SETA BioMedicals
Fluorescent Tools for BioMedical Applications

http://www.setabiomedicals.com
e-mail: info@setabiomedicals.com

Product number: K8-1351
Product name: Square-660-carboxy

General Data

Molecular Mass: 638.73

Solubility: Water, Alcohol, DMF, DMSO

Insoluble: Acetone, Chloroform, Toluene

Storage: Store in absence of light, desiccated and refrigerate

Description

- Fluorescent probe

Applications

- Cell staining
- Proteomics

Advantages

- Perfectly suited for excitation with the 380, 405, 635, 650, and 670-nm diode lasers and UV light
- Sensitive; high extinction coefficients and high quantum yields up to 45% in presence of proteins
- Good aqueous solubility
- High photostability; e.g. compared to fluorescein or **Cy5**™
- Low molecular weight

Spectral Data

Solvent System: phosphate buffer pH 7.4

Concentration of BSA	Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Quantum Yield[1] [%]	Fluorescence Lifetime at 25 °C [ns]	Polarization at 25 °C [mP]
0	657	182,000	676	3	0.27±0.02[2]	323±4[3]
2 mg/mL	679		696	45	3.56±0.02[4]	

[1] Excitation at 620 nm. **Cy5** in phosphate buffer pH 7.4 (QY = 27% [1]) was taking as a reference.

[2] **Square-660-Carboxy** in phosphate buffer pH 7.4 (OD = 0.13) *vs.* **Alexa 647** in water (1.04 ns [2]); T = 25°C; ISS Chronos FD; excitation 635 nm (laser); bandpass filter 640 nm; longpass filter 670 nm; τ_{mean} **= 0.27 ns**; $\chi^2 = 1.78$; $\tau_1 = 0.12$ ns; $\tau_2 = 0.38$ ns; $f_1 = 0.37$; $f_2 = 0.62$.

[3] Excitation between 550–670 nm

[4] **Square-660-Carboxy** in presence of 2 mg/mL BSA *vs.* **Alexa 647** in water (1.04 ns [2]); ISS Chronos FD; excitation 635 nm (laser); bandpass filter 640 nm; longpass filter 670 nm; τ_{mean} **= 3.56 ns**; $\chi^2 = 1.01$; $\tau_1 = 0.34$ ns; $\tau_2 = 3.68$ ns; $f_1 = 0.04$; $f_2 = 0.96$.

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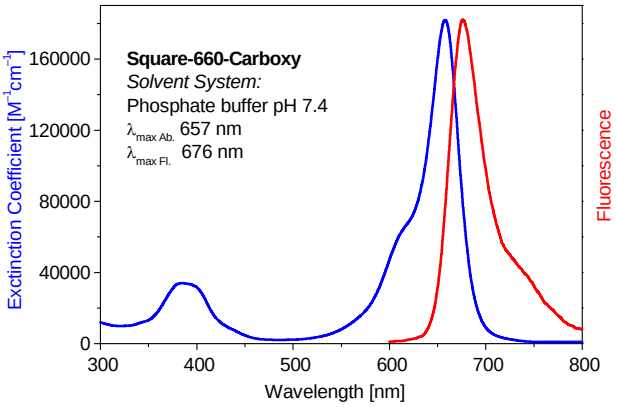
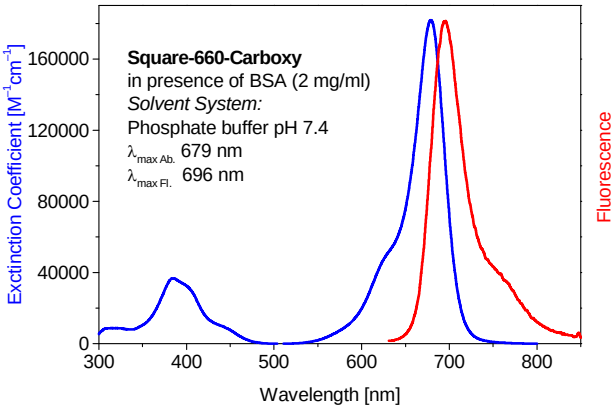
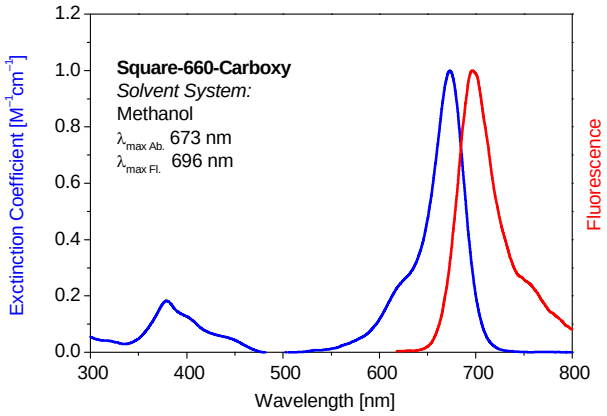


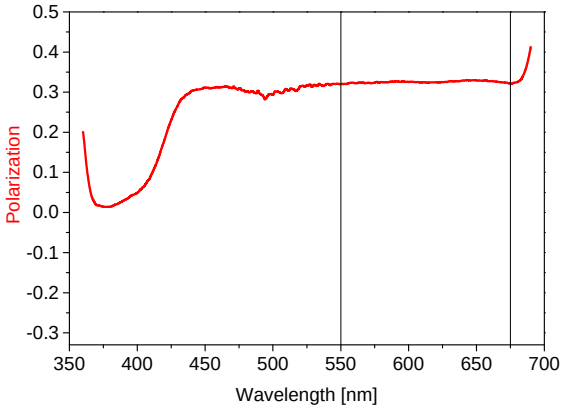
Absorption and fluorescence spectra of **Square-660-Carboxy** in phosphate buffer (pH 7.4)



Absorption and fluorescence spectra of **Square-660-Carboxy** in presence of BSA (2 mg/mL) in phosphate buffer (pH 7.4)



Absorption and fluorescence spectra of **Square-660-Carboxy** in methanol

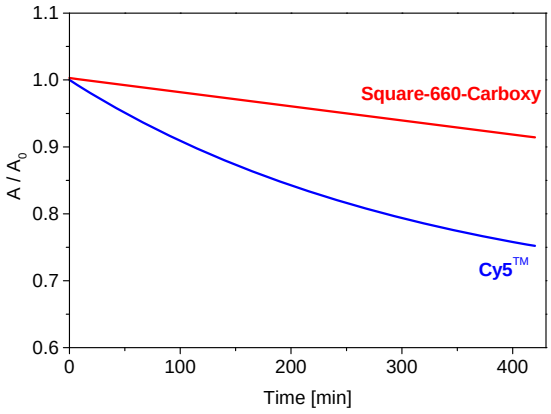


Excitation polarization spectrum of **Square-660-Carboxy** in phosphate buffer (pH 7.4) at 25 ºC.
The fluorescence polarization is constant at 323±4 mP

Photostability

when exposed to light from a halogen lamp (200 W)

Solvent System: phosphate buffer pH 7.4



Decrease of the long-wavelength absorption band of **Square-660-Carboxy** as compared to **Cy5™**

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Reference

[1] R.B.Mujumdar, L.A.Ernst, S.R.Mujumdar, C.J.Lewis, A.S.Waggoner. Cyanine dye labeling reagents: sulfoindocyanine succinimidyl esters. Bioconjugate Chem. (1993) 4, 105–111.

[2] V.Buschmann, K.D.Weston, M.Sauer. Spectroscopic study and evaluation of red-absorbing fluorescent dyes. Bioconjugate Chem. (2003), 14, 195–204.