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6-Carboxy-H2DCFDA (6-carboxy-2',7'-dichlorodihydrofluorescein)

http://www.lumiprobe.com/p/6-carboxy-h2dcfda

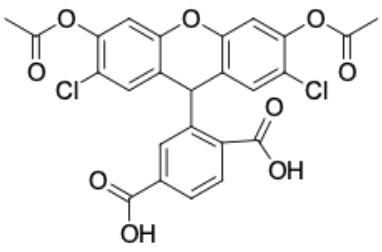
6-Carboxy-H_2DCFDA is a chemically reduced, acetylated form of fluorescein used as an indicator for reactive oxygen species (ROS) in living cells. This reagent is not suitable for working with fixed samples.

6-Carboxy-H_2DCFDA is a non-fluorescent compound that begins to fluoresce after the cleavage of acetyl groups by cellular esterases and its oxidation by reactive oxygen species inside the cell. The resulting 6-carboxy-2',7'-dichlorofluorescein has a bright fluorescence in the green channel (absorption maximum at 504 nm, emission maximum at 525 nm), that can be detected using various methods, such as flow cytometry, plate reading, or fluorescent microscopy.

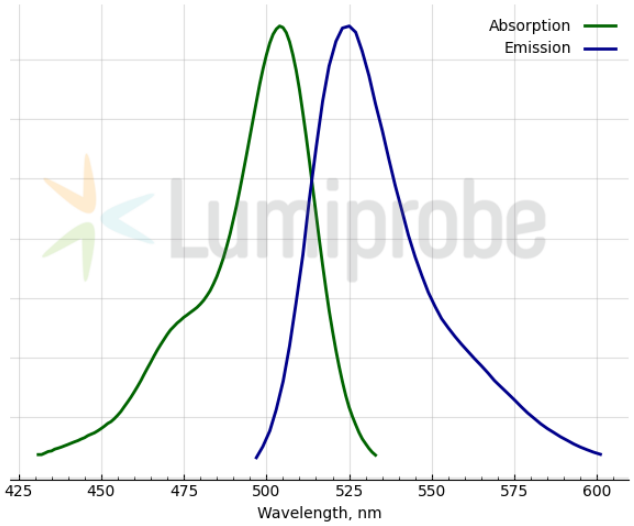
Acetyl groups in 6-carboxy-H_2DCFDA increase its lipophilicity and improve the permeability of the indicator through the cell membrane. After deacetylation by cellular esterases, the compound acquires a charge that allows it to be retained inside the cell. This carboxylated H_2DCFDA analog has two additional negative charges that impede its leakage out of the cell.

Recommendations for using the reagent:

- Use a freshly prepared reagent solution (the working solution is not intended for long-term storage because of gradual reagent oxidation).
- Select an optimal working concentration of the reagent and incubation time required for reagent deacetylation and oxidation for the specific cell line and assay conditions.
  If no protocols are recommended for the specific cell line, start with a concentration from 1 to 10 µM and incubation for 30 min.
- Do not incubate the dye with the cells in the presence of serum because it contains enzymes that cleave H_2DCFDA.



Structure of 6-Carboxy-H2DCFDA



Absorption and emission spectra of 6-Carboxy-H2DCFDA

General properties

Appearance:	white crystals
Molecular weight:	531.30
CAS number:	247044-02-6
Molecular formula:	$C_{25}H_{16}Cl_2O_9$
Solubility:	DMSO, DMF

Quality control:	NMR ^{1}H and HPLC-MS (95+%)
Storage conditions:	24 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate.
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:	504
ε, $L \cdot mol^{-1} \cdot cm^{-1}$:	83500
Emission maximum, nm:	525
Fluorescence quantum yield:	0.79
CF_{260}:	0.23
CF_{280}:	0.16