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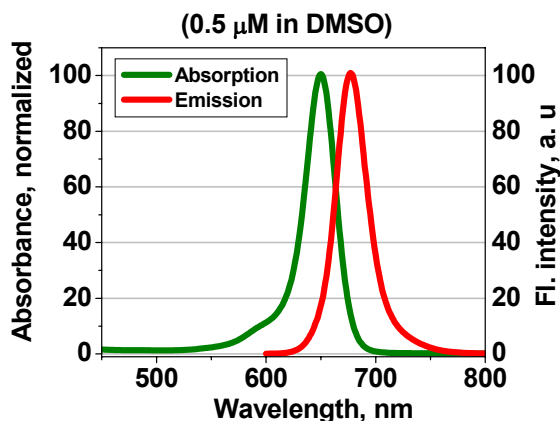
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Catalog Number: SR-1002

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): 242,500 cm⁻¹M⁻¹ (650 nm).

Storage/Stability: Solid should be stored in the dark at room temperature. Stock solutions 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 DMF/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 coupling to amino groups:

Stirring a mixture of SRfluor™-680 carboxylate, EDC (*N*-(3-Dimethylaminopropyl)-*N'*-ethylcarbodiimide hydrochloride) and HOBt (1-Hydroxybenzotriazole hydrate) in DMF for 16 hours will form the activated ester which can then be used for conjugation with amines of interest.

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.

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