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DDRGK1 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP58942

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	Q96HY6
Reactivity	Rat, Pig, Dog, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	35611
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human DDRGK1
Epitope Specificity	81-180/314
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Endoplasmic reticulum.
SIMILARITY	Belongs to the DDRGK1 family. Contains 1 PCI domain.
Post-translational modifications	Ufmylated. Conjugated to ubiquitin-like protein UFM1, probably at Lys-267. The role of ufmylation is unclear.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	DDRGK1 (DDRGK domain-containing protein 1), also known as C20orf116, is a 314 amino acid secreted protein. DDRGK1 contains one PCI domain and is expressed as two isoforms produced by alternative splicing. The gene that encodes DDRGK1 maps to human chromosome 20, which represents about 2% of human DNA and consists of approximately 63 million bases and 600 genes. Chromosome 20 contains a region with numerous genes expressed in the epididymis, which are thought to be important for seminal production. The PRNP gene encoding the prion protein associated with spongiform encephalopathies, like Creutzfeldt-Jakob disease, is found on chromosome 20. Amyotrophic lateral sclerosis, spinal muscular atrophy, ring chromosome 20 epilepsy syndrome and Alagille syndrome are also associated with chromosome 20.

Additional Information

Gene ID	65992
Other Names	DDRGK domain-containing protein 1, Dashurin, UFM1-binding and PCI domain-containing protein 1, DDRGK1 {ECO:0000303|PubMed:20228063, ECO:0000312|HGNC:HGNC:16110}
Target/Specificity	Ubiquitously expressed (at protein level).

Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	DDRGK1 {ECO:0000303|PubMed:20228063, ECO:0000312|HGNC:HGNC:16110}
Function	Component of the UFM1 ribosome E3 ligase (UREL) complex, a multiprotein complex that catalyzes ufmylation of endoplasmic reticulum-docked proteins (PubMed:30626644, PubMed:32160526, PubMed:35753586, PubMed:36121123, PubMed:36543799, PubMed:37595036, PubMed:37795761, PubMed:38383785, PubMed:38383789). The UREL complex plays a key role in ribosome recycling by mediating mono-ufmylation of the RPL26/uL24 subunit of the 60S ribosome following ribosome dissociation: ufmylation 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:37595036, PubMed:38383785, PubMed:38383789). Within the UREL complex, DDRGK1 tethers the complex to the endoplasmic reticulum membrane to restrict its activity to endoplasmic reticulum-docked ribosomes and acts as an ufmylation 'reader': following RPL26/uL24 ufmylation, DDRGK1 specifically binds to ufmylated RPL26/uL24 via its UFIM motif, resulting in stable association between the 60S ribosome and the UREL complex, followed by dissociation of the 60S ribosome subunit from the endoplasmic reticulum membrane (PubMed:36121123, PubMed:37595036, 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 and RPN1, thereby promoting lysosomal degradation of ufmylated proteins (PubMed:32160526, PubMed:36543799). Ufmylation-dependent reticulophagy inhibits the unfolded protein response (UPR) by regulating ERN1/IRE1- alpha stability (PubMed:28128204, PubMed:32160526). Acts as a regulator of immunity by promoting differentiation of B-cells into plasma cells: acts by promoting expansion of the endoplasmic reticulum and regulating the unfolded protein response (UPR) (By similarity). May also be required for TRIP4 ufmylation (PubMed:25219498). May play a role in NF-kappa-B-mediated transcription through regulation of the phosphorylation and the degradation of NFKBIA, the inhibitor of NF- kappa-B (PubMed:23675531). Plays a role in cartilage development through SOX9, inhibiting the ubiquitin-mediated proteasomal degradation of this transcriptional regulator (PubMed:28263186). Required for stabilization and ufmylation of ATG9A (By similarity).
Cellular Location	Endoplasmic reticulum membrane; Single-pass membrane protein
Tissue Location	Widely expressed (at protein level). In the brain, highest levels in medulla oblongata, followed by cerebral cortex, cerebellum and frontal lobe.

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