Nuclear Blue™ DCS2 *Equivalent to SYTOX™ Blue Dead Cell Stain*

Catalog number: 17546, 17547
Unit size: 0.5 ml, 1 ml

Component	Storage	Amount (Cat No. 17546)	Amount (Cat No. 17547)
Nuclear Blue™ DCS2 *Equivalent to SYTOX™ Blue Dead Cell Stain* *1 mM in DMSO*	Freeze (< -15 °C), Minimize light exposure	0.5 mL	1 mL

OVERVIEW

Nuclear Blue™ DCS2 is the same molecule to SYTOX™ Blue Dead Cell Stain (SYTOX™ is a trademark of ThermoFisher). Nuclear Blue™ DCS2 is a simple and quantitative single-step dead-cell indicator for use with violet laser equipped flow cytometers. It is a high-affinity nucleic acid stain that easily penetrates cells with compromised plasma membranes but will not cross uncompromised cell membranes. Under the same conditions, our Nuclear Violet™ DCS1 (#17549) gives much higher signal/background ratio than SYTOX™ Blue Dead Cell Stain. Nuclear Violet™ DCS1 is better excited by the violet laser at 405 nm than SYTOX™ Blue Dead Cell Stain. After brief incubation with Nuclear Violet™ DCS1 stain, the nucleic acids of dead cells fluoresce bright blue when excited with 405 nm violet laser light. The violet-excited fluorescence emission of Nuclear Violet™ DCS1 stain permits clear discrimination from probes excited by most other laser lines, facilitating the development of multicolor assays with minimal spectral overlap between signals.

KEY PARAMETERS

Flow cytometer

Emission	473/15 nm Filter
Excitation	405 nm Laser

SAMPLE EXPERIMENTAL PROTOCOL

The following protocol can be used as a general guideline and is adaptable for any cell type.

Note: Growth medium, cell density, and other factors may influence staining. For optimal staining, try a range of dye concentrations to determine the one that yields the best results.

Note: Before using, thaw the vial of Nuclear Blue™ DCS2 to room temperature

1. Harvest sample cells using an appropriate buffer and adjust the cell concentration of the sample to be from 1 x 10^5 to 5 x 10^7 cells/mL.
2. Prepare flow cytometry tube(s) containing 1 mL of cell suspension.
3. Add 1 µL of Nuclear Blue™ DCS2 to each flow cytometry tube.
4. Incubate flow cytometry tubes for 5 to 10 minutes at room temperature.
5. Analyze samples without washing on a flow cytometer with a 473/15 nm emission filter.

EXAMPLE DATA ANALYSIS AND FIGURES

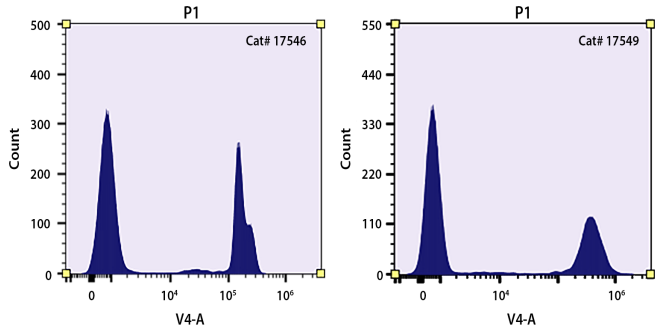

Figure 1. A mixture of heat-killed and untreated Jurkat cells was stained with Nuclear Blue™ DCS2 (17546) or Nuclear Violet™ DCS1 (17549) stain for 10 minutes. Cells were analyzed on a flow cytometer equipped with a 405 nm violet laser and a 473/15 nm bandpass filter, such as the V4 channel on Cytek's Aurora spectral flow cytometer. Live cells are easily distinguished from the dead cell population.

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