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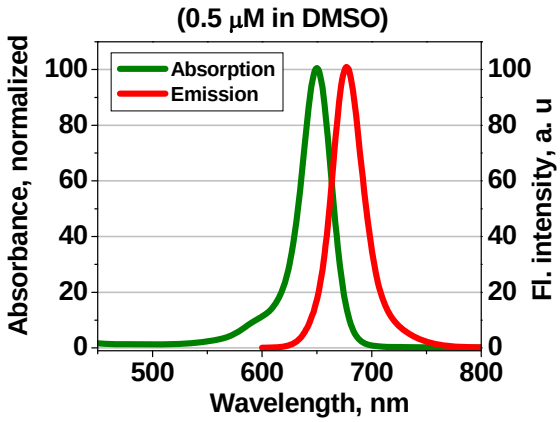
**Catalog Number: SR-1002**

**Product Name: SRfluor® 680 Carboxylate**

**Product Description**: A far-red emitting dye (Figure 1), belonging to the squaraine rotaxane family of dyes, which bears a free carboxyl group that can be coupled to free amino groups.

*Figure 1: Spectra of SRfluor®-680 carboxylate. (absorption maxima = 650 nm; emission maxima = 678 nm)*




**Product size:** 1 mg of crystalline dark green powder.

**Molecular Weight:** 1109

**Product Purity:** > 90% by HPLC

**Extinction Coefficient (DMSO):** 242500 $cm^{-1}M^{-1}$ (650 nm).

**Storage/Stability:** Solid should be stored in the dark at room temperature. Stock solutions in DMSO should be stored in the dark at 0-4°C and are found to be stable for at least 1 month.

**Applications:**
SRfluor®-680 carboxylate has been found to be 5-20X brighter compared with cyanines, Alexa® and ATTO® dyes and also to have improved chemical and photochemical stability (1-3). It can be coupled to peptides, proteins and antibodies, etc., to provide fluorescent conjugates for use in Western-Blots and *in vivo* imaging studies.

**Additional Information:**

- 1mg of SRfluor®-680 carboxylate can be dissolved in 0.9 mL of DMSO to provide a 1mM stock solution.
- SRfluor®- 680 carboxylate can be efficiently excited with either 633nm or 647nm laser lines and detected using a standard filter set-up for Cy5.

**Typical activation procedure for SRfluor™-680 carboxylate:**

A mixture of SRfluor®-680 carboxylate (1 mg, 0.0009 mmol), EDC (*N*-(3-Dimethylaminopropyl)-*N*′-ethylcarbodiimide hydrochloride) (0.001 mmol), HOBt (1-Hydroxybenzotriazole hydrate) (0.001 mmol) in DMSO (1 mL) will be readily reacted with amines of interest by continuous stirring at room temperature for 24 hours.

**References:**


(1) Johnson, J. R.; Fu, N.; Arunkumar, E.; Leevy, W. M.; Gammon, S. T.; Piwinica-Worms, D.; Smith, B. D. Squaraine Rotaxanes: Superior Substitutes for Cy-5 in Molecular Probes for Near-Infrared Fluorescence Cell Imaging *Angew. Chem. Int. Ed*. **2007**, *46*, 5528.

(2) Arunkumar, E.; Fu, N.; Smith, B. D. Squaraine-Derived Rotaxanes: Highly Stable, Fluorescent Near-IR Dyes. *Chem.-Eur. J*. **2006**, *12*, 4684.

(3) Arunkumar, E; Forbes, C. C.; Noll, B. C.; Smith B. D. Squaraine-Derived Rotaxanes: Sterically Protected Fluorescent Near-IR Dyes *J. Am. Chem. Soc*. **2005**, *127*, 3288.