

Product number: K7-547
Product name: SeTau-405-NHS

General Data

- Molecular Mass:** 548.97
- Solubility:** water, alcohol, DMF, DMSO
- Insoluble:** acetone, chloroform, toluene
- Storage:** Store in absence of light, desiccated and refrigerate

Description

- Hydrophilic, amine-reactive, long-lifetime label containing one NHS-ester group, with one positive charge and chloride as the counter-ion.

Applications

- Covalent labeling of proteins, amino-modified DNA, amino-modified oligonucleotides and lipids.
- Fluorescence lifetime assays.
- Fluorescence polarization-based assays of high molecular weight antigens.

Advantages

- Highly fluorescent label for proteins and oligos.
- High quantum yield (Q.Y.) ~ 80 % (water)
- Long fluorescence lifetime of 9 ns in water
- Perfectly suited for excitation with the 380-nm and 404-nm diode lasers
- Large Stokes' shift of over 100 nm
- High fundamental polarization $P_0 = 475$ mP
- Highly soluble in aqueous buffer (500 mg/L at 20°C)

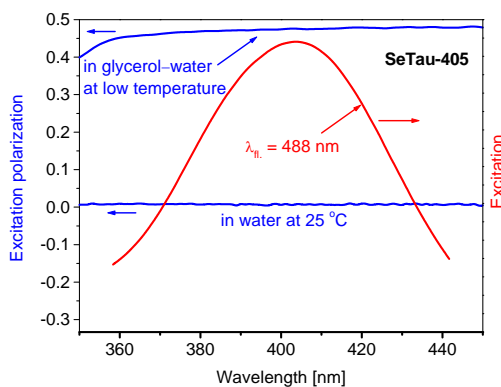
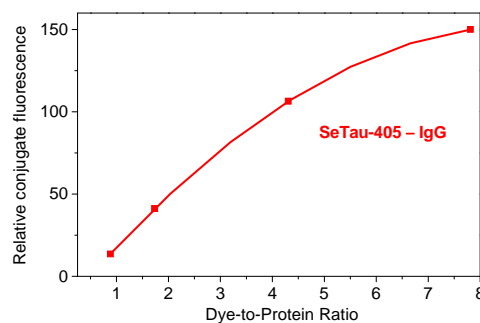
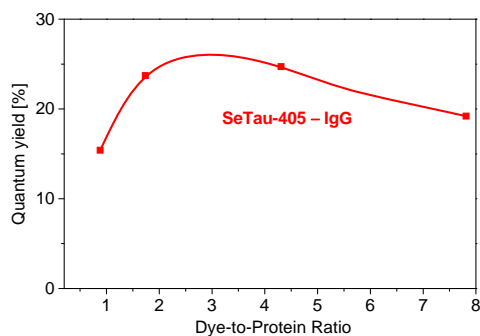
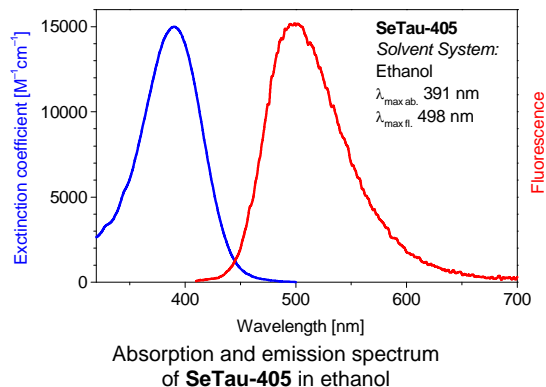
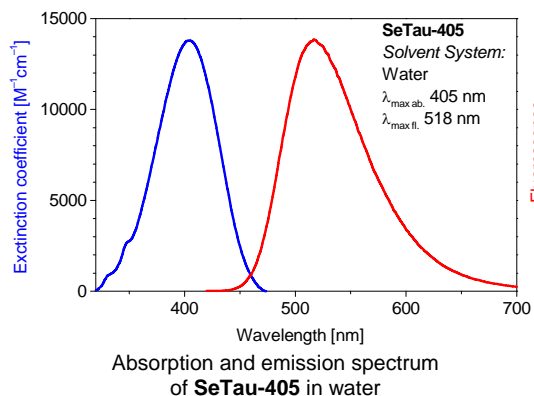
Spectral Data

Sample	Dye-to-protein Ratio	Solvent System	Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Q.Y. ¹ [%]	Luminescence Lifetime at 25 °C [ns]			Polarization at 25 °C [mP]
							τ_1	τ_2	Mean τ	
Free dye	—	ethanol	391	15,000	498	55	8.5 (100%)	—	8.5 ²	
Free dye	—	water	405	13,800	518	80	9.3 (100%)	—	9.3 ³	9±3
BSA conjugate 1	3	pH 7.4	406		518		2.4 (10%)	8.2 (90%)	7.6	
BSA conjugate 2	8	pH 7.4	406		518					
IgG conjugate 1	0.9	pH 7.4	405		518	15			8.9	
IgG conjugate 2	7.8	pH 7.4	405		518	19			8.4	

¹ Excitation at 400 nm.

² **K7-537** (Free acid) vs. Dimethyl-POPOP in ethanol ($\tau = 1.45$ ns [http://iss.com/resources/reference/data_tables/FL_LifetimeStandards.html]), ISS Chronos FD, $\lambda_{ex} = 370$ nm LED, ethanol, $\tau = 8.53 \pm 0.02$ ns, $\chi^2 = 1.53$.

³ **K7-547** (NHS ester) vs. Ludox, ISS Chronos FD, $\lambda_{ex} = 370$ nm LED, water, $\tau = 9.27 \pm 0.01$ ns, $\chi^2 = 1.19$.



Excitation polarization spectra at low temperature in glycerol—water and at 25 °C in water and excitation spectrum of **SeTau-405** in water at 25 °C.
Fundamental polarization $P_0 = 475 \text{ mP}$ when completely immobilized