Product Datasheet

pSIVA Apoptosis Detection Flow Cytometry Kit
NBP2-29611-100Tests

Unit Size: 100 Tests

Store at 4°C.

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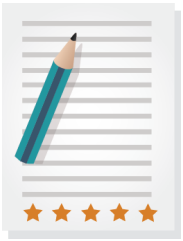
Reviews: 1 Publications: 13

Protocols, Publications, Related Products, Reviews, Research Tools and Images at:
www.novusbio.com/NBP2-29611

Updated 10/23/2024 v.20.1



NBP2-29611-100Tests

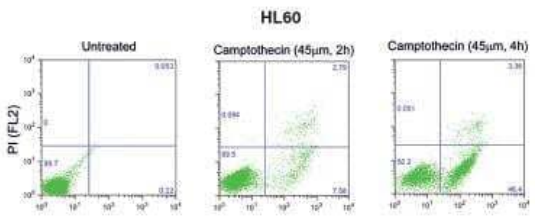
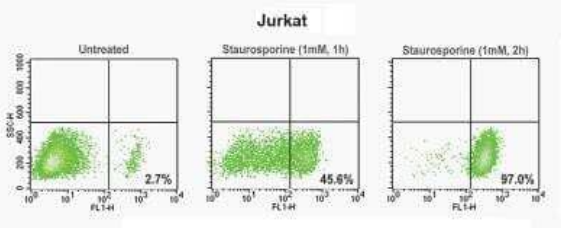
pSIVA Apoptosis Detection Flow Cytometry Kit

Product Information	
Unit Size	100 Tests
Concentration	Concentration is not relevant for this product. Please see the protocols for proper use of this product.
Storage	Store at 4°C.
Conjugate	IANBD

Product Description	
Description	Polarity Sensitive Indicator of Viability (pSIVA (Annexin XII)) is an Annexin based, polarity sensitive probe for the spatiotemporal or kinetic analysis of apoptosis and other forms of cell death. pSIVA (Annexin XII) binding is reversible enabling researchers, for the first time, to detect transient PS exposure which is associated with normal physiological processes as well as with reversible or rescuable apoptosis cell death events. pSIVA (Annexin XII) is conjugated to IANBD, a polarity sensitive dye that fluoresces only when pSIVA is bound to the cell membrane. pSIVA's membrane-bound dependent fluorescence and reversible binding properties are a technological leap for detecting PS exposure and offer additional information on the apoptosis pathway and cell survival compared to Annexin V conjugates. Annexin V binding is nonreversible.
Species	Human, Mouse
Reactivity Notes	Human and Mouse reactivity reported in scientific literature (PMID: 24804954)
Kit Components	pSIVA-IANBD (500 uL or 125 uL), Propidium Iodide Staining Solution (500 uL or 125 uL), 10X PBS (20 mL or 5 mL), 10X Binding Buffer (5 mL or 2 mL)
Notes	pSIVA is protected under patent number: 8,541,549

Product Application Details	
Applications	Flow Cytometry, Flow (Cell Surface)
Recommended Dilutions	Flow Cytometry 1ul/1 million cells, Flow (Cell Surface)
Application Notes	Please see PDF manual attached for specific usage information. Use in Flow cell surface reported in scientific literature (PMID 24804954)

Images

Flow Cytometry: Polarity Sensitive Indicator of Viability Apoptosis Kit [IANBD] [NBP2-29611] - pSIVA-IANBD(TM) + PI shows progressive population staining as cells move from healthy towards death.	
Flow Cytometry: Polarity Sensitive Indicator of Viability Apoptosis Kit [IANBD] [NBP2-29611] - pSIVA-IANBD(TM) shows progressive population staining as cells move from healthy towards death.	

Publications

Sommer A, Kordowski F, Buch J et al. Phosphatidylserine exposure is required for ADAM17 sheddase function. Nat Commun. 2016-05-10 [PMID: 27161080] (FLOW, Human)

Lew ED, Oh J, Burrola PG et al. Differential TAM receptor-ligand-phospholipid interactions delimit differential TAM bioactivities. Elife. 2014-10-24 [PMID: 25265470] (FLOW, Mouse)

Details:
Polarity Sensitive Indicator of Viability Flow Assay Kit used for quantifying apoptosis in adherent cells or supernatant cells from Axl_TAM TKO MEF cultures - cells stained with propidium iodide which bind dead cells and pSIVA which fluoresces when bound to PtdSer (data in Figure 4B).

Nagaria TS, Williams JL, Leduc C et al. Flavopiridol synergizes with sorafenib to induce cytotoxicity and potentiate antitumorigenic activity in EGFR/HER-2 and mutant RAS/RAF breast cancer model systems. Neoplasia. 2013-08-01 [PMID: 23908594] (Flow-CS)

Details:
Flow cytometry (Cell surface): MDA-MB-231 (Fig 4A) and MDA-MB-468 (Fig 4B) adenocarcinoma cells.

Suhane S, Kanzaki H, Arumugaswami V et al. Mitochondrial NDUFS3 regulates the ROS-mediated onset of metabolic switch in transformed cells. Biol Open. 2013-03-15 [PMID: 23519235] (Flow-CS)

Details:
pSIVA-IANBD Flow Kit: Flow (Cell Surface): Fig 1 (HEK293 cells). pSIVA-IANBD was used to determine the basal level of apoptosis in HEK cells.

Demchenko AP. The change of cellular membranes on apoptosis: fluorescence detection. Exp Oncol. 2012-10-01 [PMID: 23070011]

Details:
Live imaging: pSIVA as an important advancement in annexin based methodology.

Ruggiero L, Connor MP, Chen J et al. Diurnal, localized exposure of phosphatidylserine by rod outer segment tips in wild-type but not Itgb5-/- or Mfge8-/- mouse retina. Proc Natl Acad Sci U S A. 2012-05-22 [PMID: 22566632] (Mouse)

Details:
Live tissue imaging (mouse retina): Figs 4, 5. S4. pSIVA-IANBD was added to dissected live mouse retina and shown to label the tips of photoreceptor outer segments (POS). The results suggested that phosphatidylserine (PS) exposure is specific to the POS surface. Furthermore, enhanced PS exposure preceded rod shedding and phagocytosis, suggesting that surface PS exposure promotes these processes.

Krajewska Maryla, You Zerong, Rong Juan et al. Neuronal deletion of caspase 8 protects against brain injury in mouse models of controlled cortical impact and kainic acid-induced excitotoxicity. PLoS One. 2011-01-01 [PMID: 21957448] (Mouse)

Graewe S, Rankin KE, Lehmann C et al. Hostile takeover by Plasmodium: reorganization of parasite and host cell membranes during liver stage egress. PLoS Pathog. 2011-09-01 [PMID: 21909271] (ICC/IF)

Details:
IF (HepG2 cells infected with P. berghei parasites), Fig 1

Warnes G, Martins S. Real-time flow cytometry for the kinetic analysis of oncosis. Cytometry A. 2011-03-01 [PMID: 21254392]

Details:
Live imaging: pSIVA as an assay for real-time detection of apoptosis.

Zhang QC, Yeh TL, Leyva A et al. A compact beta model of huntingtin toxicity. J Biol Chem. 2011-03-11 [PMID: 21209075] (Mouse)

Details:
A pSIVA-IANBD based cell suspension toxicity assay was used to determine cell viability in mouse Neuro2A (neuroblastoma) overexpressing huntingtin proteins (Fig 4).

Skommer J, Darzynkiewicz Z, Wlodkowic D. Cell death goes LIVE: technological advances in real-time tracking of cell death. Cell Cycle. 2010-06-15 [PMID: 20519963]

Details:
Live cell imaging (etoposide treated cell lines & NGF-deprived primary neuronal cultures): Discussion about tools for tracking cell death real-time.

Kim YE, Chen J, Chan JR et al. Engineering a polarity-sensitive biosensor for time-lapse imaging of apoptotic processes and degeneration. Nat Methods. 2010-01-01 [PMID: 19966809]

Details:
Real-time live-cell imaging and time-lapse microscopy of apoptosis: Fig 2 (Cos-7 cells), Fig 3 (neuronal degeneration), Fig 4 (axonal degeneration), Fig 5 (rescue of neuronal degeneration as visualized by pSIVA).

More publications at http://www.novusbio.com/NBP2-29611

Procedures

MSDS (NBP2-29611)
Propidium Iodide

Hazard Information
Chemical Name: Propidium Iodide
CAS Number: 25535-16-4

Hazard Identification
Eye, skin

First Aid Measures
Eye Contact: Irrigate thoroughly with water for at least 15 minutes. Seek medical advice.
Skin Contact: Wash skin thoroughly with soap and water for at least 15 minutes. Remove contaminated clothing and wash before re-use. In severe cases, obtain medical attention.
Inhalation: Remove from exposure, rest and keep warm. In severe cases, seek medical advice.
Ingestion: Wash out mouth thoroughly with water and give plenty of water to drink. Seek medical advice.

Accidental Release Measures
Wear appropriate protective clothing. Inform others to keep a safe distance. Spread inert absorbent material liberally over spillage. If local regulations permit, mop up cautiously with plenty of water and run to waste, diluting greatly with running water. Otherwise transfer to container and arrange removal by disposal company. Wash site of spillage thoroughly with water.

Handling and Storage
Handling: No special handling required. Store at 4oC or colder, protect from light.
Exposure Controls / Personal Protection
Ventilation: Use in an open, well-ventilated area
Gloves: Rubber or plastic
Eye Protection: Lab goggles or face shield
Physical and Chemical Properties
Form: Liquid
Color: Colorless
Odor: Odorless
Melting Point: 220-225 C
Boiling Temperature: No data available
Density: No data available
Vapor Pressure: No data available
Solubility in Water: Very soluble
Flash Point: No data available
Explosion limits: No data available
Ignition Temperature: No data available

Stability and Reactivity
Stable at room temperature
Other Information
Transport: not classified as dangerous

IANBD

Hazard Information
Chemical Name: N-((2-(iodoacetoxy)ethyl)-N-methyl)amino-7-nitrobenz-2-oxa-1,3-diazole (IANBD ester)

Hazard Identification:
The product contains no substances which at their given concentration are considered to be hazardous to health. NOVUS recommends handling all chemicals with caution.

PBS Buffer

Hazard Information
Chemical Name: Phosphate Buffered Saline

Hazard Identification
The product contains no substances which at their given concentration are considered to be hazardous to health.
NOVUS recommends handling all chemicals with caution.

Binding Buffer

Hazard Information
Chemical Name: Proprietary composition

Hazard Identification
The product contains no substances which at their given concentration are considered to be hazardous to health.
NOVUS recommends handling all chemicals with caution.

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