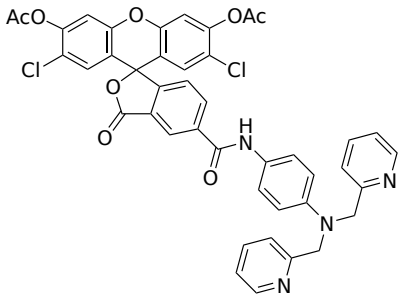
Newport Green™ DCF Diacetate *Cell Permeant*

Catalog Number: 21265
Unit Size: 1 mg

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	24 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	801.64
Soluble In	DMSO
Chemical Structure	

Spectral Properties

Excitation Wavelength	N/A
Emission Wavelength	N/A

Applications

Newport Green™ DCF Diacetate is a cell-permeable zinc indicator optimized for the quantitative detection of intracellular Zn^{2+} in live-cell systems. In its diacetate-protected form, the probe passively diffuses across the plasma membrane. Upon cellular entry, endogenous cytosolic esterases hydrolyze the acetyl groups, generating the de-esterified Newport Green™ DCF dye, which is water-soluble and effectively retained within the cytoplasm. The activated dye exhibits a moderate affinity for Zn^{2+} (K_d ≈ 1 μM), enabling sensitive detection of physiologically relevant concentrations of labile zinc. Importantly, it displays minimal affinity for Ca^{2+} (K_d > 100 μM), providing high selectivity for Zn^{2+} over other intracellular divalent cations. This selectivity makes it particularly suitable for investigating dynamic Zn^{2+} signaling events in excitable cells, such as neurons, where zinc influx is mediated by glutamatergic stimulation or voltage-gated ion channels. Newport Green™ DCF exhibits excitation and emission maxima at approximately 505 nm and 535 nm, respectively, ensuring compatibility with standard FITC filter sets for applications including fluorescence microscopy, flow cytometry, and high-content imaging.