

Store at
-20°C
#95978**BODIPY 581/591 C11 (Lipid Peroxidation Sensor)**

1 mg


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For Research Use Only. Not for Use in Diagnostic Procedures.
Applications:
IF-IC, FC-FP
Description

BODIPY 581/591 C11 (Lipid Peroxidation Sensor) is a fluorescent dye that localizes to membranes and is used to measure lipid peroxidation in live cells. It is a highly sensitive fluorescent probe that has a shift in fluorescent emission upon oxidation of the polyunsaturated butadienyl portion of its fatty acid analog in live cells. When this occurs, fluorescence emission peaks shift from red (~590 nm) to green (~510 nm). BODIPY 581/591 C11 (Lipid Peroxidation Sensor) measures lipid peroxidation through the ratiometric shift in fluorescence between reduced and oxidized states of the probe.

Lipid peroxidation is the free radical oxidative degradation of lipids from excessive reactive oxygen species production. Oxidative damage to lipids produces lipid peroxides that can cause damage to cell membranes, leading to changes downstream in signaling pathways, eventually leading to cell death. Lipid peroxidation can occur during apoptotic cell death but has been recognized as a defining characteristic of the non-apoptotic cell death pathway ferroptosis. Ferroptosis is defined by iron-dependent, lipid peroxidation. An increase in ferroptosis occurs during aging, and pathologies including cancer, atherosclerosis, neurodegeneration, and cardiovascular disease.

Fluorescent Properties

Excitation/Emission Max: 581/591 nm

After Oxidation Excitation/Emission Max: 488/510 nm

Molecular Weight

504.4 g/mol

CAS

217075-36-0

Storage

Store lyophilized at -20°C. In lyophilized form, the product is stable for 12 months.

Directions for Use**Supplied Reagent:**

1. BODIPY 581/591 C11 (Lipid Peroxidation Sensor): Create a 10 mM stock solution by dissolving 1 mg of BODIPY 581/591 C11 (Lipid Peroxidation Sensor) into 198.26 µL of high-quality anhydrous DMSO.

Additional Reagents (Not Supplied):

1. Hanks' Balanced Salt Solution (HBSS)
2. DMSO (Dimethyl Sulfoxide), Sterile #12611

Protocol:

1. Incubate cells with 1 - 2 µM of BODIPY 581/591 C11 (Lipid Peroxidation Sensor) and 1 µM of Hoechst 33342 #4082 (optional) in cell culture media for 30 min.
2. Wash two times with HBSS.
3. Add desired treatments in HBSS and incubate as needed.
4. Examine cells by fluorescence microscopy. Refer to the Fluorescent Properties section for excitation and emission spectra.
5. For analysis by flow cytometry, dissociate adherent cells or collect suspension cells. Viability dye can be used if desired. Analyze on a flow cytometer at desired cell density.

Applications Key**IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)**Trademarks and Patents**

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