Product Datasheet

Annexin V Apoptosis Kit [FITC]
NBP2-29373-100Tests

Unit Size: 100 Tests
Store at 4C. Do not freeze.

Publications: 20
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Updated 8/21/2018 v.20.1

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**NBP2-29373-100Tests**
Annexin V Apoptosis Kit [FITC]

### Product Information

<table>
<thead>
<tr>
<th><strong>Unit Size</strong></th>
<th>100 Tests</th>
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</thead>
<tbody>
<tr>
<td><strong>Concentration</strong></td>
<td>Concentration is not relevant for this product. Please see the protocols for proper use of this product.</td>
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<tr>
<td><strong>Storage</strong></td>
<td>Store at 4C. Do not freeze.</td>
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<tr>
<td><strong>Conjugate</strong></td>
<td>FITC</td>
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### Product Description

**Description**
Annexin V Apoptosis Kit [FITC] can identify apoptosis at an earlier stage than kits based on DNA fragmentation in the nucleus. However, it is like most assays and has limitations. Since Annexin V staining precedes the loss of membrane integrity which accompanies the later stages of cell death resulting from either apoptotic or necrotic processes, staining with Annexin V-FITC is typically used in conjunction with a live/dead dye such as propidium iodide (PI) or 7-Amino-Actinomycin (7-AAD) to allow the investigator to identify early apoptotic cells (PI negative, Annexin V-FITC positive) from dead cells (PI positive, AnnexinV-FITC positive). Viable cells with intact membranes exclude PI, whereas the membranes of dead and damaged cells are permeable to PI. For this reason, Annexin V staining has to be performed on live cells as opposed to assays which require para-formaldehyde/ethanol fixed cells. The Annexin V assay works in the following manner: Cells that are viable are both Annexin V-FITC and PI negative. While cells that are in early apoptosis are Annexin V-FITC positive and PI negative and cells that are in late apoptosis or already dead are both FITC Annexin V and PI positive. This assay does not distinguish between cells that have undergone apoptotic death versus those that have died as a result of a necrotic pathway because the dead cells will stain with both Annexin V-FITC and PI (see image). However, when apoptosis is measured over time, cells can be often tracked from Annexin V- FITC and PI negative (viable, or no measurable apoptosis), to Annexin V-FITC positive and PI negative (early apoptosis, membrane integrity is present) and finally to Annexin V- FITC and PI positive (end stage apoptosis and death). The movement of cells through these three stages suggests apoptosis. In contrast, a single observation indicating that cells are both Annexin V-FITC and PI positive, in of itself, reveals less information about the process by which the cells underwent their demise. For this reason, it is a good idea to analyze samples from multiple time points.

**Gene ID**
308

**Gene Symbol**
ANXA5

**Species**
Human, Mouse, Rat

**Reactivity Notes**
Human reactivity reported in scientific literature (PMID: 23955790) Mouse reactivity reported in scientific literature (PMID: 22566271). Rat reactivity reported in scientific literature (PMID: 25947082)

**Kit Components**
Annexin V-FITC, 10X Binding Buffer, Propidium Iodide (PI) Solution, 10X PBS Solution, Compensation Control Cells

**Notes**
ADDITIONAL ITEMS REQUIRED (NOT INCLUDED IN THE KIT)
Distilled H2O
Flow Cytometer
Experimental Cells
Centrifuge
Positive Control Cell Line (recommended, not required)

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www.novusbio.com  technical@novusbio.com
**Applications**
Flow Cytometry, Flow (Cell Surface), Immunocytochemistry/Immunofluorescence

**Recommended Dilutions**
Flow Cytometry, Immunocytochemistry/Immunofluorescence, Flow (Cell Surface)

**Application Notes**
Use in Flow cell surface reported in scientific literature (PMID 23955790) Use the Control Cells provided to set up compensation and quadrants. The Control Cells are positive for both Annexin V-FITC and PI. The basal level of apoptosis and necrosis varies considerably within a given cell population. Even in the absence of induced apoptosis, most cell populations will contain a minor percentage of cells that are positive for apoptosis ((Annexin V-FITC positive, PI negative) and dead, necrotic, or in the late stages of apoptosis (Annexin V-FITC positive, PI positive). Thus an untreated cell population is used to define the basal level of apoptotic and dead cells. Determine the percentage of cells that have been induced to undergo apoptosis by subtracting the percentage of apoptotic cells in the untreated from the treated population. Since cell death is the eventual outcome of cells undergoing apoptosis, cells in the late stages of apoptosis will have a damaged membrane and stain positive for PI as well as for Annexin V-FITC. Consequently cells which have undergone necrosis are not distinguishable from those which have undergone apoptosis. Use in Immunocytochemistry/immunofluorescence reported in scientific literature (PMID 25947082). Use in FLOW cytometry reported in scientific literature (PMID 27448441)

**Images**

**Flow Cytometry: Annexin V Apoptosis Kit [FITC] [NBP2-29373]** - Controls run before the experimental samples are analyzed, to adjust the fluorescent compensation on the flow cytometer due to the FITC signal from the Annexin V-FITC bleeding into the Propidium Iodide signal.

**Flow Cytometry: Annexin V Apoptosis Kit [FITC] [NBP2-29373]** - Adherent RAW cells treated with actinomycin-D, detached with a cell detachment solution and stained with the Annexin V Apoptosis Kit [FITC].

**Publications**
<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Details</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Details: Annexin V-FITC-conjugated apoptosis kit was used for analyzing apoptotic cells in experiments involving PC12 cells. The cells with or without 24 hours of Paraquat/PQ treatments (+ dibucaine or cyclosporin A treatments) were subjected to Annexin V-FITC-staining followed by microscopy imaging or flow cytometric analysis (Fig 1D).</td>
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<td>Details: Annexin V - FITC Apoptosis Kit (Imagenex’s CytoGLO Annexin V-FITC Apoptosis Detection Kit 10085K) used for detecting Annexin V binding affinity change (%) in HeLa/TFEB cells treated or not with CeO2 nanoparticles or taxol for 24 h (Figure 3A).</td>
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<td></td>
<td>Details: Annexin V - FITC Apoptosis Kit (Imagenex’s CytoGLO Annexin V-FITC Apoptosis Detection Kit ) used for detecting Annexin V binding in lacidipine and EerI treated GD cells, Gaucher’s disease /GD patient-derived fibroblasts homozygous for the L444P (1448T&gt;C) mutation (GM10915). FLOW data is shown in Figure 3A.</td>
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<td></td>
<td>Details: Annexin V - FITC Apoptosis Kit (Imagenex’s CytoGLO Annexin V-FITC Apoptosis Detection Kit ) used for detecting apoptosis induction in L444P GC patient-derived fibroblasts treated or not with ER-associated degradation / ERAD inhibitors (FIGURE 8)</td>
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<td></td>
<td>Details: Annexin V - FITC Apoptosis Kit (Imagenex’s CytoGLO Annexin V-FITC Apoptosis Detection Kit ) used for detecting Annexin V binding in experiments involving L444P Gaucher’s disease patient-derived fibroblasts.</td>
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<td></td>
<td>Details: Metastatic melanoma cells, Fig 2.</td>
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<td>Details: A2789 human ovarian carcinoma cell line, Fig 12.</td>
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<tr>
<td>More publications at <a href="http://www.novusbio.com/NBP2-29373">http://www.novusbio.com/NBP2-29373</a></td>
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Procedures

MSDS for Non Hazardous Product (NBP2-29373)
Material Safety Data Sheet for Non Hazardous Products

Hazard Information
Chemical Name: Non hazardous products.
Chemical Formula: N/A
CAS Number: N/A
EEC-No: N/A

Hazard Identification
None

First Aid Measures
Eye Contact: None
Skin Contact: None
Inhalation: None
Ingestion: None

Accidental Release Measures
This product either does not contain hazardous constituents or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC. 88/379/EEC, and 67/546/EEC.

Handling and Storage
Exposure Controls / Personal Protection
Other Precautions: None

Physical and Chemical Properties
Form: N/A
Color: N/A
Odor: N/A
Melting Point: N/A
Boiling Temperature: N/A
Density: N/A
Vapor Pressure: N/A
Solubility in Water: N/A
Flash Point: N/A
Explosion limits: N/A
Ignition Temperature: N/A
Limitations
This product is for research use only and is not approved for use in humans or in clinical diagnosis. Kits are guaranteed for 6 months from date of receipt.

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