Zinquin ethyl ester *UltraPure grade*

Catalog number: 21253
Unit size: 5 mg

Component	Storage	Amount
Zinquin ethyl ester *UltraPure grade*	Freeze (<-15 °C), Minimize light exposure	5 mg

OVERVIEW

Zinquin ethyl ester is a lipophilic, zinc-sensitive, cell-permeable fluorescent probe. It is retained in living cells because the ethyl ester is cleaved by cytosolic esterase to give Zinquin that carry a negative charge, preventing its efflux across the plasma membrane. Zinquin fluorescent probes may be loaded into cells by in the culture medium containing 5-40 uM Zinquin ethyl ester in PBS with calcium and magnesium (or in culture medium). Cells are normally incubated with the Zinquin ethyl ester for 15-30 minutes at 37 °C. Exact loading concentration, time and temperature depend on the purpose of the experiment and cell type, and so will need to be optimized experimentally. Cells are washed in PBS with culture medium to remove extracellular remaining dye. Cells are observed under microscope or used for confocal microscopy, FACS or spectrofluorimetry analysis. Zinc is the second most abundant transition metal in the body and it is essential as catalytic, structural and regulatory ion. Zinc ions are involved in homeostasis, immune responses, oxidative stress, apoptosis and aging. Zinc has been proposed to function as a conventional neurotransmitter for the presynaptic neuron and as a transmembrane signal to traverse the postsynaptic neuron. Aberrant zinc metabolism is associated with many neurological diseases including Alzheimer's disease, Parkinson's disease and epilepsy. The most suitable technique for in vivo monitoring of zinc has been proven to be fluorescence imaging.

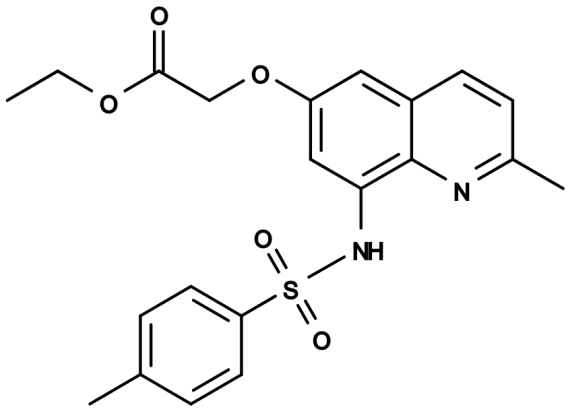

Figure 1. Chemical structure for Zinquin ethyl ester *UltraPure grade*

KEY PARAMETERS

Instrument:	Flow cytometer
Excitation:	355 nm laser
Emission:	515/30 nm filter

PREPARATION OF STOCK SOLUTIONS

Unless otherwise noted, all unused stock solutions should be divided into single-use aliquots and stored at -20 °C after preparation. Avoid repeated freeze-thaw cycles.

1. Zinquin stock solution:
Make a ~10 mM Zinquin ethyl ester stock solution with DMSO.

SAMPLE EXPERIMENTAL PROTOCOL

1. Load into cells in culture medium containing 5 - 40 uM zinquin ethyl ester or in PBS (with calcium and magnesium).
2. Incubate with the zinquin ethyl ester for 15 - 30 minutes at 37°C. Exact loading concentration, time, and temperature depend on the purpose of the experiment and cell type, and so will need to be optimized experimentally.
3. Wash with PBS to remove any extracellular remaining dye, and replace with PBS or medium.
4. Observe under microscope or analyze with flow cytometer with 515/30 nm filter.

EXAMPLE DATA ANALYSIS AND FIGURES

DISCLAIMER