

# AKAP 7 (D-17): sc-162509

## 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. AKAP 7 (A-kinase anchor protein 7), also known as AKAP18, is a 104 amino acid protein that belongs to the AKAP family. AKAP 7 is expressed in brain, heart, lung, pancreas and skeletal muscle. AKAP 7 binds PKA to the plasma membrane and permits functional coupling to the L-type calcium channel. Four isoforms exist due to alternative splicing events. It has been suggested that the  $\gamma$  isoform binds RI and may be responsible for positioning PKA via RI and/or RII to regulate PKA-mediated gene transcription in both somatic cells and oocytes.

## REFERENCES

1. Trotter, K.W., et al. 1999. Alternative splicing regulates the subcellular localization of A-kinase anchoring protein 18 isoforms. *J. Cell Biol.* 147: 1481-1492.
2. Scott, J.D., et al. 2000. Coordination of cAMP signaling events through PKA anchoring. *Adv. Pharmacol.* 47: 175-207.
3. Edwards, A.S. and Scott, J.D. 2000. A-kinase anchoring proteins: protein kinase A and beyond. *Curr. Opin. Cell Biol.* 12: 217-221.
4. Klusmann, E. and Rosenthal, W. 2001. Role and identification of protein kinase A anchoring proteins in vasopressin-mediated aquaporin-2 translocation. *Kidney Int.* 60: 446-449.
5. Brown, R.L., et al. 2003. AKAP 7 $\gamma$  is a nuclear RI-binding AKAP. *Biochem. Biophys. Res. Commun.* 306: 394-401.
6. Henn, V., et al. 2004. Identification of a novel A-kinase anchoring protein 18 isoform and evidence for its role in the vasopressin-induced aquaporin-2 shuttle in renal principal cells. *J. Biol. Chem.* 279: 26654-26665.
7. Hundsrucker, C., et al. 2006. High-affinity AKAP 7 $\delta$ -protein kinase A interaction yields novel protein kinase A-anchoring disruptor peptides. *Biochem. J.* 396: 297-306.
8. McSorley, T., et al. 2006. Spatial organisation of AKAP18 and PDE4 isoforms in renal collecting duct principal cells. *Eur. J. Cell Biol.* 85: 673-678.

## CHROMOSOMAL LOCATION

Genetic locus: Akap7 (mouse) mapping to 10 A4.

## SOURCE

AKAP 7 (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of AKAP 7 of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-162509 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

AKAP 7 (D-17) is recommended for detection of AKAP 7 of mouse and rat 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)], 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); non cross-reactive with other AKAP family members.

Suitable for use as control antibody for AKAP 7 siRNA (m): sc-140977, AKAP 7 shRNA Plasmid (m): sc-140977-SH and AKAP 7 shRNA (m) Lentiviral Particles: sc-140977-V.

Molecular Weight of AKAP 7 $\alpha$ : 15 kDa.

Molecular Weight of AKAP 7 $\beta$ : 17 kDa.

Molecular Weight of AKAP 7 $\gamma$ : 37 kDa.

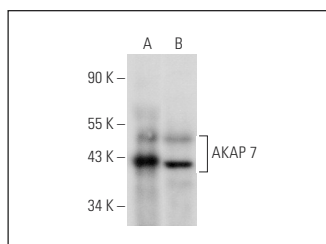
Molecular Weight of AKAP 7 $\delta$ : 50 kDa.

Positive Controls: mouse liver extract: sc-2256 or mouse lung extract: sc-2390.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



AKAP 7 (D-17): sc-162509. Western blot analysis of AKAP 7 expression in mouse lung (A) and mouse liver (B) tissue extracts.

## STORAGE

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

## RESEARCH USE

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