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Product Information

DRAQ5™ Fluorescent Probe

Cat. No.	Product Name	Unit Size
C056A	DRAQ5™ Fluorescent Probe	50 µL
C056B	DRAQ5™ Fluorescent Probe	200 µL
C056C	DRAQ5™ Fluorescent Probe	1 mL

Ex/Em Wavelength: 647/680 nm

Storage upon receipt:
- 4°C
- Protect from light

Product Description

The DRAQ5 Fluorescent Probe is a far-red DNA stain for use in live or fixed cells. Because of its far-red excitation and emission, the DRAQ5 Fluorescent Probe can be multiplexed with many other fluorophores and is ideal for cells expressing green fluorescent protein (GFP) fusion proteins. DRAQ5 Fluorescent Probe is compatible with many existing protocols across a wide range of instrumentation platforms.

Fluorescence cell-based assays, such as flow cytometry, in-cell ELISA, fluorescence microscopy and high-content imaging require a fluorescent label to identify individual cells. When using multiple fluorescent probes to detect different cellular targets or activities, each probe must have a fluorescent spectrum different than the other probes. The blue-fluorescent DNA-binding probes, Hoechst and DAPI are frequently used; however, these probes cannot be used when UV illumination is unavailable or other blue-emitting fluorescent probes are used. Therefore, nuclear probes that emit in a color other than blue are useful for cell identification and counting, and for determining nuclear morphology and DNA content.

The DRAQ5 Fluorescent Probe emits in the far-red region, is lipophilic and crosses cell and nuclear membranes in live and fixed cells and tissues for rapid DNA staining. This stain is water-soluble, supplied ready to use and does not require cell lysis, or a washing step, making it compatible with automation. Because DNA staining is stoichiometric, the DRAQ5 Fluorescent Probe can be used for DNA content analysis in cell proliferation studies.

Procedure for DNA Staining

Note: DRAQ5 Fluorescent Probe is usually added as the last stain in a labeling procedure because no washing is required. Alternatively, add this probe in assay medium for a live cell assay.

1. Prepare phosphate-buffered saline (PBS, without sodium azide) or the appropriate culture media for the specific cells.
2. Resuspend cells in PBS or media at ≤ 4×10^5 cells/mL in a test tube. For adherent cells estimate the number of cells based on confluence level or tissue section dimensions.
3. Add DRAQ5 Fluorescent Probe directly as supplied at 1:1000 dilution. Add directly on top of tissue sections and adherent cells or add DRAQ5 Fluorescent Probe in fresh media.
4. Gently mix and incubate for 5-30 minutes at room temperature. DRAQ5 Fluorescent Probe staining is accelerated at 37ºC and may be reduced to 1-3 minutes. **Note:** Protect cells from light during incubation.
5. Cells can be analyzed directly without further treatment or washing.

References

Edward, R. (2009). Use of DNA-specific anthraquinone dyes to directly reveal cytoplasmic and nuclear boundaries in live and fixed cells. *Mol Cells* **27:**391-6.

Martin, R.M., *et al.* (2005). DNA labeling in living cells. *Cytometry* **67A:**45-52.

Smith, P.J., *et al*. (1999). A novel cell permeant and far red-fluorescing DNA probe, DRAQ5, for blood cell discrimination by flow cytometry. *J Immunol Methods* **229(1-2):**131-9.

Smith, P.J., *et al.* (2000). Characteristics of a novel deep red/infrared fluorescent cell-permeant DNA probe, DRAQ5, in intact human cells analyzed by flow cytometry, confocal and multiphoton microscopy. *Cytometry* **40(4):**280-91.

Swerts, K., *et al*. (2007). DRAQ5: Improved flow cytometric DNA content analysis and minimal residual disease detection in childhood malignancies. *Clin Chim Acta* **379:**154-157.

Wiltshire, M., *et al.* (2000). A novel deep red/low infrared fluorescent flow cytometric probe, DRAQ5NO™, for the discrimination of intact nucleated cells in apoptotic cell populations. *Cytometry* **39(3):**217-23.

Yuan, C.M., *et al*. (2004). DRAQ5-based DNA content analysis of hematolymphoid cell subpopulations discriminated by surface antigens and light scatter properties. *Cytometry* **58:**4752.