abcam

Product datasheet

Annexin V-mFluor Violet 450 Apoptosis Staining / Detection Reagent ab219911

1 Image

Overview

Product name	Annexin V-mFluor Violet 450 Apoptosis Staining / Detection Reagent
Detection method	Fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Quantitative
Species reactivity	**Reacts with:** Mammals, Other species
Product overview	Annexin V-mFluor Violet 450 Apoptosis Staining / Detection Reagent (ab219911) is a cell-impermeable reagent designed to bind to phosphatidylserine (PS) residues exposed on the outer cell surface of cells with a flow cytometer or fluorescence microscopy at Ex/Em = 403/554 nm, excited with the violet laser at 405 nm. We recommend using an impermeable nuclear stain such as Propidium Iodide (**ab14083**) or DRAQ7™ (**ab109202**) together with Annexin V-mFluor Violet 450 Detection Reagent to discriminate necrotic and dead cells: plasma membrane is disrupted in these cells and therefore the Annexin V reagent will bind to PS found in the interior of cells.
Notes	Apoptosis is a regulated process of cell death that occurs during embryonic development as well as maintenance of tissue homeostasis. Inappropriately regulated apoptosis is implicated in different disease states, such as neurodegeneration disease and cancer. The apoptosis program is characterized by morphologic features, including loss of plasma membrane asymmetry and attachment, condensation off the cytoplasm and nucleus, and compaction and fragmentation of the nuclear chromatin. Exposure of phosphatidylserine (PS) on the external surface of the cell membrane has been reported to occur in the early phases of apoptotic cell death, during which the cell membrane remains intact. In leukocyte apoptosis, PS on the outer surface of the cell marks the cell for recognition and phagocytosis by macrophages. The human vascular anticoagulant, annexin V, is a 35-36 kDa Ca^{2+} dependent phospholipid binding protein that has a high affinity for PS, and shows minimal binding to phosphatidylcholine and sphingomyelin. Changes in PS asymmetry, which can be analyzed by measuring annexin V binding to the cell membrane, are generally observed before morphological changes associated with apoptosis occurred and before membrane integrity is lost.
Platform	Flow cytometer

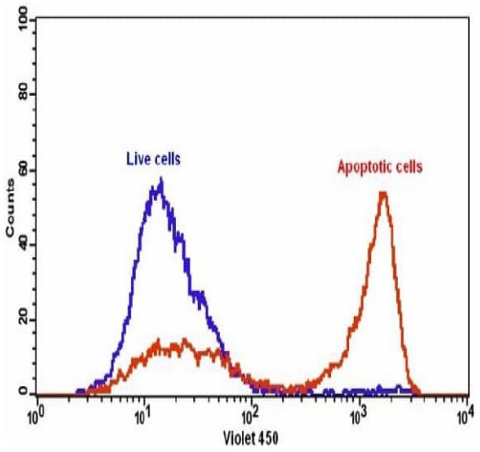
Properties

Storage instructions	Store at -20°C. Please refer to protocols.

Components	100 tests
Annexin V-mFluor 450 conjugate	1 x 200µl

Function	This protein is an anticoagulant protein that acts as an indirect inhibitor of the thromboplastin-specific complex, which is involved in the blood coagulation cascade.
Involvement in disease	Pregnancy loss, recurrent, 3
Sequence similarities	Belongs to the annexin family. Contains 4 annexin repeats.
Domain	The [lL]-x-C-x-x-[DE] motif is a proposed target motif for cysteine S-nitrosylation mediated by the iNOS-S100A8/A9 transnitrosylase complex. A pair of annexin repeats may form one binding site for calcium and phospholipid.
Post-translational modifications	S-nitrosylation is induced by interferon-gamma and oxidatively-modified low-densitity lipoprotein (LDL(ox)) possibly implicating the iNOS-S100A8/9 transnitrosylase complex.

Images



The detection of binding activity of ab219911

Annexin V-mFluor Violet 450 Detection Reagent (ab219911) Detection of phosphatidylserine (PS) exposure in Jurkat cells. Jurkat cells were left untreated (blue) or treated with 1 µM staurosporine (red) in a 37°C, 5% CO_2 incubator for 5 hours. Cells were then incubated with Annexin V Detection Reagent for 30 minutes. The fluorescence intensity of Annexin V-mFluor 450 Detection Reagent was measured with a FACSCalibur (BD systems)flow cytometer using violet laser at Ex/Em = 405/450 nm.

In live non-apoptotic cells, Annexin V-mFluor Violet 450 conjugate detects innate apoptosis in non-induced cells, which is typically 2-6% of all cells. In apoptotic cells Annexin V-mFluor Violet450 conjugate binds to phosphatidylserine, which is located on the outer leaflet of the cell membrane, resulted in increased staining intensity.

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