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ZMPSTE24 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2415A

Product Information

Application	WB, IHC-P, E
Primary Accession	O75844
Other Accession	Q80W54, NP_005848
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	54813
Antigen Region	400-430

Additional Information

Gene ID	10269
Other Names	CAAX prenyl protease 1 homolog, Farnesylated proteins-converting enzyme 1, FACE-1, Prenyl protein-specific endoprotease 1, Zinc metalloproteinase Ste24 homolog, ZMPSTE24, FACE1, STE24
Target/Specificity	This ZMPSTE24 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 400-430 amino acids from the Central region of human ZMPSTE24.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ZMPSTE24 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ZMPSTE24 {ECO:0000303|PubMed:28246125, ECO:0000312|HGNC:HGNC:12877}
Function	Transmembrane metalloprotease whose catalytic activity is critical for processing lamin A/LMNA on the inner nuclear membrane and clearing

clogged translocons on the endoplasmic reticulum (PubMed:33293369, PubMed:33315887). Proteolytically removes the C- terminal three residues of farnesylated proteins (PubMed:33293369, PubMed:33315887). Also plays an antiviral role independently of its protease activity by restricting enveloped RNA and DNA viruses, including influenza A, Zika, Ebola, Sindbis, vesicular stomatitis, cowpox, and vaccinia (PubMed:28169297, PubMed:28246125). Mechanistically, controls IFITM antiviral pathway to hinder viruses from breaching the endosomal barrier by modulating membrane fluidity (PubMed:35283811).

Cellular Location

Endoplasmic reticulum membrane; Multi-pass membrane protein. Nucleus inner membrane; Multi-pass membrane protein. Early endosome membrane; Multi-pass membrane protein. Late endosome membrane; Multi-pass membrane protein

Tissue Location

Widely expressed. High levels in kidney, prostate, testis and ovary.

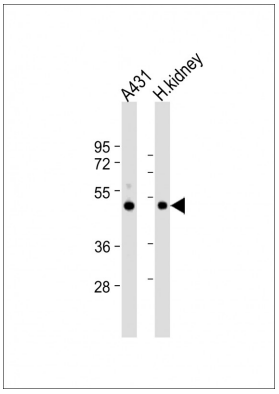
Background

ZMPSTE24 is a zinc metalloprotease similar to yeast Ste24p. It is an integral membrane protein belonging to peptidase family M48 and is found in the endoplasmic reticulum and possibly in the Golgi compartment. It is thought to be involved in the proteolytic processing of farnesylated proteins.

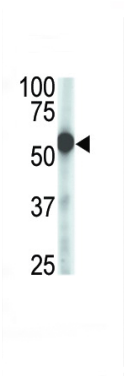
References

Freije, J.M., et al., Genomics 58(3):270-280 (1999).
Kumagai, H., et al., Biochim. Biophys. Acta 1426(3):468-474 (1999).
Tam, A., et al., J. Cell Biol. 142(3):635-649 (1998).

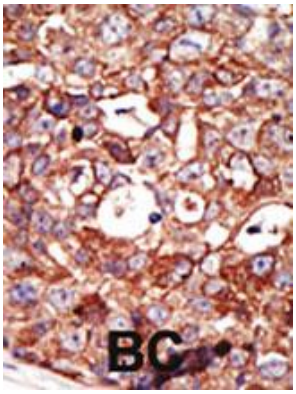
Images



All lanes : Anti-ZMPSTE24 Antibody (E415) at 1:1000 dilution Lane 1: A431 whole cell lysate Lane 2: human kidney lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 55 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



The anti-ZMPSTE24 Pab (Cat. #AP2415a) is used in Western blot to detect ZMPSTE24 in mouse cerebellum tissue lysate.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Progeroid syndrome patients with ZMPSTE24 deficiency could benefit when treated with rapamycin and dimethylsulfoxide.
- Genomic instability in laminopathy-based premature aging.
- Prelamin A endoproteolytic processing in vitro by recombinant Zmpste24.