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1. Description

This product is for research use only.

Components	1 mL DRAQ7™ Staining Solution
Capacity	For 5×10^7 total cells, up to 100 tests
Product format	The ready-to-use DRAQ7 Staining Solution is supplied as aqueous solution at a concentration of 0.3 mM.
Storage	Store protected from light at 2–8 °C. Do not freeze. The expiration date is indicated on the vial label.

1.1 Background information

DRAQ7 is a far-red cell impermeable DNA stain which intercalates double-stranded DNA (dsDNA) of dead and permeabilized cells. The fluorescence emission maximum for dsDNA-bound DRAQ7 is 694 nm. With an broad excitation band with maxima at 599 and 644 nm it can be excited efficiently by red (635 nm) and yellow (561 nm) lasers, and suboptimally by blue (488 nm) lasers.

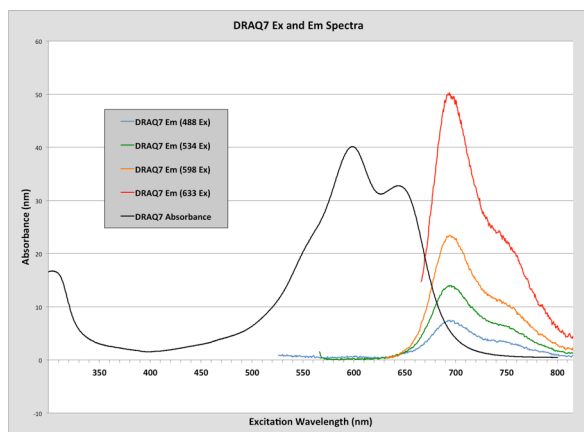


Figure 1: Spectral profile of DRAQ7 Staining Solution.

1.2 Applications

- Exclusion of dead cells

1.3 Recommended dilution

It is recommended to use DRAQ7 Staining Solution at a final concentration of 3 μ M (1:100 dilution). Since applications vary, each investigator should titrate the reagent to obtain optimal results. Incubation times may vary typically between 10–20 minutes at temperatures between room temperature and 37 °C. For dead cell exclusion add 10 μ L of DRAQ7 Staining Solution to up to 5×10^5 cells in 1 mL buffer and incubate for 10 minutes at room temperature in the dark before analysis.

2. Examples of cell staining with the DRAQ7™ Staining Solution

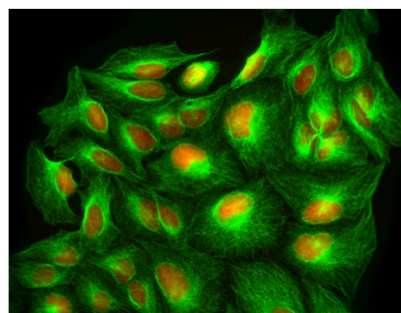


Figure 2: Formaldehyde-fixed U2OS cells labeled with DRAQ7 (red, nuclei) and AlexaFluor 488 antibody to β -tubulin (green).

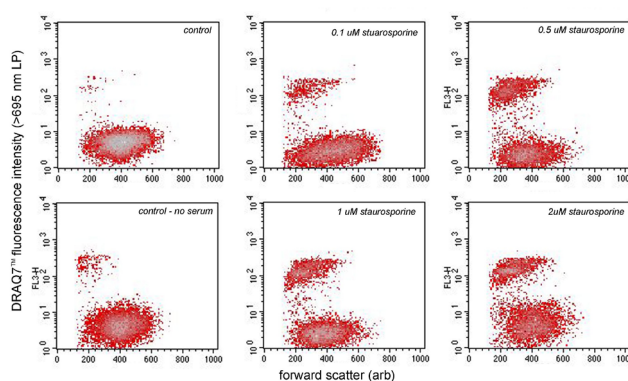


Figure 3: Lymphoma cells treated with increasing quantities of staurosporine (STS). DRAQ7 reports STS-induced apoptosis and cell death in dose-dependent manner with clear separation of positive and negative events.

3. References

1. Akagi J. *et al.* (2013) Real-time cell viability assays using a new anthracycline derivative DRAQ7[™]. *Cytometry* 83A: 227–234.
2. Edward R. (2012) Red/far-red fluorescing DNA-specific anthraquinones for nucl:cyto segmentation and viability reporting in cell-based assays. *Methods Enzymol.* 505: 23–45.

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