Product Name: **DRAQ5 Live Cell DNA Staining Solution**

Catalog Number: **RA20067**

Basic Information

Product Name	DRAQ5 Live Cell DNA Staining Solution
Size	20 μL/50 μL/200 μL
Storage	-20 ℃, protected from light
Shipping	Shipped with ice pack
Validity	12 months
Ex/Em	647/681 nm

Product Introduction

DRAQ5 is a far-red fluorescent live-cell DNA dye and is an anthraquinone dye with high affinity for double-stranded DNA. It is a membrane-permeable dye that can label live cells or fixed/dead cells. In flow cytometry, this dye can be used to distinguish between nucleated and non-nucleated cells. Since DRAQ5 can bind to DNA in a stoichiometric ratio, it can also be used to report nuclear DNA content and is suitable for chromosome ploidy and cell cycle analysis. In fluorescence microscopy analysis, it can be used as a nuclear counterstain. DRAQ5 has many applications and is highly compatible with existing instrument platforms and widely used protocols. The main application areas are HCS (high-content screening), cell models, GFP (green fluorescent protein), flow cytometry, and fluorescence microscopy.

The excitation wavelength range for DRAQ5 is 488 to 647 nm. For imaging microscopy, it is recommended to use a 633 or 647 nm light source for excitation. For flow cytometry, when exciting this dye at 488 nm, detection can be performed using a 685 LP dichroic mirror and a 710/50 channel; when exciting at 633 nm, a 660/20 channel can be used for detection. For cell cycle/DNA analysis applications, it is recommended to use longer-wavelength filters, such as a 735 LP dichroic mirror and a 780/60 channel, to optimize the CV values of the G1 and G2/M peaks. Please ensure that your instrument can detect this dye.

Due to its broad excitation and emission wavelength ranges, it is not recommended to use DRAQ5 in combination with other far-red fluorescent dyes that can be excited by 488 or 633 nm lasers.

Experimental procedures

Note: In the experiment, Draq5 is usually used as the last dye to stain, because Draq5 staining does not require other washing steps, so Draq5 can be directly added to the culture medium containing cells for live cell staining.

1. Sodium azide affects Draq 5 staining. Prepare PBS (without calcium, magnesium, or sodium azide)

or cell culture medium.

2. Resuspend the cells with PBS or culture medium to control the cell density to ≤4×105 cells/mL. For adherent cells and some tissues, roughly estimate the number of cells.

3. Add the appropriate volume of Draq5 staining solution of appropriate concentration according to Table 1. Draq5 staining solution can be added directly to the surface of tissue or adherent cells, or directly added to fresh culture medium.

4. Mix gently and incubate at room temperature in the dark for 5-30 min. Incubate at 37°C for 1-3 min. For experiments with longer time spans, such as EGFP experiments, Draq5 staining solution should be added to the culture medium during the experiment (usually 0.5-3 h) before the addition of agonists and antagonists, and the concentration should be controlled at 1 μM.

Note: If cells have been stained with other fluorescent dyes before Draq5 staining, please keep the above operation away from light.

5. Stained cells can be directly analyzed without washing or other operations.

Table 1 Cell number, required volume and final concentration of Draq5

Cell sample preparation		Volume and final concentration of Draq5 added		
Cell number	PBS or culture medium volume	5 μM	10 μM	20μM
1×10^{6}	2500 μL	2.5 μL	5 μL	10μL
4×10^{5}	1000 μL	1 μL	2 μL	4 μL
2×10^{5}	500 μL	0.5 μL	1 μL	2 μL
1×10^{5}	250 μL	0.25 μL	0.5 μL	1 μL
5×10^{4}	125 μL	0.13 μL	0.25 μL	0.5 μL

Note: This reagent is for scientific research use only!