DRAQ7™ Dye

Catalog Numbers D15105, D15106, and D15107

Pub. No. MAN0018531 **Rev.** B.0

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from **thermofisher.com/support**.

Product description

Invitrogen™ DRAQ7™ Dye is a far-red fluorescent dye that only stains the nuclei of dead and permeabilized cells. This anthraquinone dye is impermeable to intact cells, making it ideal for the exclusion of nonviable cells by flow cytometry. DRAQ7™ Dye rapidly stains double-stranded DNA (dsDNA), thus it can be used for cell-cycle analysis in fixed cells to report DNA content. In fluorescent microscopy, the dye can be used as a nuclear stain, and as a measure of cell health in end-point assays due to its non-toxic nature in long-term cultures.

DRAQ7™ Dye can be excited by wavelengths from 488 to 647 nm, though it is optimally excited by the red laser lines. Its emission maxima is at 697 nm when intercalated with dsDNA. For flow cytometry, when using the blue laser for excitation, the dye can be detected with filter sets for PerCP-Cy™5.5 or PerCP-eFluor™ 710. If using the red laser for excitation, it is recommended to use BP or LP filter sets for Cy5. For fluorescence microscopy, DRAQ7™ Dye can be optimally excited using yellow to red light. Far-red longpass filters such as 695LP, 715LP or 780LP can be used for detection.

The dye is not excited by UV light and can be combined with FITC and PE without compensation. Due to its broad excitation and far-red emission, it is generally not recommended to combine with other far-red fluorophores excited by blue to red light.

Contents

Product	Product No.	Contents	# of Assays	Storage[1]
DRAQ7™ Dye (0.3 mM in aqueous buffer)	D15105	250 µL	50 assays	2-8°C Protect from light
	D15106	1 mL	200 assays	
DRAQ7™ DROP & GO™	D15107	3 × 2.5 mL	90 assays	15-30°C Protect from light

[1] Refer to vial for more information.

DRAQ7™ Dye staining protocol for viability on suspension cells

1. For each sample, suspend cells in PBS at approximately 5×10^5 cells/mL.
2. Add 5 µL DRAQ7™ Dye for a final concentration of 3 µM and incubate for 10 minutes at 37°C or room temperature, protected from light. No wash steps are necessary.

   Note: It is recommended that DRAQ7™ Dye be titered because the optimal concentration for viability analysis may vary by cell type.
3. Analyze on a flow cytometer.

DRAQ7™ DROP & GO™ staining protocol

Add 2 drops to 1×10^6 cells and incubate for 10 minutes at 37°C, protected from light.

References

Akagi J, Kordon M., Zhao H., et al. Real-time cell viability assays using a new anthracycline derivative DRAQ7™. *Cytometry A.* 2013; **83(2)**:227-234.

Edward R. Red/far-red fluorescing DNA-specific anthraquinones for nucl:cyto segmentation and viability reporting in cell-based assays. *Methods Enzymol.* 2012; **505**:23-45.

Edward, R., and Dimmick, I. Compensation-free dead cell exclusion: multi-beam excitation of the far-red DNA binding viability dye DRAQ7™.(TECH2P. 873). *J Immunol.* 2014; **192**, Supplement No. 1, 135-4.

Limited product warranty

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