

#2928 Store at -20°C

DAPK3/ZIPK Antibody

✓ 100 µl
(10 western blots)

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

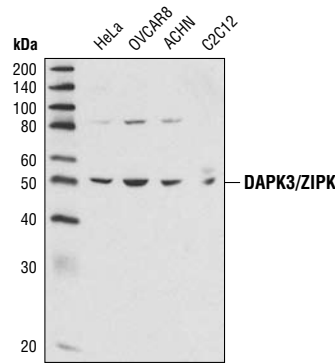
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, (Mk)	52 kDa	Rabbit**

Background: Death-associated protein kinase (DAPK) is a Ca²⁺/calmodulin-regulated serine/threonine kinase that participates in a wide range of apoptotic signals including interferon-γ, tumor necrosis factor α, Fas, activated c-Myc, and detachment from the extracellular matrix. In addition to the kinase domain and calmodulin regulatory segment, DAPK also has eight ankyrin repeats, a cytoskeleton binding region, and a conserved death domain (1-3). Deletion of the calmodulin-regulatory domain generates a constitutively active mutant kinase. Ectopic expression of wild-type DAPK induced cell death in HeLa cells. Conversely, expression of a catalytically inactive mutant protected cells from interferon-γ-induced cell death (4). The catalytic domain of DAPK has very high sequence similarity to vertebrate myosin light chain kinase (MLCK) and a RXX(S/T)X motif derived from myosin light chain protein was shown to be phosphorylated *in vitro* by DAPK (5).

The DAPK family consists of several kinases including DAPK, DAPK2/DRP-1 (6), and DAPK3/ZIPK/DLK (7-9) with homology in their catalytic domain. Overexpression of DAPK3/ZIPK, but not a catalytically inactive mutant, can induce apoptosis (7). DAPK3 was also identified as a myosin light chain kinase, demonstrating ability to phosphorylate the regulatory light chain of myosin II in a Ca²⁺/calmodulin-independent manner (8). In addition to an amino-terminal kinase domain, DAPK3 contains a carboxy-terminal leucine zipper domain that mediates interaction with leucine zipper transcription factors such as ATF4 (7). DAPK3 is predominantly localized to the nucleus and has been found in PML oncogenic domains (PODs) associated with DAXX and PAR-4, and can phosphorylate PAR-4 *in vitro* (10,11). In addition, DAPK3 can phosphorylate STAT3 at Ser727 to enhance its transcriptional activity (12).

Specificity/Sensitivity: DAPK3/ZIPK Antibody detects endogenous levels of total DAPK3/ZIPK protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues at the carboxyl terminus of human DAPK3/ZIPK. Antibodies were purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell lines using DAPK3/ZIPK Antibody.

Background References:

- (1) Kimchi, A. (1999) *Ann Rheum Dis* 58, 114-119.
- (2) Cohen, O. et al. (1999) *J Cell Biol* 146, 141-148.
- (3) Deiss, L.P. et al. (1995) *Genes Dev* 9, 15-30.
- (4) Cohen, O. et al. (1997) *EMBO J* 16, 998-1008.
- (5) Velentza, A.V. et al. (2001) *J Biol Chem* 276, 38956-38965.
- (6) Inbal, B. et al. (2000) *Mol Cell Biol* 20, 1044-54.
- (7) Kawai, T. et al. (1998) *Mol Cell Biol* 18, 1642-51.
- (8) Murata-Hori, M. et al. (1999) *FEBS Lett* 451, 81-4.
- (9) Kögel, D. et al. (1998) *Oncogene* 17, 2645-54.
- (10) Page, G. et al. (1999) *Oncogene* 18, 7265-73.
- (11) Kawai, T. et al. (2003) *Mol Cell Biol* 23, 6174-86.
- (12) Sato, N. et al. (2005) *Int Immunol* 17, 1543-52.

Entrez-Gene ID #1613
Swiss-Prot Acc. #043293

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

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

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.