

NucView™ 405 Caspase-3 Substrate for the 405 nm laser line

NucView™ 405 Caspase-3 Substrate is a novel blue fluorescent probe that allows detection of caspase-3/7 activity in intact cells in real-time. Biotium scientists invented a novel fluorogenic enzyme substrate design by attaching an enzyme substrate moiety to a nucleic acid dye. In the case of NucView caspase-3/7 substrates, the NucView™ DNA dye is attached to the caspase-3/7 substrate peptide sequence DEVD. Once linked to the substrate peptide, the dye is unable to bind to DNA and remains non-fluorescent. The substrate enters the cytoplasm where it can be cleaved by caspase-3/7 in apoptotic cells. Caspase cleavage of the substrate releases the high-affinity fluorescent DNA dye, which stains the cell nucleus with bright and stable fluorescence signal (Figure 1).

Unlike fluorescently-labeled caspase inhibitor assays (FLICA) that use irreversible inhibitors to label active caspases, NucView caspase-3 substrates do not interfere with caspase activity, allowing monitoring of caspase activity in real time in intact cells.

Now, in addition to our green fluorogenic NucView™ 488 caspase-3 substrate, Biotium offers the new blue fluorogenic NucView™ 405 caspase-3 substrate. NucView™ 405 dye is excited by the 405 nm laser line for detection by confocal microscopy in the DAPI channel (Figure 2), or by flow cytometry in the Pacific Blue® channel (Figure 3). NucView™ 405 is ideal for caspase-3 detection in multi-color applications for researchers who wish to reserve the green fluorescence channel for other detection reagents.

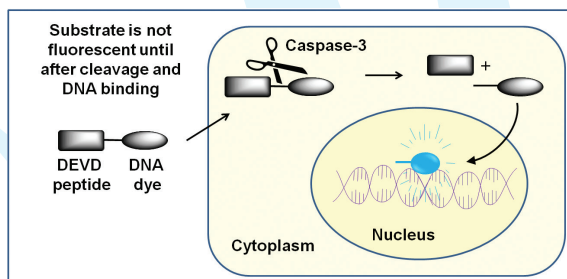
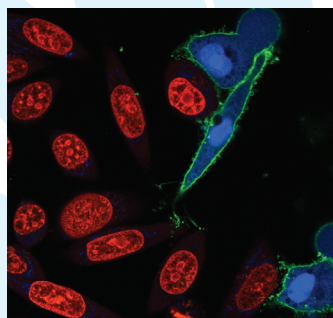


Figure 1. Schematic showing the principle of intracellular caspase-3/7 detection using NucView™ caspase-3 substrates.

Figure 2. HeLa cells were stained with 2 μ M NucView™ 405 caspase-3 substrate for 30 minutes at 37°C. Blue fluorescent NucView™ 405 signal localized to apoptotic cells, identified by CF™488A Annexin V staining in green. Nuclei were stained red with RedDot™ 1 far-red nuclear stain. Cells were imaged on a Zeiss LSM 700 confocal microscope.



NucView™ 405 Features:

- For flow cytometry or confocal microscopy using the 405 nm laser line
- Real-time monitoring of caspase-3/7 activity
- For use in adherent or suspension cells
- Rapid, homogenous, no-wash assay
- Formaldehyde-fixable

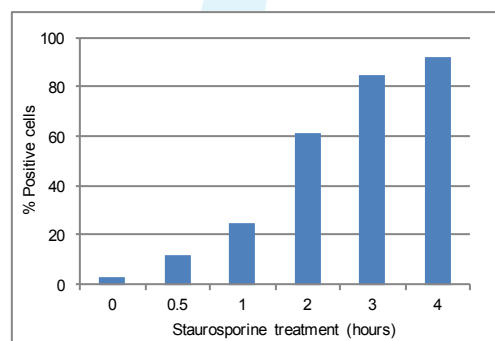


Figure 3. Flow cytometry analysis of apoptosis using NucView 405 caspase-3 substrate. Jurkat cells were incubated with staurosporine for the times indicated to induce apoptosis, then stained with 1 μ M NucView 405 caspase-3 substrate for 30 minutes at room temperature. Fluorescence was analyzed using a BD LSR II flow cytometer in the Pacific Blue® channel (405 nm excitation, 450/50 nm emission filter). The graph shows the percentage of NucView-positive cells at each timepoint of staurosporine treatment.

Ordering Information

Catalog number	Product description
10405-T	NucView™ 405 Caspase-3 Substrate, 1 mM in DMSO, 10 μ L
10405	NucView™ 405 Caspase-3 Substrate, 1 mM in DMSO, 100 μ L

More NucView™ Products

Catalog number	Product description
30029	NucView™ 488 Caspase-3 Assay Kit for Live Cells
30067	Dual Apoptosis Assay with NucView™ 488 Caspase-3 Substrate and CF™594 Annexin V
30077	Dual Apoptosis Assay with NucView™ 488 Caspase-3 Substrate and CF™640R Annexin V
30062	NucView™ 488 and MitoView™ 633 Apoptosis Kit
30072	NucView™ 488 and RedDot™2 Apoptosis and Necrosis Kit
10403	NucView™ 488 Caspase-3 Substrate, 1 mM in PBS
10402	NucView™ 488 Caspase-3 Substrate, 1 mM in DMSO

Visit www.biotium.com to learn more about our wide selection of fluorescence reagents for apoptosis and life science research.

NucView enzyme substrate technology is covered by U.S. Patent Nos. 8,092,784 and 8,586,325. NucView and CF dye are trademarks of Biotium, Inc. Pacific Blue is a registered trademark of Molecular Probes, Inc.