Data Sheet

BioTracker™ Apo-15 Calcium-Independent Apoptosis Probe

Live Cell Dye

SCT238

Pack Size 1 mg

Store at -20 °C

FOR RESEARCH USE ONLY

Not for use in diagnostic procedures. Not for Human or Animal Consumption.

Background

The BioTracker™ Apo-15 Calcium-Independent Apoptosis Probe is a calcium-independent, "turn-on" fluorescence probe emitting in the green spectrum for imaging and detection of apoptotic live cells.

Apoptosis is dysregulated in numerous diseases, from inflammatory conditions to cancer. Detection of apoptosis is a key output in assessing drug efficacy, yet the low levels of free calcium in diseased tissues limit use of annexins as apoptosis detection reagents, favoring calcium-independent fluorogenic detection. Apo-15 binds negatively charged phospholipids exposed on apoptotic cell membranes without interfering with cellular function. Apo-15 is non-fluorescent in viable cells but highly fluorescent in apoptotic cells, enabling highly specific detection of early apoptosis. Apoptotic imaging and detection with Apo-15 is broadly applicable to a wide range of cell types and experimental conditions.

Spectral Properties

Fluorescence images obtained by λex = 500 nm and emission at 520 nm.

Quality Control Testing

Purity ≥ 98% confirmed by HPLC

Identification confirmed by HNMR, LC-MS, and elemental analysis

Molar Mass: 1311.33 g/mol

Storage and Handling

Store BioTracker™ Apo-15 Calcium-Independent Apoptosis Probe at -20°C, desiccated and protected from light.

Note: Centrifuge vial briefly to collect contents at bottom of vial before opening.

Presentation

Lyophilized. Orange solid.

Representative Data

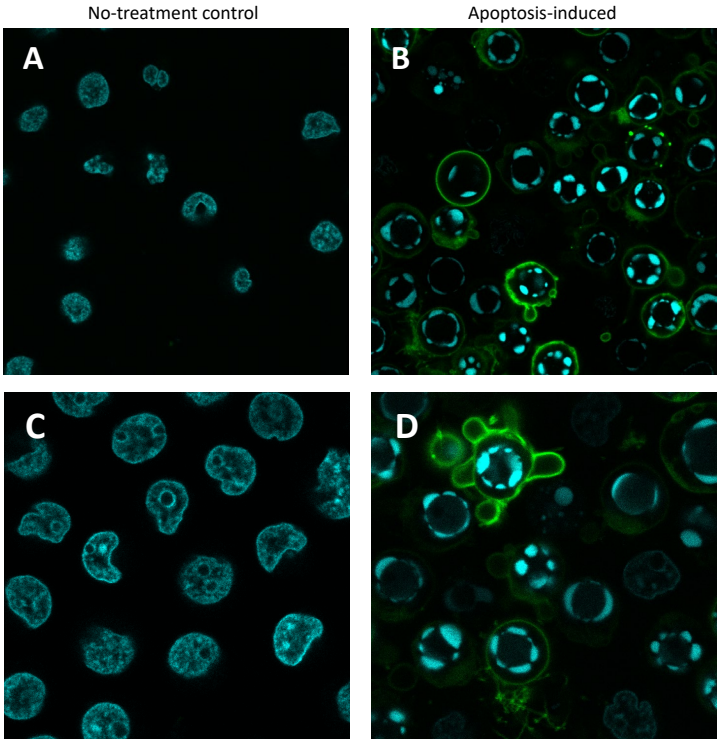

Figure 1: Confocal microscopy images of Apo-15 staining. HL-60 human leukemia cells were cultured with or without the apoptosis-inducer staurosporine (1 µM; Cat. No. 19-123) and stained with 100 nM Apo-15 dye solution (green) and co-stained with 7 µM Hoechst nuclear dye (cyan). Merged images show no staining in control (A, C) and staining of apoptotic cell membranes in treated samples (B, D).

Protocols

Preparing BioTracker™ Apo-15 live cell dye stock solution

1. Before opening the vial, spin down the solid to the bottom by a microcentrifuge or by a desktop centrifuge.
2. Warm the vial to room temperature. Prepare the Apo-15 probe dye stock solution by dissolving the contents of one vial (1 mg) in 763 µL of DMSO to create a 1 mM solution.
3. Aliquot and store stock solution at –20° C or below for longer storage.

Labeling cells

1. Culture cells in an appropriate medium and vessel for fluorescence microscopy or flow cytometry
2. Prepare the Apo-15 staining solution by diluting the Apo-15 stock solution 1:10,000 to 1:1,000 in culture medium.
3. Treat cells with appropriate apoptosis inducer (example, 1 µM staurosporine for 3 hours)
4. Remove the cell culture medium from the cells.
5. Add sufficient staining solution to cover the cells.
6. Incubate for 10-20 minutes, protected from light.
7. Observe the cells under fluorescence microscope: λex = 500 nm, λem = 510-530 nm or detect by flow cytometry with blue/cyan (488 nm) laser.

Note: Optimal concentration must be determined by end user.

References

1. Barth N et al. A fluorogenic cyclic peptide for imaging and quantification of drug-induced apoptosis. Nat. Commun. 2020, 11:4027.

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Document Template 20306518 Ver 6.0
20714848 Ver 3.0, Rev 31May2024, CJ