PRODUCT INFORMATION

PhenoVue DRAQ7, Dead Cell Nuclear Stain

Overview

PhenoVue™ DRAQ7™ Nuclear Stain is a small molecule which is not membrane permeable and is closely related to PhenoVue DRAQ5™. PhenoVue DRAQ7 rapidly stains the double-stranded DNA in dead and permeabilized cells.

It is preferentially excited by red wavelengths (Ex. max 599 & 644 nm) and its maximum emission peaks at 694 nm when intercalated with dsDNA.

PhenoVue DRAQ7 is provided in an aqueous, ready-to-use solution usually added as the final step in a staining protocol. It is documented in HCS applications.

Product Information

Product Name*	Part Number	Number of Vials per Unit	Quantity per Vial	Format	Shipping Conditions
PhenoVue DRAQ7, Dead Cell Nuclear Stain, 1 mL	CP171	1	1 mL (0.3 mM – 300 nmol)	Liquid	Ambient

*DRAQ7™ is a trademark of BioStatus Limited.

Storage and Stability

- **Do not freeze.**
- Store at 2-8°C, protected from light.
- The stability of these products is guaranteed until the expiration date indicated on the vial, when stored as recommended and protected from light.
- Allow the reagents to warm up to room temperature for 15 mins before opening the vials, and aliquot.
- Aliquoted reagents must be stored at 2-8 °C.

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Equivalent Number of Microplates

Product Name	When Used at Recommended Concentration	96-well Microplate (100 µL - 300 µL per Well)	384-well Microplate (25 µL - 90 µL per Well)	1536-well Microplate (4 µL - 12 µL per Well)
PhenoVue DRAQ7, Dead Cell Nuclear Stain, 1 mL	5 µM	Approx. 2 to 6	Approx. 2 to 6	Approx. 3 to 9

See PerkinElmer's range of high-quality imaging microplates here: www.perkinelmer.com/category/microplates-imaging

Spectral and Photophysical Properties

Product Name	Maximum Excitation Wavelength (nm)	Maximum Emission Wavelength (nm)	Filter Set	Epsilon (ε in $M^{-1}.cm^{-1}$ at λ max)
PhenoVue DRAQ7, Dead Cell Nuclear Stain	599/644	694	Cy5	22000

Live- and Fixed-Cell Compatibility

Product Name	Live-Cell Staining	Fixation/Permeabilization Steps Post Live-Cell Staining	Fixed-Cell Staining
PhenoVue DRAQ7, Dead Cell Nuclear Stain	No	No	Yes

Protocols

Cell Culture

Seed cells in imaging black wall, clear bottom microplates (or any other convenient cell culture vessels). Incubate in the appropriate cell culture conditions, usually 37 °C, 5% CO_2 until 50-70% confluency.

Staining

Final concentration and incubation time of PhenoVue DRAQ7 must be optimized according to the cell type.

1. Add 2 to 10 µM of PhenoVue DRAQ7 Nuclear Stain per well.

Note that high concentration of PhenoVue DRAQ7 may result in nonspecific staining of other cellular structures.

2. Incubate for 10 to 60 mins.

3. Acquire images using an imaging system such as the Opera Phenix® Plus High Content Analysis System.

Tips

- When combined with Calcein AM, keep PhenoVue DRAQ7 below 2.0 µM.

Safety Information

Chemical reagents are potentially harmful, please refer to the Safety Data Sheet (SDS) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

Applications

- High-Content Analysis / High-Content Screening
- Imaging Microscopy

Example Data

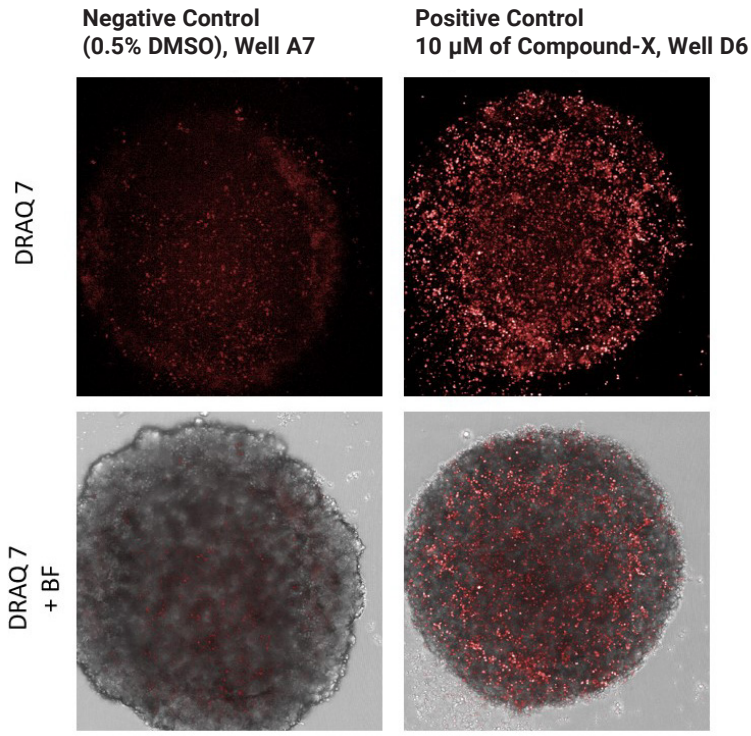

Figure 1: Images of DRAQ7 stained and brightfield of a 3D colorectal immortalized cancer cell line spheroid using the Operetta® CLS™ high-content analysis system.

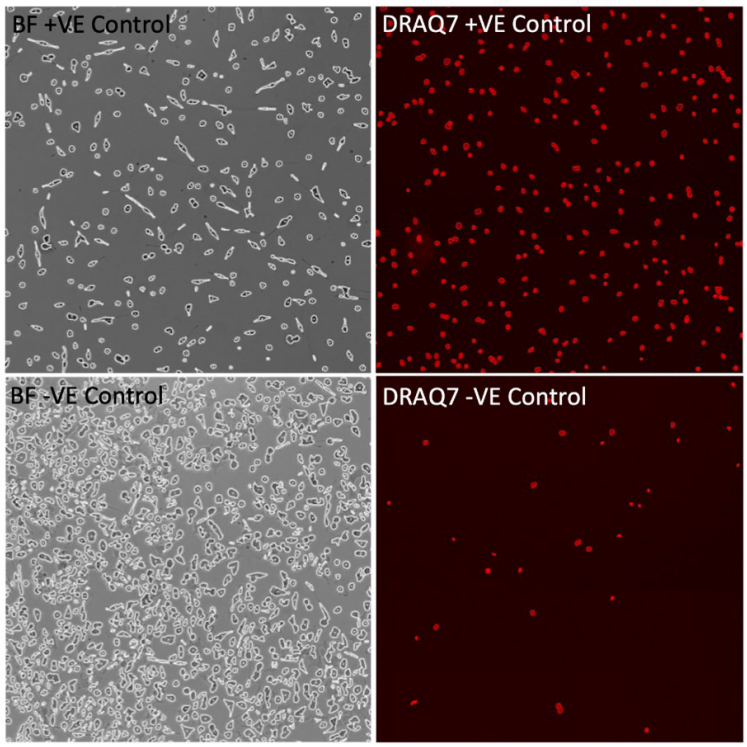

Figure 2: MCF-7 cells treated with negative and positive cytotoxic controls for cell death as recorded by DRAQ7. Imaged with the Celigo S Imaging Cytometer, showing red channel for DRAQ7 and transmitted light images. Data generated by Nexcelom, Imagen Therapeutics and BioStatus.

Related Products

Opera Phenix Plus High-Content Screening System
www.perkinelmer.com/operaphenixplus

Operetta CLS High-Content Analysis System
www.perkinelmer.com/operettaCLS

Harmony® Imaging and Analysis Software
www.perkinelmer.com/harmony

PhenoPlate™ high-quality microplates for imaging
www.perkinelmer.com/PhenoPlates

PhenoVue Cell Painting Kits
www.perkinelmer.com/PhenoVue

PhenoVue Fluor Secondary Antibody Conjugates
www.perkinelmer.com/PhenoVue

PhenoVue Organelle and Cell Compartment Stains
www.perkinelmer.com/PhenoVue

PhenoVue Complementary Reagents
www.perkinelmer.com/PhenoVue

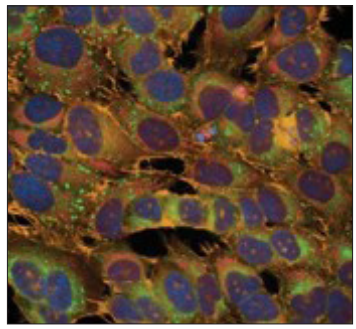

*Figure 3: HeLa cells were seeded in PhenoPlate 96-well microplates (15,000 cells/well) and incubated at 37 °C, 5% CO_2 for 48h. Live cells were stained with **PhenoVue 641 Mitochondrial stain** (0.5 µM) for 30 min at 37 °C, then fixed and permeabilized. Next, cells were incubated with a Cell Painting mix which includes **PhenoVue 512 Nucleic Acid stain (3 µM), PhenoVue Hoechst 33342 nuclear stain (5 µg/mL), PhenoVue Fluor 568 - Phalloidin (33 nM), PhenoVue Fluor 488 - Concanavalin A (100 µg/mL) and PhenoVue Fluor 555 - WGA** for 30 min at RT. Images were acquired on the Operetta CLS high-content analysis system.*

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