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Anti-ProAKAP4 Mouse Monoclonal Antibody (clone 5H2)

Ref. 4BDX-1901S

Biomolecule
Anti-proAKAP4 mouse monoclonal antibody

Clone
5H2

Size
20 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, Goat, Cat, Dog, Pig

Immunoglobulin type
Human AKAP4 specific mouse IgG

Isotype
IgG2a Kappa

Applications
WB, IF, IHC, EM

- **Preparation**

This antibody was produced from a mouse hybridoma resulting from a mouse immunized with a peptide covering the prodomain of 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). The clone 5H2 reacts also with AKAP4 proteins from dog, human, 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 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.

• Main References

Fatet A, Sergeant N, Dordas-Perpinyà M, Drouet B, Ponthoreau O, Carracedo Vicente S, Bruyas JF, Thorin C, Delehedde M and Briand-Amirat L (2022) The sperm specific protein proAKAP4 as a marker to evaluate sperm quality and fertility in Bucks. Reproduction in Domestic Animals. ESDAR 2022 Meeting Proceedings.

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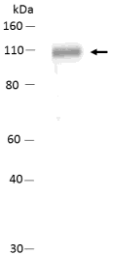
Dewulf Q, Briand-Amirat L, Eddarkaoui S, Chambonnet F, Delehedde M and Sergeant N (2019) The effects of freeze-thaw cycles and of storage time on the stability of proAKAP4 polypeptide in raw sperm samples: implications for semen analysis assessment in breeding activities. Journal of Dairy & Veterinary Sciences. Vol. 13(3):1-7.

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.

• Application example

The monoclonal antibody (clone 5H2) only recognizes the full-length of AKAP4 called 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

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