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SPATA18 Antibody

Catalog # ASC11412

Product Information

Application	WB, E
Primary Accession	Q8TC71
Other Accession	NP_660306, 21687119
Reactivity	Human, Mouse, Rat
Host	Chicken
Clonality	Polyclonal
Isotype	IgY
Calculated MW	61109
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	SPATA18 antibody can be used for detection of SPATA18 by Western blot at 1 g/mL.

Additional Information

Gene ID	132671
Other Names	Mitochondria-eating protein, Spermatogenesis-associated protein 18, SPATA18, MIEAP
Target/Specificity	SPATA18; At least three isoforms of SPATA18 are known to exist; this antibody will detect the two longest isoforms. SPATA18 antibody is predicted to not cross-react with other SPATA family members.
Reconstitution & Storage	SPATA18 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	SPATA18 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SPATA18
Synonyms	MIEAP
Function	Key regulator of mitochondrial quality that mediates the repairing or degradation of unhealthy mitochondria in response to mitochondrial damage (PubMed:21264221, PubMed:21264228, PubMed:22292033, PubMed:22532927). Mediator of mitochondrial protein catabolic process (also named MALM) by mediating the degradation of damaged proteins inside mitochondria by promoting the accumulation in the mitochondrial matrix of

	hydrolases that are characteristic of the lysosomal lumen (PubMed:21264221, PubMed:21264228, PubMed:22292033, PubMed:22532927). Also involved in mitochondrion degradation of damaged mitochondria by promoting the formation of vacuole-like structures (named MIV), which engulf and degrade unhealthy mitochondria by accumulating lysosomes (PubMed:21264228). The physical interaction of SPATA18/MIEAP, BNIP3 and BNIP3L/NIX at the mitochondrial outer membrane regulates the opening of a pore in the mitochondrial double membrane in order to mediate the translocation of lysosomal proteins from the cytoplasm to the mitochondrial matrix (PubMed:22292033). Binds cardiolipin (PubMed:38322995). May form molecular condensates (non- membrane-bounded organelles) within mitochondria that compartmentalize and promote cardiolipin metabolism (PubMed:38322995).
Cellular Location	Cytoplasm, cytosol Mitochondrion outer membrane. Mitochondrion matrix Note=Localizes to the cytosol under normal conditions (PubMed:21264228, PubMed:22532927). Relocalizes to mitochondrion outer membrane following cellular stress. May form molecular condensates in the mitochondrial matrix (PubMed:38322995). Colocalizes with BNIP3 and BNIP3L at the mitochondrion outer membrane (PubMed:22292033) [Isoform 2]: Cytoplasm, cytosol. Mitochondrion matrix. Note=Appears to predominantly localize to the mitochondrial matrix following induction of MALM (mitochondrial protein catabolic process).

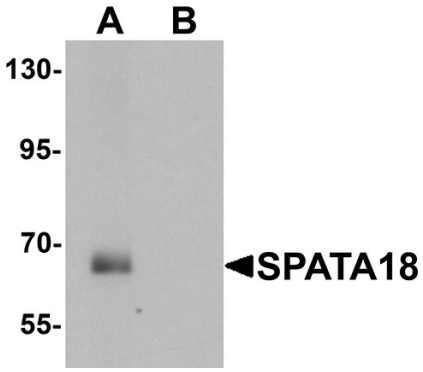
Background

SPATA18 Antibody: SPATA18, also known as SPETEX-1, was initially identified as a cytoplasmic protein of elongate spermatids that is thought to be involved in differentiation process of elongate spermatids to mature spermatozoa. Recent experiments have shown that SPATA18 is a transcriptional target of p53 and p63. It has also been suggested to play a role in mitochondria quality control by inducing intramitochondrial lysosome-like organella that eliminate oxidized mitochondrial proteins.

References

Iida H, Ichinose J, Kaneko T, et al. Complementary DNA cloning of rat spetex-1, a spermatid-expressing gene-1, encoding a 63 kDa cytoplasmic protein of elongate spermatids. Mol. Reprod. Dev. 2004; 68:385-93.
Bornstein C, Brosh R, Molchadsky A, et al. SPATA18, a spermatogenesis-associated gene, is a novel transcriptional target of p53 and p63. Mol. Cell Biol. 2011; 31:1679-89
Miyamoto Y, Kitamura N, Nakamura Y, et al. Possible existence of lysosome-like organella within mitochondria and its role in mitochondrial quality control. PLoS One 2011; 6:e16054.

Images



Western blot analysis of SPATA18 in rat lung tissue lysate with SPATA18 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.