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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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(FOR RESEARCH USE ONLY. DO NOT USE IT IN CLINICAL DIAGNOSIS !)

## Annexin V-APC / 7-AAD Apoptosis Detection Kit

**Catalog No:** E-CK-A218

**Sizes:** 20 Assays / 50 Assays / 100 Assays / 200 Assays

Cat.	Products	20 Assays	50 Assays	100 Assays	200 Assays	Storage
E-CK-A117	Annexin V-APC Reagent	100 µL	250 µL	500 µL	1 mL	2~8 °C
E-CK-A151	Annexin V Binding Buffer (10 ×)	1.4 mL×2	5.5 mL	11 mL	11 mL×2	2~8 °C
E-CK-A162	7-AAD Viability Staining Solution	100 µL	250 µL	500 µL	1 mL	-20 °C
<b>Manual</b>				<b>One Copy</b>		

This manual must be read attentively and completely before using this product.

If you have any problems, please contact our Technical Service Center for help.

Phone: 240-252-7368(USA) Fax: 240-252-7376(USA)

Email: [techsupport@elabscience.com](mailto:techsupport@elabscience.com)

Website: [www.elabscience.com](http://www.elabscience.com)

Please kindly provide us the lot number (on the outside of the box) of the kit for more efficient service.

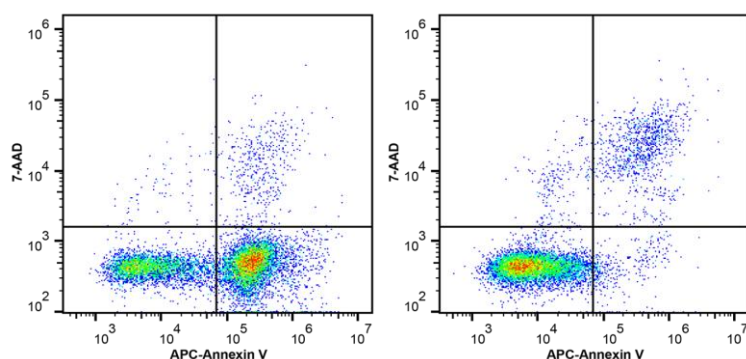
## Introduction

Elabscience® Annexin V-APC / 7-AAD Cell Apoptosis Detection kit is developed to identify apoptotic and necrotic cells.

Annexin V is a member of the annexin family, which binds to phosphatidylserine (PS) in a calcium-dependent manner. Annexin V-APC, the APC-conjugated format, binds specifically to the PS on the outer leaflet of apoptotic cell membrane and can be detected with flow cytometry or fluorescence microscopy.

7-Amino Actinomycin D (7-AAD) has a high DNA binding constant and is efficiently excluded by intact cells. It is useful for DNA analysis and dead cell discrimination during flow cytometric analysis. Due to the loss of integrity of membrane, 7-AAD can enter late apoptotic or necrotic cells to stain DNA. Cells at different apoptotic stages can be distinguished by using Annexin V and 7-AAD.

*Jurkat cells were treated with 5  $\mu$ M Camptothecin and detected with this kit.*



Jurkat cells were cultured with (**Left**) or without (**Right**) 5  $\mu$ M Camptothecin for 4 h. Annexin V-APC single-positive cells were early apoptotic cells, Annexin V-APC and 7-AAD double-positive cells were necrotic or late apoptotic cells, and 7-AAD single-positive cells were naked nuclei.

## Instructions

Dilute Annexin V Binding Buffer (10  $\times$ ) with DI water to 1  $\times$  Annexin V Binding working solution before use. For example, take 1 mL Annexin V Binding Buffer (10  $\times$ ) [**E-CK-A151**] and add it to 9 mL DI water to get 10 mL Annexin V Binding working solution.

## Staining Procedure

### One-step process

1. Induce apoptosis of suspension cells with reagents of interest. Collect cell cultures, centrifuge at 300 g for 5 min and discard the supernatant. Add PBS to wash the cells and resuspend the cells gently followed by the cell counting.

**Tip:** This product is only validated in suspension cells. Good cell viability is the key to the experiment. When the adherent cells are used for apoptotic detection, treatments like digestion may increase the ratio of necrotic or apoptotic cells and cause uncontrollable effects on the experimental results. Please be aware!

2. Split the cell suspension into tubes, 1~5  $\times 10^5$  cells for each, centrifuge at 300 g for 5 min and discard the supernatant. Add PBS to wash the cells and discard the supernatant. Add 500  $\mu$ L of 1  $\times$  Annexin V Binding working solution to resuspend the cells.

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3. Add 5  $\mu\text{L}$  of Annexin V-APC and 5  $\mu\text{L}$  of 7-AAD to each tube.
  4. Gently vortex the cells and incubate at room temperature for 15~20 min in the dark.
  5. Analyze the cells immediately with proper machine settings. Otherwise, place the cells on ice in the dark and analyze within 1 h.

### Two-step process

1. Induce apoptosis of suspension cells with reagents of interest. Collect cell cultures, centrifuge at 300 g for 5 min and discard the supernatant. Add PBS to wash the cells and resuspend the cells gently followed by the cell counting.  
**Tip: This product is only validated in suspension cells. Good cell viability is the key to the experiment. When the adherent cells are used for apoptotic detection, treatments like digestion may increase the ratio of necrotic or apoptotic cells and cause uncontrollable effects on the experimental results. Please be aware !**
2. Split the cell suspension into tubes,  $1\sim5 \times 10^5$  cells for each, centrifuge at 300 g for 5 min and discard the supernatant. Add PBS to wash the cells and discard the supernatant. Add 100  $\mu\text{L}$  of 1 $\times$ Annexin V Binding working solution to resuspend the cells.
3. Add 2.5  $\mu\text{L}$  of Annexin V-APC and 2.5  $\mu\text{L}$  of 7-AAD to each tube.  
(Attributed to the higher resolution of two-step protocol, half the amount of the reagents can still guarantee a result of matched quality as in the one-step protocol. It's also recommended that users titrate the reagents for optimal performance in specific models.)
4. Gently vortex the cells and incubate at room temperature for 15~20 min in the dark.
5. Add 400  $\mu\text{L}$  of 1 $\times$ Annexin V Binding working solution to the tube, and mix gently.
6. Analyze the cells immediately with proper machine settings. Otherwise, place the cells on ice in the dark and analyze within 1 h.

### Storage

Annexin V-APC Reagent and 7-AAD Viability Staining Solution should be stored in dark. 7-AAD Viability Staining Solution should be split into small tubes and stored at  $-20\text{ }^{\circ}\text{C}$  for 12 months. Other reagents are stored at  $2\sim8\text{ }^{\circ}\text{C}$  for 12 months.

### Cautions

1. For maximal assay performance, this kit should be used within 12 months. Avoid freeze / thaw cycles.
2. For FCM analysis, please set untreated cells stained with both Annexin V-APC and 7-AAD as negative control. As for compensation controls, please use drug-treated cells stained with either Annexin V-APC or 7-AAD.
3. Annexin V-APC can be detected in APC channel while 7-AAD can be detected in PerCP/Cy5.5 channel.
4. Detect apoptosis as soon as possible after staining to avoid the increase number of apoptosis or necrosis
5. Avoid extended exposure of the samples to direct light to protect the fluorophores from quenching.
6. For your safety and health, please wear the lab coat and disposable gloves before the experiments.