

MitoCLOx, mitochondrial lipid peroxidation probe

<http://cn.lumiprobe.com/p/mitoclox-lipid-peroxidation-probe>

During the ferroptosis and mitochondrial stage of apoptosis, a mitochondria-specific phospholipid, cardiolipin (CL), undergoes peroxidation. MitoCLOx is a mitochondria-targeted fluorescence probe that allows monitoring of this process *in vivo*.

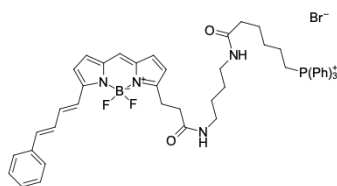
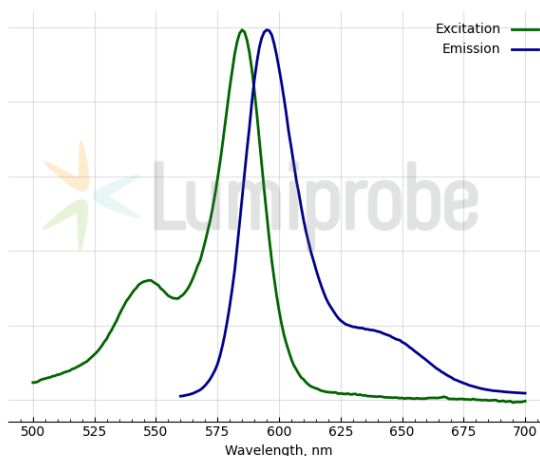
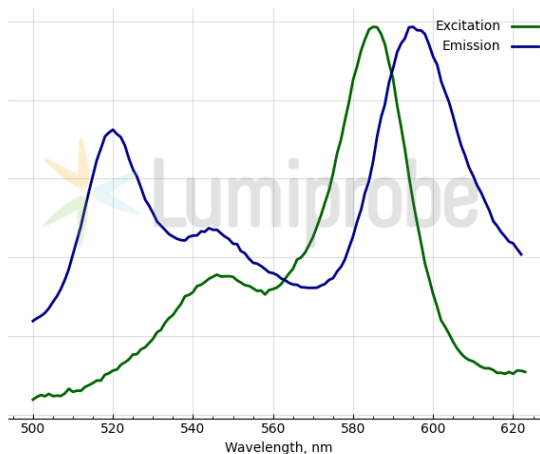
MitoCLOx consists of the BDP 581/591 fluorophore carrying a diene-containing moiety (C11) and linked with a triphenylphosphonium (TPP) residue via a long flexible linker with two amide bonds. MitoCLOx is similar to MitoPerOx but has a longer linker and contains two (vs. one in MitoPerOx) peptide bonds. The flexible linker of MitoCLOx mimics the SS-20 peptide (Phe-D-Arg-Phe-Lys-NH₂), making the indicator specific for cardiolipin. The linker also increases the cellular permeability of MitoCLOx due to additional positive charges.

The oxidation of the diene in MitoCLOx results in a substantial increase in the fluorescence emission at 520 nm and a decrease in the initial fluorescence at 590 nm of the BDP 581/591 fluorophore. Thus, the oxidation of MitoCLOx could be measured either as a decrease of absorbance at 588 nm or as an increase of fluorescence emission in the ratiometric mode at 520/590 nm [1].

MitoCLOx is accumulated in the mitochondria of living cells. Maximal accumulation of MitoCLOx in the cells is reached in 45-60 min. After removing MitoCLOx from the medium, the fluorescence of the cells slowly decreased and reached 50% of the maximum in approximately 1 h. The recommended working concentration of MitoCLOx is 100-200 nM [2].

[1] Lyamzaev K.G. et al. MitoCLOx: A Novel Mitochondria-Targeted Fluorescent Probe for Tracing Lipid Peroxidation. *Oxid. Med. Cell Longev.* 2019:9710208.

[2] Lyamzaev K.G. et al. Novel Fluorescent Mitochondria-Targeted Probe MitoCLOx Reports Lipid Peroxidation in Response to Oxidative Stress *In Vivo*. *Oxid. Med. Cell Longev.* 2020:3631272.



外观: 黑火药

分子量: 901.69

分子式: $C_{50}H_{53}BBF_2N_4O_2P$

溶解度: DMSO 中效果良好

质量控制:

储存条件:

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激发/吸收 585

极大值, 纳米:

ϵ , 摩尔吸光系数 138500

发射 595

极大值, 纳米: