

# AKAP 82 (F-16): sc-66308

## BACKGROUND

AKAP (A-kinase anchoring proteins) is a family of proteins that interact with the R subunit of PKA to anchor it to specific sites within the cell in order to maintain the specificity of PKA signaling. Members of this family display differential tissue specificity and localization. AKAP 82, also known as PRKA4 (protein kinase A-anchoring protein 4), major sperm fibrous sheath protein or FSC1, is expressed in spermatid during spermiogenesis. AKAP 82 plays an important role in spermatid development, completing the fibrous sheath assembly. AKAP 82 has two binding sites for PKA, one specific for RI $\alpha$  and one that can bind either RI $\alpha$  or RII $\alpha$ . AKAP 82 also binds to AKAP 3. These two proteins together make up most of the insoluble fibrous sheath. In AKAP 82 knockout spermatozoa, a significant reduction or loss of AKAP 3, RII $\alpha$ , SP17 and GAPDS results. Abnormal sperm expression of AKAP 82 may be involved in asthenospermia.

## REFERENCES

1. Turner, R.M., Eriksson, R.L., Gerton, G.L. and Moss, S.B. 1999. Relationship between sperm motility and the processing and tyrosine phosphorylation of two human sperm fibrous sheath proteins, pro-hAKAP82 and hAKAP82. *Mol. Hum. Reprod.* 5: 816-824.
2. Moss, S.B., Turner, R.M., Burkert, K.L., VanScoy Butt, H. and Gerton, G.L. 1999. Conservation and function of a bovine sperm A-kinase anchor protein homologous to mouse AKAP 82. *Biol. Reprod.* 61: 335-342.
3. Brown, P.R., Miki, K., Harper, D.B. and Eddy, E.M. 2003. A-kinase anchoring protein 4 binding proteins in the fibrous sheath of the sperm flagellum. *Biol. Reprod.* 68: 2241-2248.
4. Lea, I.A., Widgren, E.E. and O'Rand, M.G. 2004. Association of sperm protein 17 with A-kinase anchoring protein 3 in flagella. *Reprod. Biol. Endocrinol.* 2: 57.
5. Nipper, R.W., Chennothukuzhi, V., Tutuncu, L., Williams, C.J., Gerton, G.L. and Moss, S.B. 2005. Differential RNA expression and polyribosome loading of alternative transcripts of the AKAP 4 gene in murine spermatids. *Mol. Reprod. Dev.* 70: 397-405.

## CHROMOSOMAL LOCATION

Genetic locus: AKAP4 (human) mapping to Xp11.2; Akap4 (mouse) mapping to X A1.1.

## SOURCE

AKAP 82 (F-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of AKAP 82 of human origin.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

## 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-66308 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

AKAP 82 (F-16) is recommended for detection of AKAP 82 of mouse, rat and 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)], 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).

Suitable for use as control antibody for AKAP 82 siRNA (h): sc-61962, AKAP 82 siRNA (m): sc-61963, AKAP 82 shRNA Plasmid (h): sc-61962-SH, AKAP 82 shRNA Plasmid (m): sc-61963-SH, AKAP 82 shRNA (h) Lentiviral Particles: sc-61962-V and AKAP 82 shRNA (m) Lentiviral Particles: sc-61963-V.

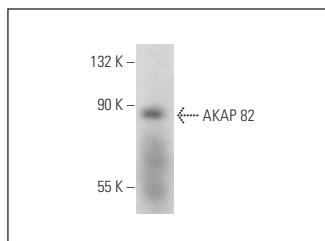
Molecular Weight of AKAP 82: 82 kDa.

Positive Controls: rat testis extract: sc-2400 or HL-60 whole cell lysate: sc-2209.

## 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 82 (F-16): sc-66308. Western blot analysis of AKAP 82 expression in HL-60 whole cell lysate.

## RESEARCH USE

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