

DiYO™-1 [equivalent to YOYO®-1] *5 mM DMSO Solution*

 Catalog number: 17580
 Unit size: 0.2 ml

Component	Storage	Amount
DiYO™-1 [equivalent to YOYO®-1] *5 mM DMSO Solution*	Freeze (< -15 °C), Minimize light exposure	1 vial (0.2 ml)

OVERVIEW

DiYO™-1 is chemically equivalent to YOYO®-1 (YOYO® is the trademark of Invitrogen). DiYO™-1 is a carbocyanine dimer with green fluorescence similar to FITC. It is cell-impermeant and easily distinguished from Cy5 and rhodamines as a nuclear counterstain and dead cell indicator. It is non-fluorescent in the absence of nucleic acids, and generates a very bright fluorescence signal upon binding to DNA. DiYO™-1 gives strong and selective nuclear staining in cultured cells and in paraffin sections. Simultaneous labeling with cell-permeable Nuclear Red™ LCS1 dye and cell-impermeant DiYO®-1 can be used to assess cell viability. DiYO™-1 and Nuclear Red™ both have much greater extinction coefficients than that of DNA-bound propidium iodide.

KEY PARAMETERS

Fluorescence microscope

Excitation	FITC filter set
Emission	FITC filter set
Recommended plate	Black wall/clear bottom
Instrument specification(s)	FITC filter set

PREPARATION OF WORKING SOLUTION

DiYO™-1 working solution

Make DiYO™-1 working solution in Hanks with 20 mM Hepes buffer (HH buffer) or buffer of your choice at your desired concentration.

Note In initial experiments, it may be best to try several dye concentrations to determine the optimal concentration that yields the desired result. High dye concentration tends to cause nonspecific staining of other cellular structures.

SAMPLE EXPERIMENTAL PROTOCOL

Caution: The following protocol can be adapted for most cell types. Growth medium, cell density, the presence of other cell types and factors may influence staining. Residual detergent on glassware may also affect staining of many organisms, and cause brightly stained material to appear in solutions with or without cells present.

1. Grow and treat cells as desired.
2. Remove the cell culture medium and fix cells.
3. Add DiYO™-1 working solution (1 to 10 μM) into the cells (either suspension or adherent cells), and stain the cells for 15 to 60 minutes.
4. Remove the dye working solution and add HH buffer or buffer of your choice.
5. Analyze the cellular staining with a fluorescence microscope using FITC filter.

EXAMPLE DATA ANALYSIS AND FIGURES

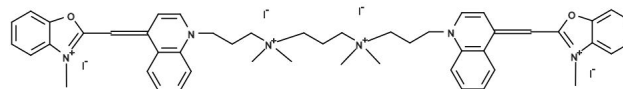


Figure 1. Chemical structure for DiYO™-1 [equivalent to YOYO®-1] *5 mM DMSO Solution*

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