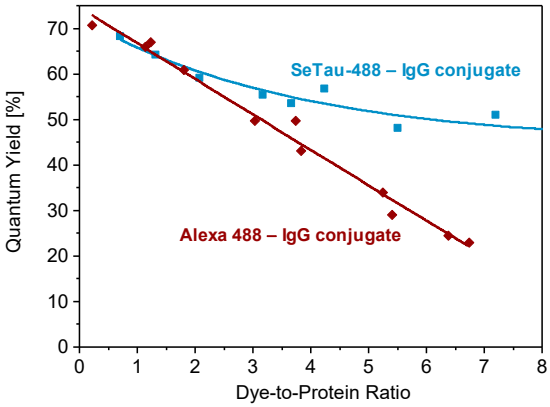
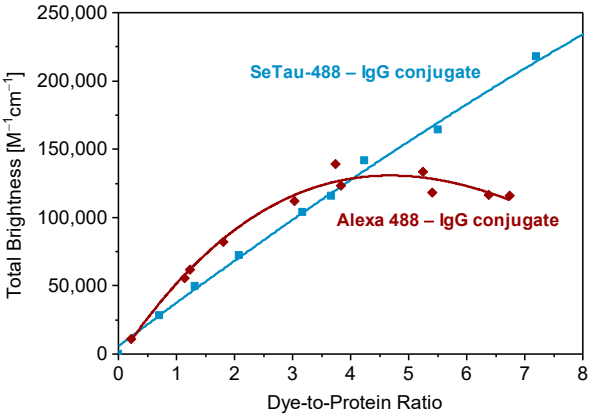
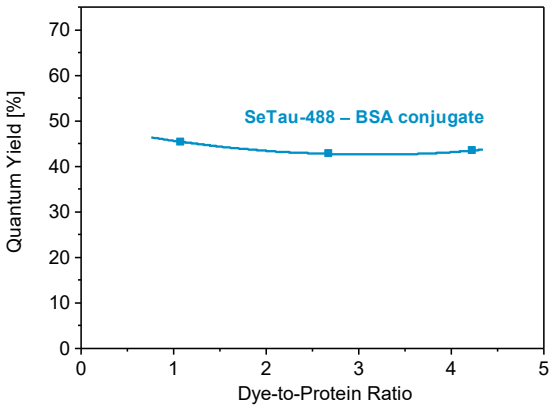


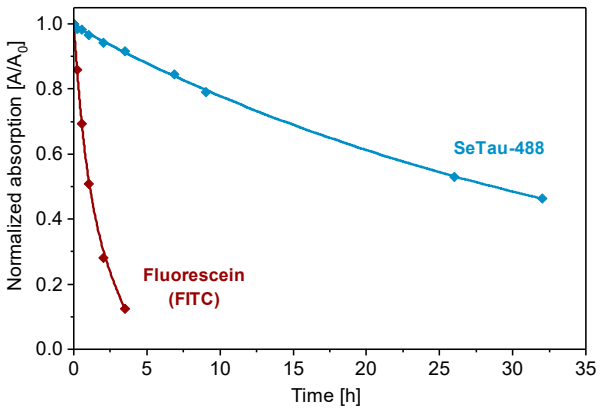
Fluorescence quantum yield *vs.* dye-to-protein ratio
of **SeTau-488 — IgG conjugates** in PBS (pH 7.4)
as compared to **Alexa 488 — IgG conjugates**



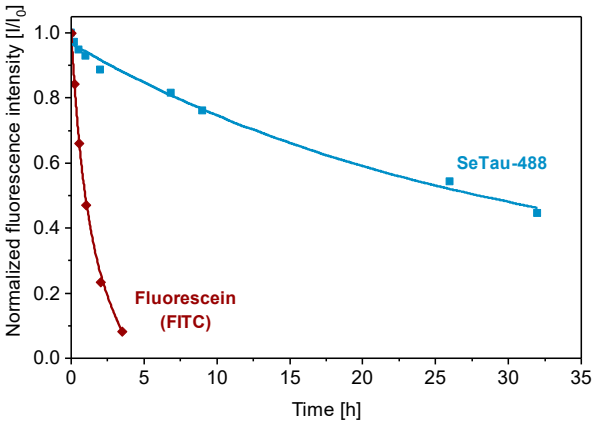
Total brightness (QY × ε × D/P) vs. dye-to-protein ratio (D/P)
of **SeTau-488 — IgG conjugates** in PBS (pH 7.4)
as compared to **Alexa 488 — IgG conjugates**



Fluorescence quantum yield *vs.* dye-to-protein ratio
of **SeTau-488 — BSA conjugates** in PBS (pH 7.4)



Photostability. Decrease of the long-wavelength absorption
of **SeTau-488-COOH** compared to **fluorescein** upon irradiation
with a warm light LED (illuminance ~ 4,000 Lux)



Photostability. Decrease of fluorescence intensity
of **SeTau-488-COOH** compared to **fluorescein** upon irradiation
with a warm light LED (illuminance ~ 4,000 Lux)