SETA BioMedicals
Fluorescent Tools for BioMedical Applications
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Product number: K9-4148
Product name: SeTau-647-Maleimide

General Data

Molecular Mass:	1873.43
	1485.70 (protonated form)
Solubility:	Water, Alcohol, DMF, DMSO
Insoluble:	Chloroform
Storage:	Store in absence of light, desiccate and refrigerate

Description

- Extremely bright, water-soluble, thiol-reactive label containing one maleimide group. The ideal label for proteins and other thiol-modified biomolecules including oligonucleotides.

Advantages

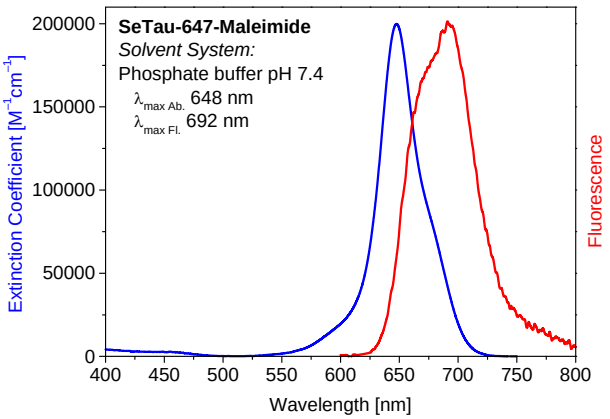
- Perfectly suited for excitation with 635, 640, and 650-nm diode lasers.
- Low quenching tendency at high dye-to-protein ratios compared to other labels e.g. **Cy5**.
- Large Stokes'shift of ~44 nm (about twice that of **Cy5** or **Alexa 647**).
- Considerably higher photostability compared to fluorescein or other cyanine dyes (**Cy5**, **Alexa** or **ATTO** dyes).
- High chemical stability against oxidation with peroxides or other oxygen species.
- Several times longer fluorescence lifetime (τ ~ 3 ns) compared to **Cy5** or **Alexa 647** (τ ~ 1 ns).
- Extremely bright label: most sensitive organic fluorescent label for proteins currently on the market for the 647-nm Kr-ion laser line.

Spectral Data

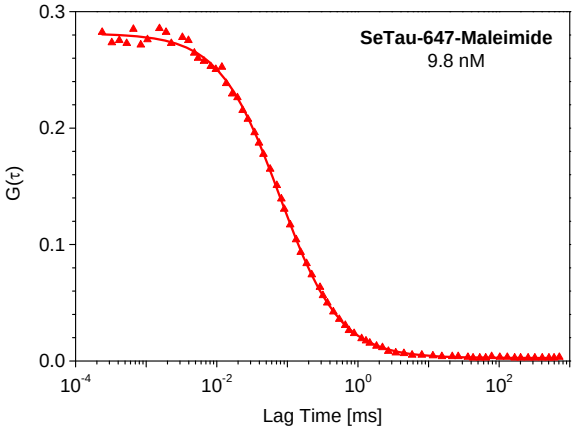
Solvent System: phosphate buffer pH 7.4

Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Quantum Yield[1] [%]	Fluorescence Lifetime at 25 °C [ns]
648	200,000	692	45	3.2

[1] Excitation at 620 nm



Absorption and emission spectrum of **SeTau 647-Maleimide** in phosphate buffer (pH 7.4)



Autocorrelation function of **SeTau-647-Maleimide** (9.8 nM) in water [1, 2]

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References

[1] Midde K., Rich R., Marandos P., Fudala R., Li A., Gryczynski I., Borejdo J. Comparison of orientation androtational motion of skeletal muscle cross-bridges containing phosphorylated and dephosphorylated myosin regulatory light chain. J.Biol.Chem. 288:10, 7012–7023 (2013).

[2] Midde K. Studies in molecular mechanisms of skeletal muscle contraction: applications to transgenic mice with inherited cardiomyopathies. UNTHSC, 2013.