

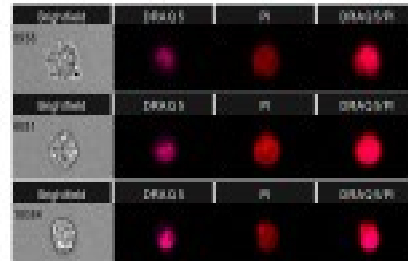
DRAQ5™ in Imaging Flow Cytometry

Far-Red Fluorescent Live-Cell Permeant DNA Dye

1. NUCLEATED CELL LABELLING & NUCLEAR SEGMENTATION

BACKGROUND

Imaging flow cytometers (Imagestream™II and Flowsight; Luminex/Cytek Biosciences) combine cell-by-cell multi-parameter analysis of a flow cytometer with morphological or textural analysis from a fluorescence microscope. A key feature is the ability to cross-compare phenotypically distinct cell types with morphological characteristics and so-called “similarity” analyses. It is possible to classify individual cell events from a dot-plot to further confirm their identities using bright field and individual fluorescence images and composites.



It is possible to analyse any sample suitable for an equivalent conventional flow cytometer, including blood and bone marrow samples that, of course, contain a mixture of nucleated and enucleated cells. When analysing the nucleated cells it is common to lyse the enucleated cells with NH_4Cl or similar since the event analysis rate is considerably lower than a conventional flow cytometer due to the nature of the in-flight image capture. Note: it may require investigation to determine the appropriate lysing agent to leave your cells of interest intact.

WHAT IS THE PROBLEM?

As in fluorescence microscopy one is able to view individual cells. One can potentially segment the cells to the nucleus and cytoplasmic compartment. However, this requires the addition of a fluorescent DNA counterstain. The ideal DNA counterstain to segment nuclei should meet the following criteria: discrete nuclear staining; spectrally separated from commonly used chromophores; work in live or fixed cells; report DNA content; cross-platform compatible for higher resolution or routine applications.

HOW DOES DRAQ5™ HELP?

The far-red fluorescing cell-permeant DNA-binding probe DRAQ5™ discretely segments the nucleus from the cytoplasm in imaging flow cytometry in live or fixed cell experiments, for detailed morphometric analyses. Binding to DNA is stoichiometric also allowing measurement of DNA content and to observe, segment and enumerate aberrant structures such as micronuclei in radio-dosimetry and genotoxicology studies. It can be combined with most UV/violet-excited and visible-range chromophores for multi-colour experiments making it cross-platform compatible.

DRAQ5™ Product Features:

- ❖ far-red fluorescing cell permeant dsDNA probe
- ❖ water-soluble; ready-to-use from the fridge
- ❖ rapid, stoichiometric labelling of all nucleated cells
- ❖ compatible with Horizon BV / BUV, FITC & R-PE dyes
- ❖ optimally excited by orange (594nm) and red (635nm) laser lines



Document Ref: DR5.APPNOTE IMAGING FCM
Revision #: 004
Revision date: 09/06/26

BioStatus Limited
 56A Charnwood Road, Shepshed, Leicestershire LE12 9NP, United Kingdom
 T +44 1509 558 163 | E enquiry@biostatus.com | W www.biostatus.com
 For Research Use Only. © Copyright BioStatus. All Rights Reserved.