

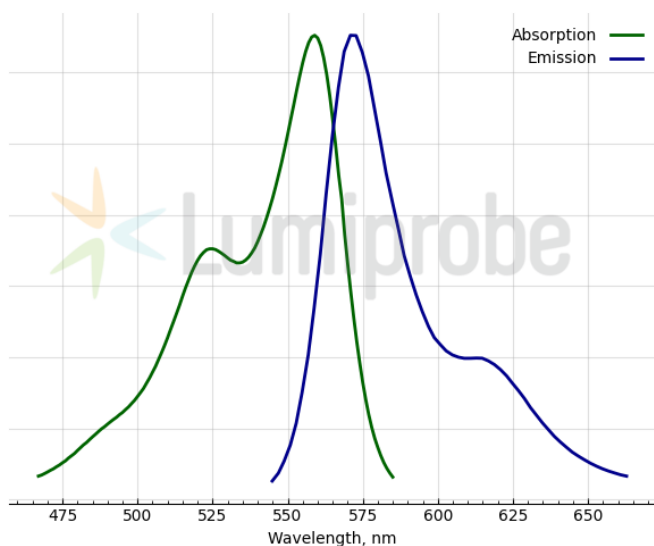
Cyanine3B TCO

<http://www.lumiprobe.com/p/cy3b-tco-axial>

Cyanine3B TCO is a derivative of the Cyanine3B dye functionalized with trans-cyclooctene (TCO) for rapid and selective conjugation to tetrazine-containing biomolecules.

The dye belongs to the cyanine family of orange-red fluorophores and is characterized by high molar absorptivity, high fluorescence quantum yield, and improved photostability compared to conventional Cyanine3. Cyanine3B provides bright and stable fluorescence signals in fluorescence microscopy, flow cytometry, FRET experiments, and super-resolution imaging applications.

The TCO moiety reacts rapidly and selectively with tetrazines without the need for catalysts via the inverse electron-demand Diels–Alder (IEDDA) reaction, enabling biomolecule labeling under mild conditions, including in live cells. The reaction features by fast kinetics, excellent biocompatibility, and minimal background signal.



Absorbance and emission spectra of Cyanine3B

General properties

| | |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appearance: | red powder |
| Molecular weight: | 811.06 |
| Molecular formula: | $C_{46}H_{56}N_4O_7S$ |
| Solubility: | DMSO, DMF, acetonitrile |
| Quality control: | NMR 1H and HPLC-MS (95+%) |
| Storage conditions: | 24 months after receipt at $-20^\circ C$ in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate. Avoid prolonged exposure to light. |
| Legal statement: | This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products. |

Spectral properties

| | |
|-------------------------------------------------|--------|
| Excitation/absorption maximum, nm: | 559 |
| ϵ , $L \cdot mol^{-1} \cdot cm^{-1}$: | 121000 |
| Emission maximum, nm: | 571 |
| Fluorescence quantum yield: | 0.68 |

CF₂₆₀:

0.044

CF₂₈₀:

0.077