

p-DAPK2 (Ser 318)-R: sc-21809-R

BACKGROUND

Death-associated protein kinase 2 (DAK2), also designated death-associated protein kinase-related protein-1 (DRP-1), is a calcium/calmodulin-regulated Serine/Threonine kinase that binds to calmodulin, undergoes autophosphorylation in response to an increase in cellular calcium concentration, and phosphorylates Myosin light chain (MLC) as an exogenous substrate. DAK2 is a nuclear protein that is highly expressed in placenta, lung, pancreas and in lower levels in heart, brain, liver, skeletal muscle and kidney. DAK2 belongs to the DAP kinase family and contains a short extra-catalytic tail that is required for homodimerization. The catalytic activity of DAK2 is crucial in linking the cytoplasmic calcium level to apoptotic execution. The regulatory mechanism which controls its pro-apoptotic function is a single autophosphorylation event at Ser 308 (also designated Ser 318) within the calmodulin regulatory domain. A negative charge at this site reduces both the binding to calmodulin and the formation of DAK-1 homodimers.

REFERENCES

1. Cohen, O., et al. 1997. DAP-kinase is a Ca²⁺/calmodulin-dependent, cytoskeletal-associated protein kinase, with cell death-inducing functions that depend on its catalytic activity. *EMBO J.* 16: 998-1008.
2. Kawai, T., et al. 1999. Death-associated protein kinase 2 is a new calcium/calmodulin-dependent protein kinase that signals apoptosis through its catalytic activity. *Oncogene* 18: 3471-3480.
3. Inbal, B., et al. 2000. Death-associated protein kinase-related protein 1, a novel Serine/Threonine kinase involved in apoptosis. *Mol. Cell. Biol.* 20: 1044-1054.
4. Shani, S., et al. 2001. Autophosphorylation restrains the apoptotic activity of DRP-1 kinase by controlling dimerization and calmodulin binding. *EMBO J.* 20: 1099-1113.
5. SWISS-PROT/TrEMBL (O94768). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: DAPK2 (human) mapping to 15q22.31; Dapk2 (mouse) mapping to 9 C.

SOURCE

p-DAPK2 (Ser 318)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 318 phosphorylated DAPK2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21809-R P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

p-DAPK2 (Ser 318)-R is recommended for detection of Ser 318 phosphorylated DAPK2 (also designated DRP-1) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-DAPK2 (Ser 318)-R is also recommended for detection of correspondingly phosphorylated DAPK2 (also designated DRP-1) in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DAPK2 siRNA (h): sc-38978, DAPK2 siRNA (m): sc-38979, DAPK2 shRNA Plasmid (h): sc-38978-SH, DAPK2 shRNA Plasmid (m): sc-38979-SH, DAPK2 shRNA (h) Lentiviral Particles: sc-38978-V and DAPK2 shRNA (m) Lentiviral Particles: sc-38979-V.

Molecular Weight of p-DAPK2: 100 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.