

# DAPK (17): sc-136286

## BACKGROUND

DAPK (death associated protein) kinase and ZIP kinase are members of a novel protein kinase family, the members of which have the capacity to mediate apoptosis through their catalytic activities. DAP kinase (DAPK) contains a “death domain” and has been shown to mediate IFN- $\gamma$ -induced apoptosis. The introduction of DAPK into highly metastatic carcinoma clones lacking DAPK expression has been shown to result in the suppression of metastasis, thus linking suppression of apoptosis to metastasis. ZIP kinase contains a leucine zipper domain, which is necessary for homodimerization and for interaction with other leucine zipper proteins. ZIP kinase dimerizes with ATF-4, an ATF/CREB transcription factor family member that contains a leucine zipper. Overexpression of ZIP kinase has been shown to result in morphological changes associated with apoptosis in NIH/3T3 cells.

## REFERENCES

1. Feinstein, E., et al. 1995. Assignment of DAP1 and DAPK—genes that positively mediate programmed cell death triggered by IFN- $\gamma$ —to chromosome regions 5p12.2 and 9q34.1, respectively. *Genomics* 29: 305-307.
2. Sakagami, H., et al. 1997. Molecular cloning and developmental expression of a rat homologue of death-associated protein kinase in the nervous system. *Brain Res. Mol. Brain Res.* 52: 249-256.
3. Inbal, B., et al. 1997. DAP kinase links the control of apoptosis to metastasis. *Nature* 390: 180-184.
4. Kawai, T., et al. 1998. ZIP kinase, a novel serine/threonine kinase which mediates apoptosis. *Mol. Cell. Biol.* 18: 1642-1651.
5. Schumacher, A.M., et al. 2002. DAPK catalytic activity in the hippocampus increases during the recovery phase in an animal model of brain hypoxic-ischemic injury. *Biochim. Biophys. Acta* 1600: 128-137.
6. Jin, Y., et al. 2002. A death-associated protein kinase (DAPK)-interacting protein, DIP-1, is an E3 ubiquitin ligase that promotes tumor necrosis factor-induced apoptosis and regulates the cellular levels of DAPK. *J. Biol. Chem.* 277: 46980-46986.
7. Kim, W.S., et al. 2003. Promoter methylation and down-regulation of DAPK is associated with gastric atrophy. *Int. J. Mol. Med.* 12: 827-830.

## CHROMOSOMAL LOCATION

Genetic locus: DAPK1 (human) mapping to 9q21.33.

## SOURCE

DAPK (17) is a mouse monoclonal antibody raised against amino acids 694-947 of DAPK of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\gamma$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

DAPK (17) is recommended for detection of DAPK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunoprecipitation.

Suitable for use as control antibody for DAPK siRNA (h): sc-38976, DAPK shRNA Plasmid (h): sc-38976-SH and DAPK shRNA (h) Lentiviral Particles: sc-38976-V.

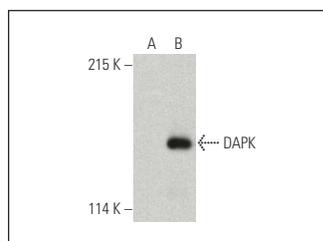
Molecular Weight of DAPK: 160 kDa.

Positive Controls: DAPK (h): 293T Lysate: sc-372936, SK-N-SH cell lysate: sc-2410 or SKN whole cell lysate.

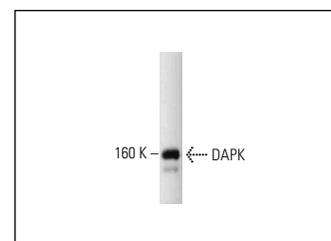
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



DAPK (17): sc-136286. Western blot analysis of DAPK expression in non-transfected: sc-117752 (A) and human DAPK transfected: sc-372936 (B) 293T whole cell lysates. Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-516102.



DAPK (17): sc-136286. Western blot analysis of DAPK expression in SKN whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Wu, G.J., et al. 2021. Death-associated protein kinase 1 correlates with podocyte apoptosis and renal damage and can be mediated by miR-361. *Histol. Histopathol.* 36: 1155-1167.
2. Zhao, Z., et al. 2024. Knockdown of DAPK1 inhibits IL-1 $\beta$ -induced inflammation and cartilage degradation in human chondrocytes by modulating the PEDF-mediated NF $\kappa$ B and NLRP3 inflammasome pathway. *Innate Immun.* 30: 21-30.

## RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.