Procaspase Antibody Sampler Kit

Catalog No.	E-AB-K3110	**Reactivity**	Human
Storage	Store at -20℃, Avoid freeze / thaw cycles	**Applications**	WB
Buffer	PBS with sodium azide and glycerol.	**Dilution**	1:500-1:2000

Note: Centrifuge before opening to ensure complete recovery of vial contents.

Included	Product	Isotype	Mol. Wt.	Size
E-AB-30756		IgG	37kDa	20μL
E-AB-30757		IgG	35kDa	20μL
E-AB-30758	CASP7 Polyclonal Antibody	Rabbit IgG	35kDa	20μL
E-AB-30759		IgG	55kDa	20μL
E-AB-30760	CASP9 Polyclonal Antibody	Rabbit IgG	46kDa	20μL
E-AB-31899	LMNA Polyclonal Antibody	Rabbit IgG	74kDa,65kDa	20μL
E-AB-36084		IgG	110kDa	20μL
E-AB-1003	Goat Anti-Rabbit IgG(H+L)(peroxidase/HRP conjugated)	Goat		120μL

Product Description

The Procaspase Antibody Sampler Kit provides an economical means to evaluate the abundance and activation of caspases. The kit contains enough primary antibody to perform at least two western blots per primary antibody.

Please visit www.elabscience.com for validation data and a complete listing of recommended companion products.

Background

Apoptosis is a regulated physiological process leading to cell death. Caspases, a family of cysteine acid proteases, are central regulators of apoptosis. Initiator caspases (including 2, 8, 9, 10 and 12) are closely coupled to proapoptotic signals, which include the FasL, TNF-α, and DNA damage. Once activated, these caspases cleave and activate downstream effector caspases (including 3, 6 and 7), which in turn cleave cytoskeletal and nuclear proteins like PARP, α-fodrin, DFF and lamin A, and induce apoptosis. Caspase-8 (FLICE, Mch5, MACH) and Caspase-9 (ICE-LAP6, Mch6) are initiator caspases. CD95 receptor (Fas/APO-1) and tumor necrosis factor receptor 1 (TNFR1) activate caspase-8, leading to the release of the caspase-8 active fragments, p18 and p10. Cytochrome c released from the mitochondria associates with procaspase-9 (47 kDa)/Apaf 1. Apaf-1 mediated activation of caspase-9 involves intrinsic proteolytic processing resulting in cleavage at Asp315 and producing a p35 subunit. Another cleavage occurs at Asp330 producing a p37 subunit that can serve to amplify the apoptotic response. Caspase-3 (CPP-32, Apoptain, Yama, SCA-1), Caspase-6 (Mch2), and Caspase-7 (CMH-1, Mch3, ICE-LAP3) are effector caspases. Activation of caspase-3 requires proteolytic processing of its inactive zymogen/proform into activated p17 and p12 subunits. Procaspase-7 is activated through proteolytic processing by upstream caspases at Asp23, Asp198, and Asp206 to produce the mature subunits. Procaspase-6 is cleaved by caspase-3 at Asp23, Asp179 and Asp193 to form active large (p18) and small (p11) subunits. PARP, a 116 kDa nuclear poly (ADP-ribose) polymerase, appears to be involved in DNA repair in response to environmental stress . This protein can be cleaved by many ICE-like caspases in vitro and is one of the main cleavage targets of caspase-3 in vivo. In human PARP, the 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). PARP helps cells to maintain their viability; cleavage of PARP facilitates cellular disassembly and serves as a marker of cells undergoing apoptosis. Lamins are nuclear membrane structural components that are important in maintaining normal cell functions such as cell cycle control, DNA replication, and chromatin organization. Lamin A/C is cleaved by caspase-6 and serves as a marker for caspase-6 activation. During apoptosis, lamin A/C is specifically cleaved into large (41-50 kDa) and small (28 kDa) fragments. The cleavage of lamins results in nuclear disregulation and cell death.

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