

## Product datasheet

# Caspase-3 Activity Assay Kit (Fluorometric) ab252897

★★★★★ [1 Abreviews](#) [15 References](#) [6 Images](#)

### Overview

<b>Product name</b>	Caspase-3 Activity Assay Kit (Fluorometric)
<b>Detection method</b>	Fluorescent
<b>Sample type</b>	Adherent cells, Suspension cells
<b>Sensitivity</b>	11.25 mU/well
<b>Product overview</b>	Caspase-3 Activity Assay Kit (Fluorometric) (ab252897) allows the detection and quantification of Caspase-3 activity by using a synthetic substrate DEVD-AFC (AFC: 7- amino-4-trifluoromethyl coumarin), which upon cleavage by Caspase-3 will emit a strong, stable fluorometric signal (Ex/Em= 400/505 nm). The assay is sensitive, fast and allows the high-throughput quantification of Caspase-3 activity in cell lysate or adherent cells. It can be used to evaluate induction of apoptosis and/or evaluation of apoptosis inhibitors. As little as 11.25 mU of activity per well and less than 500 apoptotic cells can be detected.
<b>Notes</b>	This product is manufactured by BioVision, an Abcam company and was previously called K533 Caspase-3 Activity Assay Kit II (Fluorometric). K533-100 is the same size as the 100 test size of ab252897.
<b>Platform</b>	Microplate

### Properties

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

Components	100 tests
Ac-DEVD-AFC (1 mM)	1 x 500µl
AFC Standard (1 mM)	1 x 100µl
Caspase 2X Reaction Buffer	1 x 20ml
Caspase Cell Lysis Buffer	1 x 100ml
Caspase-3 (Positive Control)	1 vial
DTT (1 M)	1 x 1ml

Components	100 tests
Staurosporine (1 mM)	1 x 200µl

**Function**

Involved in the activation cascade of caspases responsible for apoptosis execution. At the onset of apoptosis it proteolytically cleaves poly(ADP-ribose) polymerase (PARP) at a '216-Asp-Gly-217' bond. Cleaves and activates sterol regulatory element binding proteins (SREBPs) between the basic helix-loop-helix leucine zipper domain and the membrane attachment domain. Cleaves and activates caspase-6, -7 and -9. Involved in the cleavage of huntingtin.

**Tissue specificity**

Highly expressed in lung, spleen, heart, liver and kidney. Moderate levels in brain and skeletal muscle, and low in testis. Also found in many cell lines, highest expression in cells of the immune system.

**Sequence similarities**

Belongs to the peptidase C14A family.

**Post-translational modifications**

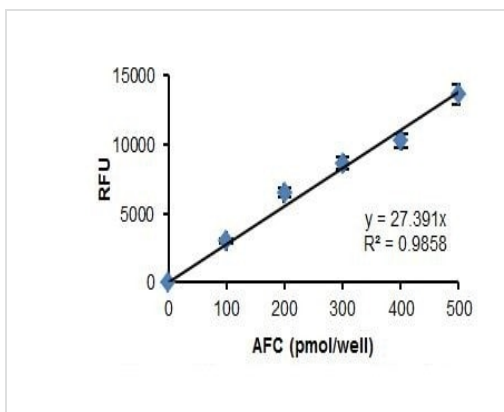
Cleavage by granzyme B, caspase-6, caspase-8 and caspase-10 generates the two active subunits. Additional processing of the propeptides is likely due to the autocatalytic activity of the activated protease. Active heterodimers between the small subunit of caspase-7 protease and the large subunit of caspase-3 also occur and vice versa.

S-nitrosylated on its catalytic site cysteine in unstimulated human cell lines and denitrosylated upon activation of the Fas apoptotic pathway, associated with an increase in intracellular caspase activity. Fas therefore activates caspase-3 not only by inducing the cleavage of the caspase zymogen to its active subunits, but also by stimulating the denitrosylation of its active site thiol.

**Cellular localization**

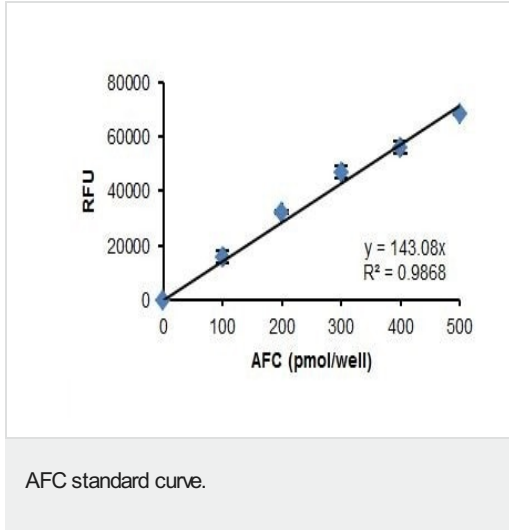
Cytoplasm.

**Images**

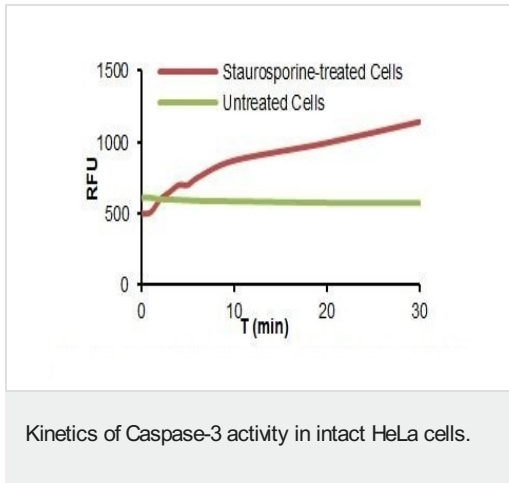


White, clear bottom microtitre plate.

AFC standard curve.

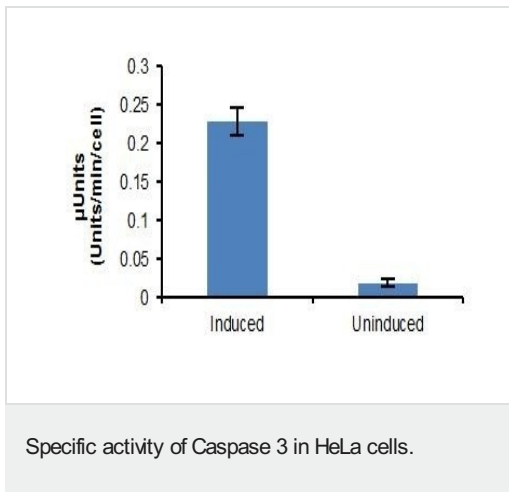


White, opaque microtitre plate.

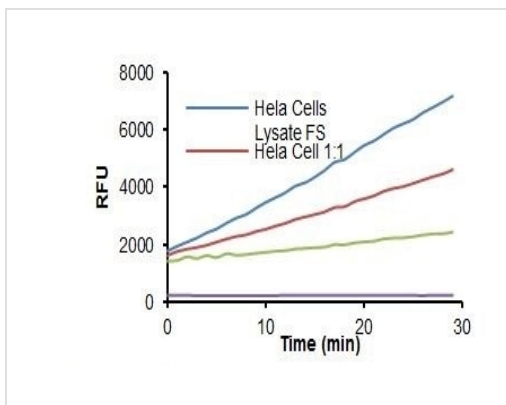


Apoptosis was induced using Staurosporine ([10  $\mu$ M]; 4.5 hours).

White, clear bottom microtiter plate.



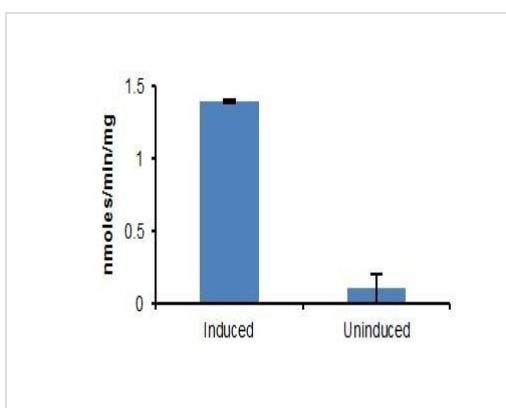
Staurosporine-induced:  $0.227 \pm 0.01$   $\mu$ U/cell; Untreated:  $0.018 \pm 0.004$   $\mu$ U/cell. White, clear bottom microtiter plate.



Kinetics of Caspase-3 activity using HeLa lysate.

Apoptosis was induced using Staurosporine ([10  $\mu$ M]; 4.5 hours).

White, opaque microtitre plate.



Specific activity of Caspase-3 in HeLa cells.

Staurosporine-treated: 1.39  $\pm$  0.01 U/mg; Untreated. White, opaque

microtitre plate.

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