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CDK5RAP3 antibody - N-terminal region

Rabbit Polyclonal Antibody
Catalog # AI14753

Product Information

Application	WB
Primary Accession	Q96JB5
Other Accession	NM_176096, NP_788276
Reactivity	Human, Mouse, Rat, Rabbit, Pig, Dog, Horse, Bovine
Predicted	Human, Mouse, Rat, Rabbit, Dog, Horse, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	56921

Additional Information

Gene ID	80279
Alias Symbol	C53, HSF-27, IC53, LZAP, MST016, OK/SW-cl.114
Other Names	CDK5 regulatory subunit-associated protein 3, CDK5 activator-binding protein C53, LXXLL/leucine-zipper-containing ARF-binding protein, Protein HSF-27, CDK5RAP3, IC53, LZAP {ECO:0000303|PubMed:20164180}
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-CDK5RAP3 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	CDK5RAP3 antibody - N-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

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

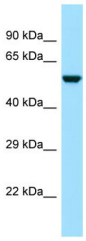
Ubiquitously expressed (PubMed:10721722, PubMed:12054757). Expressed in heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas. Isoform 3 is expressed in kidney, liver, skeletal muscle and placenta (PubMed:12737517)

References

Chen J.,et al.Biochem. Biophys. Res. Commun. 294:161-166(2002).
Xie Y.H.,et al.Cell Res. 13:83-91(2003).
Favier A.-L.,et al.Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
Shichijo S.,et al.Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).

Images

WB Suggested Anti-CDK5RAP3 Antibody Titration: 1.0 µg/ml
Positive Control: THP-1 Whole Cell



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