

ab14147

Annexin V-Cy5

Apoptosis Detection

Reagent

Instructions for Use

For the rapid, sensitive and accurate detection of apoptosis in various samples.

This product is for research use only and is not intended for diagnostic use.

Table of Contents

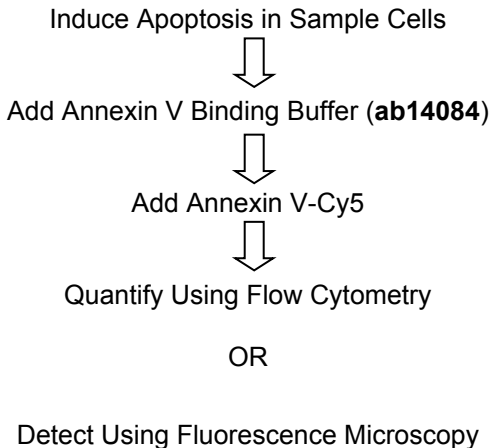
1. Overview	3
2. Protocol Summary	3
3. Components and Storage	4
4. Assay Protocol	5
5. Troubleshooting	7

1. Overview

Annexin V-Cy5 is a bright fluorescent reagent for detecting of the early stages of apoptosis. During apoptosis, phosphatidylserine (PS) is translocated from the cytoplasmic face of the plasma membrane to the cell surface.

Annexin V has a strong, Ca^{2+} -dependent affinity for PS and therefore serves as a probe for detecting apoptosis. Cy5 fluorescent dye produces an intense signal in the far-red region of the spectrum and therefore it is very useful for multiple labeling of cells with green and red colored fluorescent probes. Cy5 yields fluorescence with a λ_{max} emission of 670 nm.

2. Protocol Summary



3. Components and Storage

A. Kit Components

Item	Quantity
Annexin V-Cy5 Apoptosis Detection Reagent	1 vial

Store at +4°C. Do not freeze. Stable for one year under proper storage conditions.

B. Additional Materials Required

- 1X Annexin V Binding Buffer (**ab14084**)
- Microcentrifuge
- Pipettes and pipette tips
- Flow Cytometer or Fluorescence Microscope
- Glass slides and coverslips

4. Assay Protocol

1. Incubation of cells with Annexin V-Cy5:

- a) Induce apoptosis by desired methods.
- b) Collect 1×10^5 cells by centrifugation.
- c) Re-suspend cells in 500 μ l of 1X Annexin V Binding Buffer
- d) Add 1 μ l of Annexin V-Cy5.
- e) Incubate at room temperature for 5 min in the dark.

Proceed to Step 2 or 3 below depending on method of analysis.

2. Quantification by Flow Cytometry:

Analyze Annexin V-Cy5 binding by flow cytometry (Ex = 649 nm; Em = 670 nm) using Helium-Neon Laser.

For analyzing ***adherent cells***, gently trypsinize and wash cells once with serum-containing media before incubation with Annexin V-Cy5 (Step 1.c-e).

3. Detection by Fluorescence Microscopy:

- a) Place the cell suspension from Step 1.e on a glass slide. Cover the cells with a glass coverslip.

For analyzing **adherent cells**, grow cells directly on a coverslip. Following incubation (1.e), invert coverslip on glass slide and visualize cells. The cells can also be washed and fixed in 2% paraformaldehyde before visualization.

Note:

Cells must be incubated with Annexin V-Cy5 before fixation since any cell membrane disruption can cause non-specific binding of Annexin V to PS on the inner surface of the cell membrane.

- b) Observe the cells under a fluorescence microscope using a Cy5 filter or a FITC/Cy3/Cy5 triple band filter set (Chroma Technology) if you perform triple labeling with these dyes, or detect cells using CCD camera.

Cells that have bound Annexin V-Cy5 will show bright red-blue staining on the plasma membrane.

5. Troubleshooting

Problem	Reason	Solution
High Background	Cell density is higher than recommended	Refer to datasheet and use the suggested cell number
	Increased volumes of components added	Use calibrated pipettes accurately
	Incubation of cell samples for extended periods	Refer to datasheets and incubate for exact times
	Use of extremely confluent cells	Perform assay when cells are at 80-95% confluency
	Contaminated cells	Check for bacteria/ yeast/ mycoplasma contamination

Problem	Reason	Solution
Lower signal levels	Washing cells with PBS before/after fixation (adherent cells)	Always use binding buffer for washing cells
	Cells did not initiate apoptosis	Determine the time-point for initiation of apoptosis after induction (time-course experiment)
	Very few cells used for analysis	Refer to data sheet for appropriate cell number
	Incorrect setting of the equipment used to read samples	Refer to datasheet and use the recommended filter setting
	Use of expired kit or improperly stored reagents	Always check the expiry date and store the components appropriately

Problem	Reason	Solution
Erratic results	Uneven number of cells seeded in the wells	Seed only healthy cells (correct passage number)
	Adherent cells dislodged at the time of experiment	Perform experiment gently and in duplicates or triplicates for each treatment
	Incorrect incubation times or temperatures	Refer to datasheet & verify correct incubation times and temperatures
	Incorrect volumes used	Use calibrated pipettes and aliquot correctly
	Increased or random staining observed in adherent cells	Always stain cells with Annexin before fixation (makes cell membrane leaky)

For further technical questions please do not hesitate to contact us by email (technical@abcam.com) or phone (select “*contact us*” on www.abcam.com for the phone number for your region).

UK, EU and ROW

Email:

technical@abcam.com

Tel: +44 (0)1223 696000

www.abcam.com

US, Canada and Latin America

Email: us.technical@abcam.com

Tel: 888-77-ABCAM (22226)

www.abcam.com

China and Asia Pacific

Email: hk.technical@abcam.com

Tel: 108008523689 (中國聯通)

www.abcam.cn

Japan

Email: technical@abcam.co.jp

Tel: +81-(0)3-6231-0940

www.abcam.co.jp