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Anti-ProAKAP4 Mouse Monoclonal Antibody (clone 5H2)

Ref. 4BDX-1901

Biomolecule
Anti-proAKAP4 mouse monoclonal antibody

Clone
5H2

Size
100 µg in 100 µL

Formulation
Solution in PBS at 1 mg/mL

Storage
+4°C / -20°C

Immunogen
Peptide

Specificity
AKAP4 prodomain

Cross-reactivity
Human, Mouse, Goat, Cat, Dog, Pig

Immunoglobulin type
Human AKAP4 specific mouse IgG

Isotype
IgG2a Kappa

Applications
WB, IF, IHC

• Preparation

This antibody was produced from a mouse hybridoma resulting from a mouse immunized with a peptide covering the prodomain of human AKAP4 protein sequence (Uniprot ref. Q5JQC9) which is 70% homologous between mammals.

• Purity

Mouse monoclonal antibodies 5H2 was purified by protein A/G affinity chromatography. Purity > 90%, as determined by SDS-PAGE and visualized by silver staining.

• Concentration

The measured concentration of the purified anti-proAKAP4 antibodies was 1 mg/mL as determined using a total protein concentration assay.

• Specificity

Determined by its ability to recognize the prodomain of human AKAP4 protein. This monoclonal antibody (clone 5H2) only recognizes the proAKAP4 (110 kDa / 854 AA), the prodomain (21 kDa) and does not react with the AKAP4 (82 kDa / 665 AA). This clone reacts also with AKAP4 proteins from dog, human, mouse, cat and goat semen.

• Storage

Store at +4°C for short term use (1-2 weeks) - Store at -20°C for long term use.

• Applications

Recommended concentrations of use are:
Western-blot: 0.1 µg/mL
IHC / IF: 5 µg/mL

• General information

Human AKAP4 (A-Kinase Anchor Protein 4) protein is encoded by a single gene located on chromosome X. The proAKAP4 polypeptide is converted into mature AKAP4 by proteolytic cleavage of the amino-terminal prodomain made of 188 amino acids. AKAP4 and its precursor proAKAP4 are both major components of the pig, horse, bull, mouse, rat, ram, dog, rabbit and human sperm fibrous sheath of the sperm flagellum. AKAP4 protein belongs to the family of A-kinase anchor proteins (AKAPs) all sharing a common function of binding to the regulatory subunit of protein kinase A (PKA) and confining the PKA holoenzyme to discrete locations within the cell. AKAP4 is also named AKAP-4, AKAP82 (A-Kinase Anchor Protein 82 KDa), PRKA4 (Protein Kinase Anchoring Protein 4), HI, CT99 (Cancer/Testis Antigen 99), FSC1 (Fibrous sheath component 1) or P82. AKAP4 plays a major role in flagellum formation, sperm motility, capacitation and fecundation.

• References

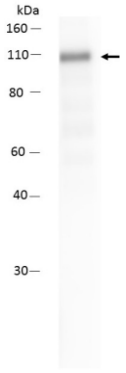
Sergeant N, Briand-Amirat L, Bencharif D and Delehedde M (2019) The sperm specific protein proAKAP4 as an innovative marker to evaluate sperm quality and fertility. Journal of Dairy & Veterinary Sciences. Vol. 11:01-19.

Delehedde M, Carracedo S, Selleslagh M, Eddarkaoui S, Amirat-Briand L and Sergeant N (2019) ProAKAP4 polypeptide as a biomarker of sperm functionality and male fertility disorders. Int J Gynecol and Reprod Sci. Vol. 2(1):13-19.

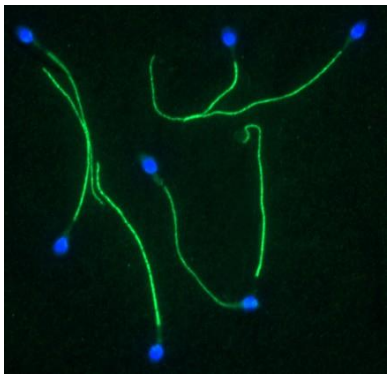
Miki K, Willis WD, Brown PR, Goulding EH, Fulcher KD, Eddy EM (2002) Targeted disruption of the Akap4 gene causes defects in sperm flagellum and motility. Dev Biol. Vol. 248: 331-342.

• Application examples

The monoclonal antibody (clone 5H2) only recognizes the proAKAP4 (110 kDa / 854 AA), the prodomain (21 kDa) and does not react with the AKAP4 (82 kDa / 665 AA).



Western-blotting of human sperm protein extracts



Immunofluorescence of human spermatozoa

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