10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CDK5RAP3 Rabbit mAb

Catalog # AP75004

Product Information

Application	WB, IHC-P, FC, IP
Primary Accession	Q96JB5
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	56921

Additional Information

Gene ID	80279
Other Names	CDK5RAP3
Dilution	WB~~1:1000-1:5000 IHC-P~~N/A FC~~1:10-1:100 IP~~1:10-1:100
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

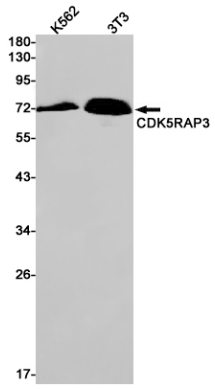
Name	CDK5RAP3 {ECO:0000303|PubMed:30635284, ECO:0000312|HGNC:HGNC:18673}
Function	Substrate adapter of E3 ligase complexes mediating ufmylation, the covalent attachment of the ubiquitin-like modifier UFM1 to substrate proteins, and which is involved in various processes, such as ribosome recycling and reticulophagy (also called ER-phagy) (PubMed:23152784, PubMed:30635284, PubMed:32851973, PubMed:36121123, PubMed:36543799, PubMed:37595036, PubMed:38383785, PubMed:38383789). As part of the UREL complex, plays a key role in ribosome recycling by promoting mono-ufmylation of RPL26/uL24 subunit of the 60S ribosome (PubMed:38383785, PubMed:38383789). Ufmylation of RPL26/uL24 occurs on free 60S ribosomes following ribosome dissociation: it weakens the junction between post-termination 60S subunits and SEC61 translocons, promoting release and recycling of the large ribosomal subunit from the endoplasmic reticulum membrane (PubMed:38383785, PubMed:38383789). Ufmylation of RPL26/uL24 and subsequent 60S ribosome recycling either take place after

	normal termination of translation or after ribosome stalling during cotranslational translocation at the endoplasmic reticulum (PubMed:32851973, PubMed:37595036, PubMed:38383785, PubMed:38383789). Within the UREL complex, CDK5RAP3 acts as a substrate adapter that constrains UFL1 ligase activity to mono-ufmylate RPL26/uL24 at 'Lys-134' (PubMed:36121123, PubMed:38383785, PubMed:38383789). The UREL complex is also involved in reticulophagy in response to endoplasmic reticulum stress by promoting ufmylation of proteins such as CYB5R3, thereby promoting lysosomal degradation of ufmylated proteins (PubMed:36543799). Also acts as a regulator of transcription: negatively regulates NF-kappa-B-mediated gene transcription through the control of RELA phosphorylation (PubMed:17785205, PubMed:20228063). Also regulates mitotic G2/M transition checkpoint and mitotic G2 DNA damage checkpoint (PubMed:15790566, PubMed:19223857). Through its interaction with CDKN2A/ARF and MDM2 may induce MDM2-dependent p53/TP53 ubiquitination, stabilization and activation in the nucleus, thereby promoting G1 cell cycle arrest and inhibition of cell proliferation (PubMed:16173922). May also play a role in the rupture of the nuclear envelope during apoptosis (PubMed:23478299). May regulate MAPK14 activity by regulating its dephosphorylation by PPM1D/WIP1 (PubMed:21283629). Required for liver development (By similarity).
Cellular Location	Endoplasmic reticulum membrane. Cytoplasm. Nucleus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton. Note=Tethered to the endoplasmic reticulum membrane as part of the UFM1 ribosome E3 ligase (UREL) complex (PubMed:38383785, PubMed:38383789). Colocalizes and associates with microtubules (PubMed:23478299)
Tissue Location	Ubiquitously expressed (PubMed:10721722, PubMed:12054757). Expressed in heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas. Isoform 3 is expressed in kidney, liver, skeletal muscle and placenta (PubMed:12737517)

Background

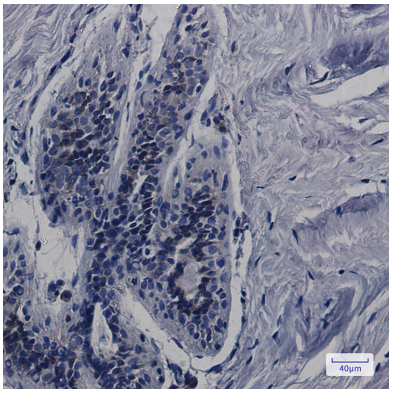
This gene encodes a protein that has been reported to function in signaling pathways governing transcriptional regulation and cell cycle progression. It may play a role in tumorigenesis and metastasis. A pseudogene of this gene is located on the long arm of chromosome 20. Alternative splicing results in multiple transcript variants that encode different isoforms.

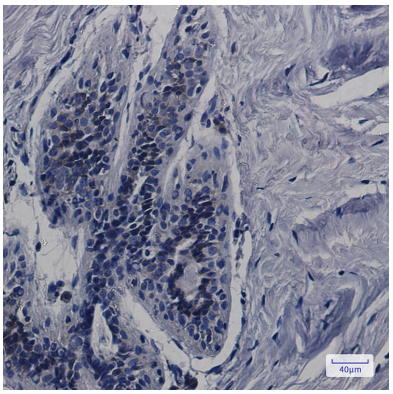
Images

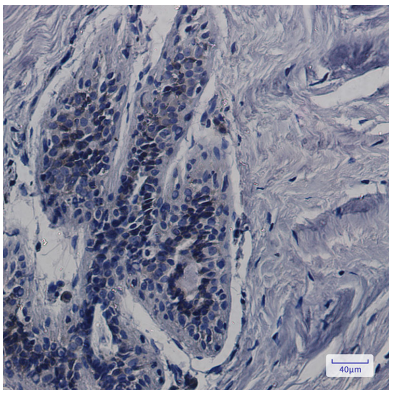


Western blot analysis of CDK5RAP3 in K562, 3T3 lysates using CDK5RAP3 antibody.

Immunohistochemistry analysis of paraffin-embedded







Human breast cancer using CDK5RAP3 antibody.High-pressure and temperature Sodium Citrate pH 6.0 was used for antigen retrieval.

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