

Recombinant Human CUL5 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50232

Size: 10ug, 100ug

Protein Name: Cullin-5 (CUL-5) (Vasopressin-activated calcium-mobilizing receptor 1) (VACM-1)

Synonym: CUL5, VACM1

UniProt ID: Q93034

UniProt Link: www.uniprot.org/uniprotkb/Q93034/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 780 AA

Molecular Weight: 91 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MATSNLLKNKGSLQFEDKWDFMRPIVLKLLRQESVTKQQWFDLFSVDVHAVCLWDDKGPAAIHQAALK
EDILEFIKQAQARVLSHQDDTALLKAYIVEWRKFFTQCDILPKPFCQLEITLMGKQGSNKKSNNVEDSIV
RKLMLDTWNESIFSNIKNRLQDSAMKLVHAERLGEAFDSQLVIGVRESYVNLCSNPEDKLQIYRDNF
EKAYLDSTERFYRTQAPSYLQQNGVQNYMKYADAKLKEEEKRALRYLETRRECNSVEALMECCVN
ALVTSFKETILAECCGMIKRNETEKLHLMFSLMDKVPNGIEPMLKDLEEHISAGLADMVAAAETITTD
SEKYVEQLLTLFNRFSKLVKEAFQDDPRFLTARDKAYKAVVNDATIFKLELPLKQKGVGLKTQPESKC
PELLANYCDMLLRKTPLSKKLTSEEIEAKLKEVLLVLKYVQNKDVFMRYPYHKAHLTRRLILDISADSEIEE
NMVEWLREVGMPADYVNLKARMFQDIKVSIEDLNQAFKEMHKNNKLALPADSVNIKILNAGAWSRSS
EKVFSVSLPTELEDLPEVEEFYKKNHSGRKLHWHHLMSNGIITFKNEVGQYDLEVTTTFQLAVLFAWNQ
RPREKISFENLKLATELPAELRRTLWSLVAFPKLKRQVLLYEPQVNSPKDFTTEGTLFSVNQEFSLIK
NAKVQKRGKINLIGRLQLTTERMREEENEGIVQLRILRTQEAIQIMKMRKKISNAQLQTELVEILKNMF
LPQKKMIKEQIEWLIHXYIRRDESDINTFIYMA

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Cullin-5 (CUL-5) (Vasopressin-activated calcium-mobilizing receptor 1) (VACM-1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Core component of multiple cullin-5-RING E3 ubiquitin-protein ligase complexes (ECS complexes, also named CRL5 complexes), which mediate the ubiquitination and subsequent proteasomal degradation of target proteins (PubMed:11384984, PubMed:15601820, PubMed:21199876, PubMed:21980433, PubMed:23897481, PubMed:25505247, PubMed:27910872, PubMed:32200094, PubMed:33268465, PubMed:35512830, PubMed:38418882, PubMed:40963025). Acts as a scaffold protein that contributes to catalysis through positioning of the substrate and the ubiquitin-conjugating enzyme (PubMed:11384984, PubMed:15601820, PubMed:33268465). The functional specificity of the E3 ubiquitin-protein ligase complex depends on the variable SOCS box-containing substrate recognition component (PubMed:11384984, PubMed:15601820, PubMed:33268465). Acts as a key regulator of neuron positioning during cortex development: component of various SOCS-containing ECS complexes, such as the ECS(SOCS7) complex, that regulate reelin signaling by mediating ubiquitination and degradation of DAB1 (By similarity). ECS(SOCS1) seems to direct ubiquitination of JAK2 (PubMed:11384984). The ECS(SOCS2) complex mediates the ubiquitination and subsequent proteasomal degradation of phosphorylated EPOR and GHR (PubMed:21980433, PubMed:25505247). The ECS(SPSB3) complex catalyzes ubiquitination of nuclear CGAS (PubMed:38418882). ECS(KLHDC1) complex is part of the DesCEND (destruction via C-end degrons) pathway and mediates ubiquitination and degradation of truncated SELENOS selenoprotein produced by failed UGA/Sec decoding, which ends with a glycine (PubMed:32200094). The ECS(ASB9) complex mediates ubiquitination and degradation of CKB (PubMed:33268465). As part of some ECS complex, promotes 'Lys-11'-linked ubiquitination and degradation of BTRC (PubMed:27910872). As part of a multisubunit ECS complex, polyubiquitinates monoubiquitinated POLR2A (PubMed:19920177). As part of the ECS(RAB40C) complex, mediates ANKRD28 ubiquitination and degradation, thereby inhibiting protein phosphatase 6 (PP6) complex activity and focal adhesion assembly during cell migration (PubMed:35512830). As part of the ECS(RAB40A) complex, mediates RHOU 'Lys-48'-linked ubiquitination and degradation, thus inhibiting focal adhesion disassembly during cell migration (PubMed:26598620). As part of the ECS(RAB40B) complex, mediates LIMA1/EPLIN and RAP2 ubiquitination, thereby regulating actin cytoskeleton dynamics and stress fiber formation during cell migration (PubMed:33999101, PubMed:35293963). The ECS(ASB7) complex acts as a negative regulator of H3K9me3 histone mark by mediating ubiquitination and degradation of SUV39H1 (PubMed:40440427). As part of the ECS(LRRC58) complex, mediates CDO1 ubiquitination and degradation, regulating cysteine catabolism (PubMed:40963025). May form a cell surface vasopressin receptor (PubMed:9037604).; (Microbial infection) Following infection by HIV-1 virus, CUL5 associates with HIV-1 Vif proteins and forms a cullin-5-RING E3 ubiquitin-protein ligase complex (ECS complex) that catalyzes ubiquitination and degradation of APOBEC3F and APOBEC3G (PubMed:16636053, PubMed:22190037). The complex can also ubiquitinate APOBEC3H to some extent

(PubMed:37640699).; (Microbial infection) Seems to be involved in proteasomal degradation of p53/TP53 stimulated by adenovirus E1B-55 kDa protein.

Subcellular Localization: Nucleus . Note=Localizes to sites of DNA damage in a UBAP2 and UBAP2L-dependent manner.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.