

**ab14142**

**Annexin V-Cy3**

**Apoptosis Detection Kit**

## Instructions for Use

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

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



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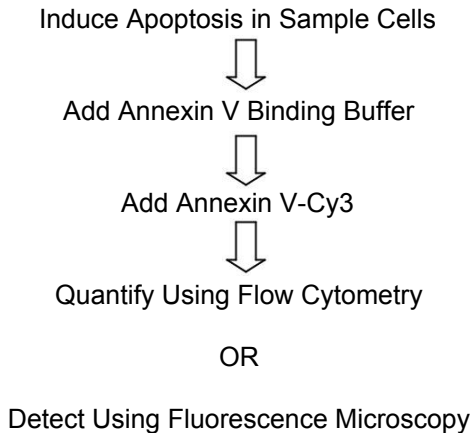
# 1. Overview

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Annexin V-Cy3 Apoptosis Detection Kit is based on the observation that soon after initiating apoptosis, cells translocate the membrane phosphatidyl-serine (PS) from the inner face of the plasma membrane to the cell surface. Once on the cell surface, PS can be easily detected by staining with a fluorescent conjugate of Annexin V, a protein that has a high affinity for PS. The one-step staining procedure takes only 10 minutes. Detection can be analyzed by flow cytometry or by fluorescence microscopy.

# 2. Protocol Summary

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### 3. Components and Storage

#### A. Kit Components

Item	Quantity
Annexin V-Cy3	500 $\mu$ L
1X Binding Buffer	50 mL

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

#### B. Additional Materials Required

- Microcentrifuge
- Pipettes and pipette tips
- Flow Cytometer or Fluorescence Microscope
- Glass slides and coverslips
- 2% paraformaldehyde

## 4. Assay Protocol

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### 1. Incubation of cells with Annexin V-Cy3:

- a) Induce apoptosis by desired methods.
- b) Collect  $1-5 \times 10^5$  cells by centrifugation.
- c) Re-suspend cells in 500  $\mu$ l of 1X Binding Buffer
- d) Add 5  $\mu$ l of Annexin V-Cy3.
- 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:

- a) Analyze Annexin V-Cy3 binding by flow cytometry (Ex = 543 nm; Em = 570 nm) using the phycoerythrin emission signal detector (usually FL2).

For analyzing **adherent cells**, gently trypsinize and wash cells once with serum-containing media before incubation with Annexin V-Cy3 (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-Cy3 *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.

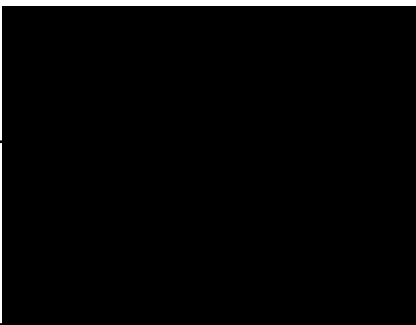
- b) Observe the cells under a fluorescence microscope using a rhodamine filter. Cells that have bound Annexin V-Cy3 will show red staining in the plasma membrane.

## 5. Troubleshooting

<b>Problem</b>	<b>Reason</b>	<b>Solution</b>
<b>High Background</b>	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
<p><b>Lower signal levels</b></p>	<p>Washing cells with PBS</p> <p>(fixation cells)</p>		<p>Always bind for wash</p>
	<p>Cells did not initiate apoptosis</p>		<p>Determine time-point for apoptosis induction (time-course experiment)</p>
	<p>Very few cells used for analysis</p>		<p>Refer to sheet for appropriate cell number</p>
	<p>Incorrect setting of the equipment</p>		<p>Refer to datasheet</p>

	used to read samples		use the recon filter s
	Use of expired kit or improperly stored reagents		Always the ex and s comp appro

<b>Problem</b>	<b>Reason</b>	<b>Solution</b>
<b>Erratic results</b>	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](mailto:technical@abcam.com)) or phone (select “contact us” on [www.abcam.com](http://www.abcam.com) for the phone number for your region).**



**UK, EU and ROW**

Email: [technical@abcam.com](mailto:technical@abcam.com)

Tel: +44 (0)1223 696000

[www.abcam.com](http://www.abcam.com)

**US, Canada and Latin America**

Email: [us.technical@abcam.com](mailto:us.technical@abcam.com)

Tel: 888-77-ABCAM (22226)

[www.abcam.com](http://www.abcam.com)

**China and Asia Pacific**

Email: [hk.technical@abcam.com](mailto:hk.technical@abcam.com)

[www.abcam.cn](http://www.abcam.cn)

**Japan**

Email: [technical@abcam.co.jp](mailto:technical@abcam.co.jp)

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

[www.abcam.co.jp](http://www.abcam.co.jp)