

AKAP 10 (K-13): sc-109187

BACKGROUND

The type II cAMP-protein kinase (PKA) is a multifunctional kinase with a broad range of substrates. Specificity of PKA signaling is thought to be mediated by the compartmentalization of the kinase to specific sites within the cell. To maintain this specific localization, the regulatory (R) subunits (RI and RII) of PKA interact with specific R-anchoring proteins designated AKAPs (A-kinase anchoring proteins). AKAP 10 (A kinase anchor protein 10), also known as PRKA10 or D-AKAP2 (dual-specific A kinase-anchoring protein 2), is a 662 amino acid mitochondrial membrane protein that belongs to the AKAP family. AKAP 10 is a dual specificity protein that binds to both type I and type II regulatory subunits of PKA and anchors them to the plasma membrane or the mitochondria. When anchored to the mitochondria, PKA can phosphorylate and, thus, inactivate the proapoptotic protein Bad. This suggests that AKAP 10 indirectly regulates Bad-induced apoptosis by mediating the mitochondrial attachment of PKA. Additionally, AKAP 10 may facilitate G protein-coupled signal transduction and could act as an adaptor in the assembly of multi-protein complexes.

REFERENCES

- Huang, L.J., et al. 1997. D-AKAP2, a novel protein kinase A anchoring protein with a putative RGS domain. *Proc. Natl. Acad. Sci. USA* 94: 11184-11189.
- Wang, L., et al. 2001. Cloning and mitochondrial localization of full-length D-AKAP2, a protein kinase A anchoring protein. *Proc. Natl. Acad. Sci. USA* 98: 3220-3225.
- Perkins, G.A., et al. 2001. PKA, PKC, and AKAP localization in and around the neuromuscular junction. *BMC Neurosci.* 2: 17.
- Hamuro, Y., et al. 2002. Domain organization of D-AKAP2 revealed by enhanced deuterium exchange-mass spectrometry (DXMS). *J. Mol. Biol.* 321: 703-714.
- Gisler, S.M., et al. 2003. PDZK1: II. an anchoring site for the PKA-binding protein D-AKAP2 in renal proximal tubular cells. *Kidney Int.* 64: 1746-1754.

CHROMOSOMAL LOCATION

Genetic locus: AKAP10 (human) mapping to 17p11.2; Akap10 (mouse) mapping to 11 B2.

SOURCE

AKAP 10 (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of AKAP 10 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-109187 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

AKAP 10 (K-13) is recommended for detection of AKAP 10 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AKAP 10 (K-13) is also recommended for detection of AKAP 10 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for AKAP 10 siRNA (h): sc-93998, AKAP 10 siRNA (m): sc-140974, AKAP 10 shRNA Plasmid (h): sc-93998-SH, AKAP 10 shRNA Plasmid (m): sc-140974-SH, AKAP 10 shRNA (h) Lentiviral Particles: sc-93998-V and AKAP 10 shRNA (m) Lentiviral Particles: sc-140974-V.

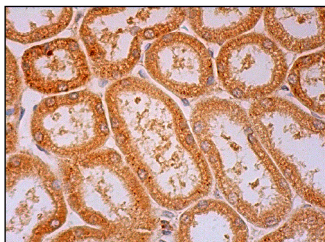
Molecular Weight of AKAP 10: 74 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



AKAP 10 (K-13): sc-109187. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

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.