

Product number: K9-3162
Product name: SeTau-500-NHS

General Data

Molecular Mass: 1628.70
1370.22 (protonated form)
Solubility: Water, Alcohol, DMF, DMSO
Insoluble: Hexane
Storage: Store in absence of light, desiccate, and refrigerate

Description

- Bright, water-soluble, amine-reactive label containing one NHS-ester group. The ideal label for proteins and other amino-modified biomolecules including oligonucleotides. Brighter, more photostable replacement for fluorescein-type labels like Alexa-488 including Alexa 555!

Advantages

- Perfectly suited for excitation with the 480-nm or 503-nm diode lasers or the 488-nm Ar-ion laser
- Unprecedentedly large Stokes' shift of >60 nm (larger than for Alexa Fluor 555 ex/em:553/568, (15 nm) or Cy3 ex/em:550/565 (15 nm), Auora 555-NHS (553/567) (14 nm)!
- Large Stokes shift enables the use of wider filter sets like 585/15, 535 LP, 560/40, 535 LP, helping to increase the sensitivity of the measurements
- Very high quantum yield of close to 60% in PBS 7.4! Much higher than Cy3 (QY=0.15) or Alexa 555-NHS (Q.Y. = 0.1)!¹
- Ten-times longer fluorescence lifetime compared to Cy3 or Alexa-555 in PBS 7.4.
- Considerably higher photostability compared to fluorescein or Cy3 (see below)
- High chemical stability against oxidation with peroxides or other oxygen species!

Spectral Data

Solvent System: phosphate buffer pH 7.4

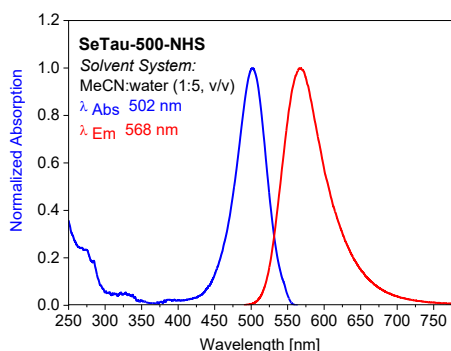
Sample	Dye-to-protein Ratio	Absorption max. [nm]	Extinction Coefficient [M ⁻¹ cm ⁻¹]	Fluorescence max. [nm]	Quantum Yield ¹ [%]	Fluorescence Lifetime at 25 °C [ns]
Free dye in MeCN:water (1:5, v/v)		502	59700	568	67	1.7
Free dye		502	59600	567	43	1.7
IgG conjugate 1	0.5	500		562	59	2.8
IgG conjugate 2	1.0	500		562	58	2.7
IgG conjugate 3	2.0	500		563	57	2.6
IgG conjugate 4	3.0	500		563	55	2.5
IgG conjugate 5	4.0	500		563	53	2.5
BSA conjugate 1	0.6	501		561	64	3.0
BSA conjugate 2	1.0	501		563	58	2.9

¹ Fluorescein in 0.2N NaOH (QY = 92%) was used as the reference. λ_{Ex.} = 485 nm.

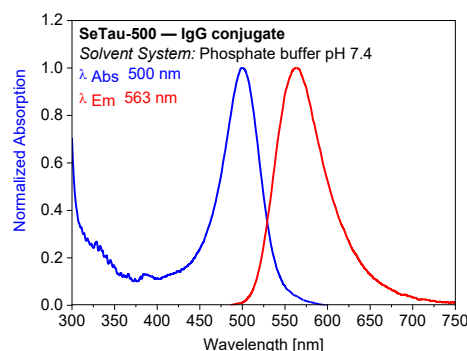
² Alexa-555-NHS in PBS (QY = 10%, ε = 152000 [M⁻¹cm⁻¹], τ = 0.3 ns)

Product number: K9-3162

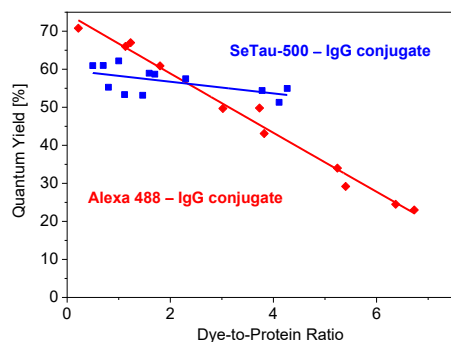
Product name: SeTau-500-NHS



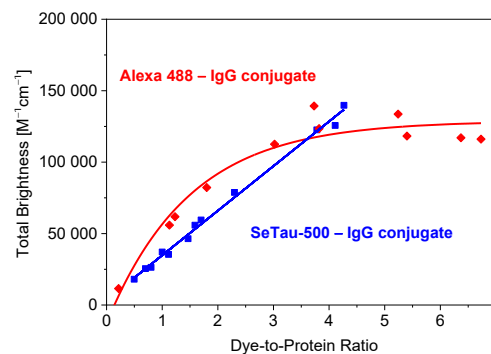
Absorption and emission spectrum of **SeTau-500-NHS** in MeCN:water (1:5, v/v)



Absorption and emission spectrum of a **SeTau-500 - IgG conjugate** in phosphate buffer (PB pH 7.4) and (Dye-to-protein ratio of 1, (D/P = 1.0))



Quantum yield vs. dye-to-protein ratio of **SeTau-500 — IgG conjugates** in phosphate buffer (pH 7.4) as compared to **Alexa 488 — IgG conjugates**



Total brightness ($QY \times \epsilon \times D/P$) vs. Dye-to-protein ratio (D/P) of **SeTau-500 — IgG conjugates** in phosphate buffer (pH 7.4) as compared to **Alexa 488 — IgG conjugates**