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Anti-AKAP4 Mouse Monoclonal Antibody (clone 12A10)

Ref. 4BDX-2301S

Biomolecule
Anti-AKAP4 mouse monoclonal antibody

Clone
12A10

Size
100 µg in 20 µL

Formulation
Solution in phosphate buffer at 1 mg/mL

Storage
+4°C / -20°C

Immunogen
Peptide

Specificity
proAKAP4/AKAP4

Cross-reactivity
Mouse, Rat, Hamster, Pig, Human and main Primate species.

Immunoglobulin type
Human AKAP4 specific mouse IgG

Isotype
$IgG2_a$ Kappa

Applications
WB, IF, IHC

- **Preparation**

This antibody was produced from a mouse hybridoma resulting from a mouse immunized with a peptide in the C-terminal region of human AKAP4 protein sequence (Uniprot ref. Q5JQC9) which is 80% homologous between mammals.

- **Purity**

Mouse monoclonal antibodies 12A10 were purified by protein A/G affinity chromatography. Purity > 90%, as determined by SDS-PAGE and visualized by Coomassie Blue staining.

- **Concentration**

The measured concentration of the purified anti-AKAP4 antibodies was 1mg/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 12A10) only recognizes the proAKAP4 (110 kDa / 854 AA) and AKAP4 (82 kDa / 665 AA). The clone 12A10 reacts also with AKAP4 proteins from rodent, pig, human, and main primates.

- **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 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, structuration, sperm motility, capacitation, and fertility.

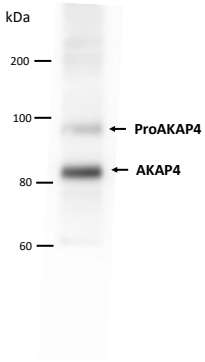
References

Carracedo S, Briand-Amirat L, Dordas-Perpinyà M, Ramos Escuredo Y, Delcombel R, Sergeant N and Delehedde M (2022) ProAKAP4 protein marker: towards a functional approach to male fertility. Animal Reproduction Science. Vol.247(107074):1-20

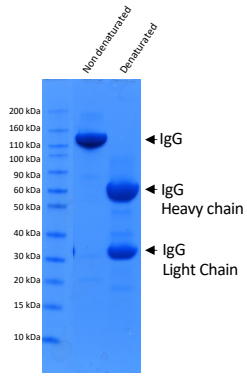
Delehedde M, Carracedo S, Selleslagh M, Eddarkaoui S, Amirat-Briand L and Sergeant N (2019) ProAKAP4 polypeptide as a biomarker of sperm functionality and male fertility disorders. Int J Gynecol and Reprod Sci. Vol. 2(1):13-19.

Application examples

The monoclonal antibody (clone 12A10) recognizes the full-length of AKAP4 called proAKAP4 (110 kDa / 854 AA and the AKAP4 (82 kDa / 665 AA) but it does not recognize the prodomain of 188 aa.



Western blotting of pig semen protein extracts



Antibody purity

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