#2043 Store at –20°C

Jurkat Apoptosis Cell Extracts (etoposide)

☑ 100 µl
(10 western blots)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

Product Includes	Product #	Quantity
Apoptosis Cell Extracts (Jurkat untreated)	32536	100 ul
Apoptosis Cell Extracts (Jurkat +Etoposide)	49567	100 ul

Storage: *Supplied in SDS Sample Buffer:* 62.5 mM Tris-HCl (pH 6.8 at 25°C), 2% w/v SDS, 10% glycerol, 50 mM DTT, 0.01% w/v bromophenol blue or phenol red. *Store at –20°C, or at –80°C for long-term storage.*

For product specific protocols and a complete listing of recommended companion products, please see the product web page at www.cellsignal.com.

Description: *Apoptosis Cell Extracts (Jurkat untreated):* Total cell extracts from Jurkat cells serve as a negative control. Supplied in SDS Sample Buffer.

Apoptosis Cell Extracts (Jurkat +Etoposide): Total cell extracts from Jurkat cells treated with 25 µM etoposide for 5 hours serve as a positive control for activated apoptotic cascades. Etoposide treatment induces proteolytic cleavage of various apoptosis-related proteins including caspases, IAP, and PARP. Supplied in SDS Sample Buffer.

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 8, 9, 10 and 12) are closely coupled to proapoptotic signals. 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. Cytochrome c released from mitochondria is coupled to the activation of caspase-9, a key initiator caspase (1). Proapoptotic stimuli include the FasL, TNF-α, DNA damage and ER stress. Fas and TNFR activate caspases 8 and 10 (2), DNA damage leads to the activation of caspase-9 and ER stress leads to the calcium-mediated activation of caspase-12 (3). The inhibitor of apoptosis protein (IAP) family includes XIAP and survivin and functions by binding and inhibiting several caspases (4,5). Smac/Diablo, a mitochondrial protein, is released into the cytosol upon mitochondrial stress and competes with caspases for binding of IAPs. The interaction of Smac/Diablo with IAPs relieves the inhibitory effects of the IAPs on caspases (6).

Directons for Use: Boil for 3 minutes prior to use. Load 10 µl of untreated and etoposide treated Jurkat Apoptosis Control Cell Extracts (etoposide) per lane.

Background References:

(1) Baker, S.J. and Reddy, E.P. (1998) *Oncogene* 17, 3261-3270.

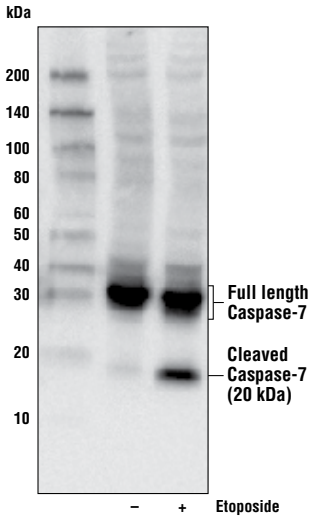
(2) Budihardjo, I. et al. (1999) *Annu. Rev. Cell Dev. Biol.* 15, 269-290.

(3) Nakagawa, T. et al. (2000) *Nature* 403, 98-103.

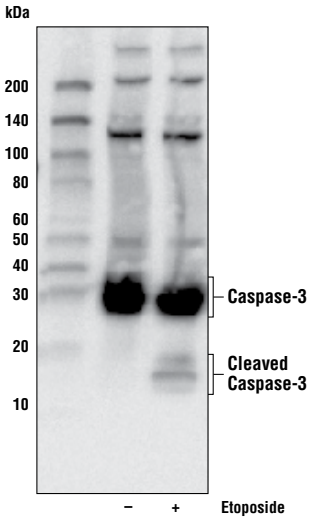
(4) Deveraux, Q. L. et al. (1998) *EMBO J.* 17, 2215-2223.

(5) Li, F. et al. (1998) *Nature* 396, 580-584.

(6) Du, C. et al. (2000) *Cell* 102, 33-42.

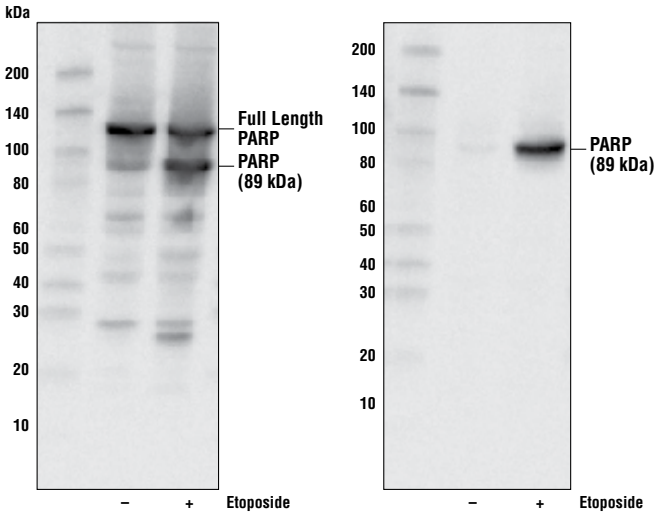


Western blot analysis of Jurkat Apoptosis Cell Extracts #2043, using Caspase-7 Antibody, #9492.



Western blot analysis of Jurkat Apoptosis Cell Extracts #2043, using Caspase-3 (8G10) Rabbit mAb, #9665.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Western blot analysis of Jurkat Apoptosis Cell Extracts #2043, using PARP Antibody #9542 (left), and Cleaved PARP (Asp214) (D64E10) XP® Rabbit mAb #5625 (right).