

## Instruction Manual

<b>Catalog Number</b>	PK-CA577-K190-100	
<b>Description</b>	Activation of caspases plays a central role in apoptosis. The PromoKine Red Multi-Caspase Staining Kit provides a convenient means for detecting activated caspases in living cells. The assay utilizes the caspase family inhibitor VAD-FMK conjugated to sulfo-rhodamine (Red-VAD-FMK) as the fluorescent in situ marker. Red-VAD-FMK is cell permeable, nontoxic, and irreversibly binds to activated caspases in apoptotic cells. The red fluorescence label allows detection of activated caspases in apoptotic cells directly by fluorescence microscopy, flow cytometry, or fluorescence plate reader.	
<b>Quantity</b>	100 assays	
<b>Kit Components</b>	Components	Quantity
	Red-VAD-FMK	100 µl
	Wash Buffer	2 x 100 ml
	Z-VAD-FMK	10 µl
<b>Applications / Assay Protocol</b>	<p><b>A. Staining Procedure:</b></p> <ol style="list-style-type: none"> <li>1. Induce apoptosis in cells (<math>1 \times 10^6</math>/ml) by desired method. Concurrently incubate a control culture without induction. An additional negative control can be prepared by adding the caspase inhibitor Z-VAD-FMK at 1 µl/ml to an induced culture to inhibit caspase activation.</li> <li>2. Aliquot 300 µl each of the induced and control cultures into eppendorf tubes.</li> <li>3. Add 1 µl of Red-VAD-FMK into each tube and incubate for 0.5-1 hour at 37°C incubator with 5% CO<sub>2</sub>.</li> <li>4. Centrifuge cells at 3,000 rpm for 5 minutes and remove supernatant.</li> <li>5. Resuspend cells in 0.5 ml of Wash Buffer, and centrifuge again.</li> <li>6. Repeat Step 5.</li> </ol> <p>Proceed to B, C, or D depending on methods of analysis.</p> <p><b>B. Quantification by Flow Cytometry:</b> For flow cytometric analysis, resuspend cells in 300 µl of Wash buffer. Put samples on ice. Analyze samples by flow cytometry using the FL-2 channel (Ex. 540 nm; Em. = 570 nm).</p> <p><b>C. Detection by Fluorescence Microscopy:</b> For fluorescence microscopic analysis, resuspend cells in 100 µl Wash buffer. Put one drop of the cell suspension onto a microslide and cover with a coverslip. Observe cells under a fluorescence microscope using rhodamine filter. Caspase-3 positive cells appear to have brighter red signals, whereas Caspase-3 negative control cells show much weaker signal.</p> <p><b>D. Analysis by Fluorescence Plate Reader:</b> For analysis with fluorescence plate reader, resuspend cells in 100 µl Wash Buffer and then transfer the cell suspension to each well of the black microtiter plate. Measure the fluorescence intensity at Ex. = 540 nm and Em. = 570 nm. For control, use wells containing unlabeled cells.</p>	
<b>Storage &amp; Stability</b>	Store kit at -20°C upon arrival. Store individual reagents as indicated on the respective labels.	

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