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Cullin 4A Rabbit pAb

Catalog # AP98990

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	Q13619
Other Accession	Q13619
Predicted	Rat, Pig, Human, Mouse, Rabbit, Chicken, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	87680
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Cullin 4a
Epitope Specificity	421-520/759
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the cullin family.
SUBUNIT	Component of multiple DCX (DDB1-CUL4-X-box) E3 ubiquitin-protein ligase complexes that seem to consist of DDB1, CUL4A or CUL4B, RBX1 and a variable substrate recognition component which seems to belong to a protein family described as DCAF (Ddb1- and Cul4-associated factor) or CDW (CUL4-DDB1-associated WD40-repeat) proteins. Component of the CSA complex (DCX(ERCC8) complex) containing ERCC8, RBX1, DDB1 and CUL4A; the CSA complex interacts with RNA polymerase II; upon UV irradiation it interacts with the COP9 signalosome and preferentially with the hyperphosphorylated form of RNA polymerase II. Component of the DCX(DET1-COP1) complex with the substrate recognition component DET1 and COP1. Component of the DCX(DDB2) complex with the substrate recognition component DDB2. Component of the DCX(DTL) complex with the putative substrate recognition component DTL. Interacts with DDB1, RBX1, RNF7, CTD1, TIP120A/CAND1, SKP2, CDKN1B, MDM2, TP53 and HOXA9. Interacts with DDB2; the interactions with DDB2 and CAND1 are mutually exclusive. Interacts with VPRBP, DTL, DDA1, DCAF6, DCAF4, DCAF16, DCAF17, DET1, WDTC1, DCAF5, DCAF11, WDR24A, RFWD2, PAFAH1B1, ERCC8, GRWD1, FBXW5, RBBP7, GNB2, WSB1, WSB2, NUP43, PWP1, FBXW8, ATG16L1, KATNB1, RBBP4, RBBP5 and DCAF8. May interact with WDR26, WDR51B, SNRNP40, WDR61, WDR76, WDR5. Can self-associate. Interacts with Epstein-Barr virus BPLF1.
Post-translational modifications	Neddylated. Deneddylated via its interaction with the COP9 signalosome (CSN) complex (By similarity). Deneddylated by Epstein-Barr virus BPLF1 leading to a S-phase-like environment that is required for efficient replication of the viral genome.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Cullins assemble a potentially large number of ubiquitin ligases by binding to the RING protein ROC1 to catalyse polyubiquitination, as well as binding to various specificity factors to recruit substrates. Cullin 4a is an essential component of the SCF (SKP1-CUL1-F-box protein) E3 ubiquitin ligase complex,

which mediates the ubiquitination of proteins involved in cell cycle progression, signal transduction and transcription. In the SCF complex, cul4A serves as a rigid scaffold that organizes the SKP1-F-box protein and RBX1 subunits. Cul4A may also contribute to catalysis through positioning of the substrate and the ubiquitinconjugating enzyme. Cul4A also interacts with RNF7 and is part of a complex with TIP120A/CAND1, Cyclin E and RBX1.

Additional Information

Gene ID	8451
Other Names	2810470J21Rik; CUL4A_HUMAN; CUL4A; CUL-4A; CUL4A_MOUSE; cullin 4A
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
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	CUL4A {ECO:0000303|PubMed:9721878, ECO:0000312|HGNC:HGNC:2554}
Function	Core component of multiple cullin-RING-based E3 ubiquitin- protein ligase complexes which mediate the ubiquitination of target proteins (PubMed:14578910, PubMed:14739464, PubMed:15448697, PubMed:15548678, PubMed:15811626, PubMed:16678110, PubMed:17041588, PubMed:24209620, PubMed:30166453, PubMed:33854232, PubMed:33854239). As a scaffold protein may contribute to catalysis through positioning of the substrate and the ubiquitin-conjugating enzyme (PubMed:14578910, PubMed:14739464, PubMed:15448697, PubMed:15548678, PubMed:15811626, PubMed:16678110, PubMed:17041588, PubMed:24209620). The E3 ubiquitin- protein ligase activity of the complex is dependent on the neddylation of the cullin subunit and is inhibited by the association of the deneddylated cullin subunit with TIP120A/CAND1 (PubMed:14578910, PubMed:14739464, PubMed:15448697, PubMed:15548678, PubMed:15811626, PubMed:16678110, PubMed:17041588, PubMed:24209620). The functional specificity of the E3 ubiquitin-protein ligase complex depends on the variable substrate recognition component (PubMed:14578910, PubMed:14739464, PubMed:15448697, PubMed:15548678, PubMed:15811626, PubMed:16678110, PubMed:17041588, PubMed:24209620). DCX(DET1-COP1) directs ubiquitination of JUN (PubMed:14739464). DCX(DDB2) directs ubiquitination of XPC (PubMed:15811626). DCX(DDB2) ubiquitinates histones H3-H4 and is required for efficient histone deposition during replication-coupled (H3.1) and replication-independent (H3.3) nucleosome assembly, probably by facilitating the transfer of H3 from ASF1A/ASF1B to other chaperones involved in histone deposition (PubMed:16678110, PubMed:17041588, PubMed:24209620). DCX(DTL) plays a role in PCNA-dependent polyubiquitination of CDT1 and MDM2-dependent ubiquitination of p53/TP53 in response to radiation-induced DNA damage and during DNA replication (PubMed:14578910, PubMed:15448697, PubMed:15548678). DCX(DTL) directs autoubiquitination of DTL (PubMed:23478445). In association with DDB1 and SKP2 probably is involved in ubiquitination of CDKN1B/p27kip (PubMed:16537899). Is involved in ubiquitination of HOXA9 (PubMed:14609952). The DDB1-CUL4A- DTL E3 ligase

complex regulates the circadian clock function by mediating the ubiquitination and degradation of CRY1 (PubMed:26431207). The DCX(ERCC8) complex (also named CSA complex) plays a role in transcription-coupled repair (TCR) (PubMed:12732143, PubMed:32355176, PubMed:38316879). A number of DCX complexes (containing either TRPC4AP or DCAF12 as substrate-recognition component) are part of the DesCEND (destruction via C-end degrons) pathway, which recognizes a C-degron located at the extreme C terminus of target proteins, leading to their ubiquitination and degradation (PubMed:29779948). The DCX(AMBRA1) complex is a master regulator of the transition from G1 to S cell phase by mediating ubiquitination of phosphorylated cyclin-D (CCND1, CCND2 and CCND3) (PubMed:33854232, PubMed:33854239). The DCX(AMBRA1) complex also acts as a regulator of Cul5-RING (CRL5) E3 ubiquitin-protein ligase complexes by mediating ubiquitination and degradation of Elongin-C (ELOC) component of CRL5 complexes (PubMed:30166453). With CUL4B, contributes to ribosome biogenesis (PubMed:26711351).

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