

NucView® Caspase-3 Enzyme Substrates

Fluorescent caspase-3/7 substrates for detecting apoptosis in intact cells by confocal microscopy, flow cytometry, or live cell imaging.



Product Description

NucView® Caspase-3 Substrates are a convenient tool for detecting apoptosis in intact cells based on caspase-3/7 activity using confocal microscopy, flow cytometry, or live cell imaging.

- Rapid, no-wash, endpoint or real-time assays
- Non-toxic, allowing multi-day experiments to be performed
- Available in green, blue, or orange fluorescence
- For flow cytometry, microscopy or live cell imaging systems
- Dual detection of caspase activity and nuclear morphology
- Formaldehyde fixable

About NucView®

NucView® substrates consist of a fluorogenic DNA dye coupled to the caspase-3/7 DEVD recognition sequence. The substrate, which is initially non-fluorescent, penetrates the plasma membrane and enters the cytoplasm. In apoptotic cells, caspase-3/7 cleaves the substrate, releasing the high-affinity DNA dye, which migrates to the cell nucleus and stains DNA with fluorescence. Thus, NucView caspase-3 substrates are bifunctional, allowing detection of caspase-3/7 activity and visualization of morphological changes in the nucleus during apoptosis.

In contrast to other fluorogenic caspase substrates or fluorescent caspase inhibitor based (FLICA) assays, NucView® caspase-3 substrates can be used to detect caspase-3/7 activity within individual intact cells without inhibiting apoptosis progression. Staining is compatible with subsequent fixation and permeabilization for immunostaining.

NucView® substrates are offered as solutions in DMSO or phosphate-buffered saline (PBS). The substrates in PBS are formulated for use in cells that are sensitive to DMSO toxicity. In non-DMSO sensitive cell types, adding DMSO during the substrate incubation may enhance NucView® staining.

To learn about the advantages of monitoring apoptosis using NucView® caspase-3 substrates, visit the [NucView® Technology Page](#).

Product attributes

Apoptosis/viability marker	Caspase
For live or fixed cells	For live/intact cells
Assay type/options	Endpoint assay, Homogeneous assay, Long term staining (24-72h), No-wash staining, Real-time imaging
Detection method/readout	Fluorescence microscopy, Live cell imaging, Flow cytometry
Substrate specificity	Caspases
Colors	Blue, Green, Orange
Fixation options	Fix after staining (formaldehyde), Permeabilize after staining
Excitation/Emission	429/469 nm (with DNA), 500/530 nm (with DNA), 528/563 nm (with DNA)
Storage Conditions	Store at 2 to 8 °C, Store at -10 to -35 °C

NucView® Caspase-3 Substrates and Kits	Catalog No.	Features
NucView® 405 Caspase-3 Substrate, 1 mM in DMSO	10405	Blue fluorescence for flow cytometry in the Pacific Blue® channel or microscopy with the 405 nm laser
NucView® 405 Caspase-3 Substrate, 1 mM in PBS	10407	NucView® 405 substrate in PBS, for DMSO-sensitive cell types
NucView® 488 Caspase-3 Substrate, 1 mM in DMSO	10402	Green fluorescent substrate validated in more than 100 cell types and 200 publications
NucView® 488 Caspase-3 Substrate, 1 mM in PBS	10403	NucView® 488 substrate in PBS, for DMSO-sensitive cell types
NucView® 530 Caspase-3 Substrate, 1 mM in DMSO	10406	Orange fluorescence for microscopy in the Cy®3 channel or flow cytometry in the R-PE channel
NucView® 530 Caspase-3 Substrate, 1 mM in PBS	10408	NucView® 530 substrate in PBS, for DMSO-sensitive cell types
NucView® 488 and MitoView™ 633 Apoptosis Detection Kit	30062	NucView® 488 and far-red fluorescent MitoView™ 633 for the Cy®5 channel
NucView® 488 and RedDot™ 2 Apoptosis & Necrosis Kit	30072	NucView® 488 and far-red dead cell DNA dye RedDot™ 2 for the Cy®5 channel
Dual Apoptosis Assay with NucView® 488 and CF®594 Annexin V	30067	NucView® 488 and red fluorescent Annexin V apoptosis probe
Dual Apoptosis Assay with NucView® 488 and CF®640R Annexin V	30073	NucView® 488 and far-red fluorescent Annexin V apoptosis probe

Choose from Blue, Green, or Orange Fluorescence

NucView® 488

NucView® 488 Caspase-3 Substrate stains apoptotic cell nuclei with green fluorescence, for detection in the FITC channel in fluorescence microscopy or flow cytometry. The dye is excited by the 488 nm laser line. NucView® 488 can be used for multi-color imaging with blue and far-red fluorescent probes. NucView® 488 is the original NucView® probe, and has been validated in over 200 publications and more than 100 cell types.

NucView® 405

NucView® 405 Caspase-3 Substrate stains apoptotic cell nuclei with blue fluorescence, for detection in the DAPI channel by confocal microscopy, or by flow cytometry in the Pacific Blue® channel. The dye is excited by the 405 nm laser line. 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.

Note: NucView® 405 signal may be difficult to observe using epifluorescence microscopy. Confocal microscopy using 405 nm laser excitation is recommended for imaging.

NucView® 530

NucView® 530 Caspase-3 Substrate stains apoptotic cell nuclei with orange fluorescence, for detection in the Cy®3 channel by fluorescence microscopy, or the PE channel by flow cytometry. The dye is excited by the 488 nm laser line. NucView® 530 can be used for multi-color imaging with blue, green, or far-red fluorescent probes.

Note: When excited by the 488 nm laser line, NucView® 530 also fluoresces in the FITC channel, and therefore cannot be analyzed together with green probes by flow cytometry.

NucView is a registered trademark of Biotium. NucView enzyme substrate technology is covered by U.S. patents.

References

Download list of curated [NucView® references and validated cell lines](#).

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