Revision 1

Store at -20C

#12690

Effector Caspases and Substrates Antibody Sampler Kit

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Caspase-3 (8G10) Rabbit mAb	9665	40 µl	17, 19, 35 kDa	Rabbit IgG
Caspase-6 Antibody	9762	40 µl	15, 35 kDa	Rabbit
Caspase-7 (D2Q3L) Rabbit mAb	12827	40 µl	20, 35 kDa	Rabbit IgG
Lamin A/C (4C11) Mouse mAb	4777	40 µl	74 (Lamin A), 63 (Lamin C) kDa	Mouse IgG2a
Lamin B1 (D4Q4Z) Rabbit mAb	12586	40 µl	68, 25 kDa	Rabbit IgG
PARP Antibody	9542	40 µl	89, 116 kDa	Rabbit
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat
Anti-mouse IgG, HRP-linked Antibody	7076	100 µl		Horse

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Effector Caspases and Substrates Antibody Sampler Kit provides an economical means to evaluate the activation of effector (executioner) caspases. The kit contains enough primary antibody to perform at least four western blots per primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

Apoptosis is a regulated physiological process leading to cell death. Caspases, a family of cysteine acid proteases, are central regulators of apoptosis. Caspase-3 (CPP-32, Apoptain, Yama, SCA-1), Caspase-6 (Mch2), and Caspase-7 (CMH-1, Mch3, ICE-LAP3) are effector caspases functioning in cellular apoptotic processes (1-6). Upon apoptotic stimulation, initiator caspases such as caspase-9 (ICE-LAP6, Mch6) are cleaved and activated (7). The activated upstream caspases further process downstream executioner caspases by cleaving them into activated large and small subunits, thereby initiating a caspase cascade leading to apoptosis (4,6,8-10).

PARP, a 116 kDa nuclear poly (ADP-ribose) polymerase, appears to be involved in DNA repair in response to environmental stress (11). This protein can be cleaved by many ICE-like caspases *in vitro* (1,12) and is one of the main cleavage targets of caspase-3 *in vivo* (10,13). In human PARP, cleavage occurs between Asp214 and Gly215, which separates the PARP amino-terminal DNA binding domain (24 kDa) from the carboxy-terminal catalytic domain (89 kDa) (10,12). PARP helps cells to maintain their viability; cleavage of PARP facilitates cellular disassembly and serves as a marker of cells undergoing apoptosis (14).

Lamins are nuclear membrane structural components that are important in maintaining normal cell functions, such as cell cycle control, DNA replication, and chromatin organization (15-17). Lamins have been subdivided into types A and B. Type-A lamins consist of lamin A and C, which arise from alternative splicing of the lamin A gene *LMNA*. Lamin A and C are cleaved by caspases into large (41-50 kDa) and small (28 kDa) fragments, which can be used as markers for apoptosis (18,19). Type-B lamins consist of lamin B1 and B2, encoded by separate genes (20-22). Lamin B1 is also cleaved by caspases during apoptosis (23).

Background References

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