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MitoCLox, mitochondrial lipid peroxidation probe

http://hk.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*.

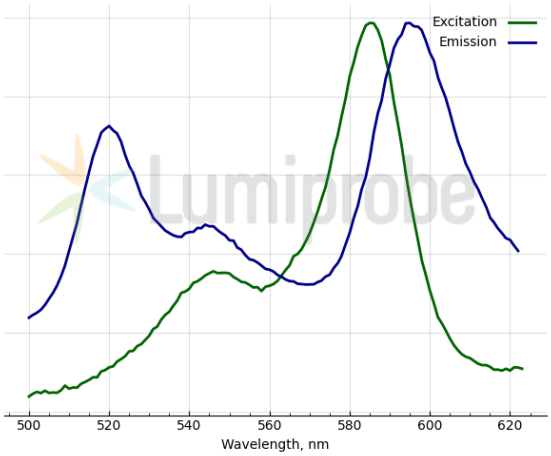
MitoCLox consists of the BDP 581/591 fluorophore carrying a diene-containing moiety (C11) and linked with a triphenylphosphonium (TPP) residue via a long flexible linker with two amide bonds. MitoCLox is similar to MitoPerOx but has a longer linker and contains two (vs. one in MitoPerOx) peptide bonds. 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.

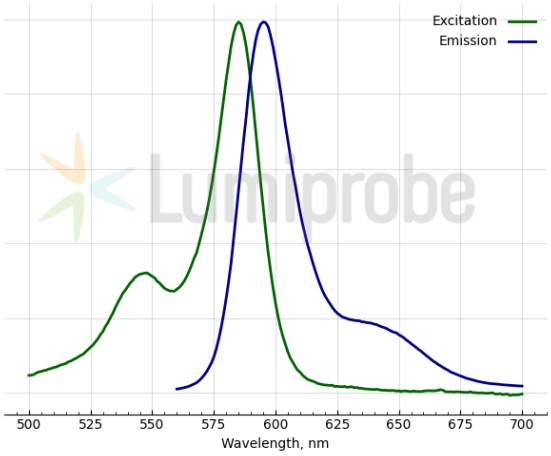
The oxidation of the diene in MitoCLox results in a substantial increase in the fluorescence emission at 520 nm and a decrease in the initial fluorescence at 590 nm of the BDP 581/591 fluorophore. Thus, the oxidation of MitoCLox could be measured either as a decrease of absorbance at 588 nm or as an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

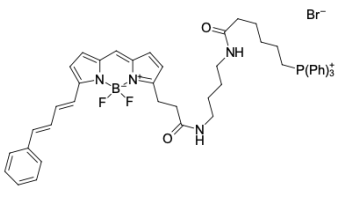
MitoCLox is accumulated in the mitochondria of living cells. Maximal accumulation of MitoCLox in the cells is reached in 45-60 min. After removing MitoCLox from the medium, the fluorescence of the cells slowly decreased and reached 50% of the maximum in approximately 1 h. The recommended working concentration 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:	黑色粉末
分子量:	901.69
分子式:	$C_{50}H_{53}BBrF_2N_4O_2P$
溶解度:	DMSO 中效果良好
质量控制:	NMR ^1H and HPLC-MS (95+%)
储存条件:	收到後，在-20°C避光條件下可保存24個月。運輸：室溫最多可保存3週。乾燥保存。
法律声明:	本產品僅供研究目的提供和銷售。本產品並未經過食品、藥品、醫療器械、化妝品等領域的安全性和效力測試，且未經明示或暗示授權用於其他任何用途，包括但不限於體外診斷、人類或動物用途，以及商業用途。

激发/吸收极大值，纳米:	585
ε, 摩尔吸光系数，cm^{-1}:	138500
发射极大值，纳米:	595