

**Anti-Cul3 (N-terminal specific) (RABBIT) Antibody**  
**Cul3 Antibody**  
**Catalog # ASR3716****Specification**

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**Anti-Cul3 (N-terminal specific) (RABBIT) Antibody - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Human
Clonality	Polyclonal
Application	WB, IHC, E, IP, I, LCI
Application Note	Anti-Cul3 has been tested by immunohistochemistry. This antibody reacts with human Cul3 by western blot and immunoprecipitation. The antibody immunoprecipitates in vitro translated product and protein from cell lysates (using HeLa or NIH-3T3). An 88.9 kDa band corresponding to human Cul3 is detected. Most cell lines expressing Cul3 can be used as a positive control. Researchers should determine optimal titers for other applications.
Physical State	Liquid (sterile filtered)
Immunogen	Cul3 antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to the N-Terminal near amino acids 1-25 of Human Cul3 coupled to KLH.
Preservative	0.01% (w/v) Sodium Azide

**Anti-Cul3 (N-terminal specific) (RABBIT) Antibody - Additional Information****Gene ID** 8452**Other Names**  
8452**Purity**

Anti-Cul3 antibody is monospecific antiserum processed by delipidation and defibrination followed by sterile filtration. This product reacts with human Cullin 3. Cross reactivity is expected against mouse Cul3 based on sequence homology. Cross reactivity with other human cullins is unlikely based on sequence homology.

**Storage Condition**

Store anti-Cul3 at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an

undiluted liquid. Dilute only prior to immediate use.

### Precautions Note

This product is for research use only and is not intended for therapeutic or diagnostic applications.

## Anti-Cul3 (N-terminal specific) (RABBIT) Antibody - Protein Information

Name CUL3 ([HGNC:2553](#))

Synonyms KIAA0617

### Function

Core component of multiple cullin-RING-based BCR (BTB-CUL3- RBX1) E3 ubiquitin-protein ligase complexes which mediate the ubiquitination and subsequent proteasomal degradation of target proteins. BCR complexes and ARIH1 collaborate in tandem to mediate ubiquitination of target proteins (PubMed: [27565346](http://www.uniprot.org/citations/27565346)). As a scaffold protein may contribute to catalysis through positioning of the substrate and the ubiquitin-conjugating enzyme. 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. The functional specificity of the BCR complex depends on the BTB domain-containing protein as the substrate recognition component. BCR(KLHL42) is involved in ubiquitination of KATNA1. BCR(SPOP) is involved in ubiquitination of BMI1/PCGF4, BRMS1, MACROH2A1 and DAXX, GLI2 and GLI3. Can also form a cullin-RING-based BCR (BTB-CUL3-RBX1) E3 ubiquitin-protein ligase complex containing homodimeric SPOPL or the heterodimer formed by SPOP and SPOPL; these complexes have lower ubiquitin ligase activity. BCR(KLHL9-KLHL13) controls the dynamic behavior of AURKB on mitotic chromosomes and thereby coordinates faithful mitotic progression and completion of cytokinesis. BCR(KLHL12) is involved in ER-Golgi transport by regulating the size of COPII coats, thereby playing a key role in collagen export, which is required for embryonic stem (ES) cells division: BCR(KLHL12) acts by mediating monoubiquitination of SEC31 (SEC31A or SEC31B) (PubMed: [22358839](http://www.uniprot.org/citations/22358839), PubMed: [27716508](http://www.uniprot.org/citations/27716508)). BCR(KLHL3) acts as a regulator of ion transport in the distal nephron; by mediating ubiquitination of WNK4 (PubMed: [23387299](http://www.uniprot.org/citations/23387299), PubMed: [23453970](http://www.uniprot.org/citations/23453970), PubMed: [23576762](http://www.uniprot.org/citations/23576762)). The BCR(KLHL20) E3 ubiquitin ligase complex is involved in interferon response and anterograde Golgi to endosome transport: it mediates both ubiquitination leading to degradation and 'Lys-33'-linked ubiquitination (PubMed: [20389280](http://www.uniprot.org/citations/20389280), PubMed: [21670212](http://www.uniprot.org/citations/21670212), PubMed: [21840486](http://www.uniprot.org/citations/21840486), PubMed: [24768539](http://www.uniprot.org/citations/24768539)). The BCR(KLHL21) E3 ubiquitin ligase complex regulates localization of the chromosomal passenger complex (CPC) from chromosomes to the spindle midzone in anaphase and mediates the ubiquitination of AURKB (PubMed: [19995937](http://www.uniprot.org/citations/19995937)). The BCR(KLHL22) ubiquitin ligase complex mediates monoubiquitination of PLK1, leading to PLK1 dissociation from phosphoreceptor proteins and subsequent removal from kinetochores, allowing silencing of the spindle assembly checkpoint (SAC) and chromosome segregation (PubMed: [23455478](http://www.uniprot.org/citations/23455478)). The BCR(KLHL22) ubiquitin ligase complex is also responsible for the amino acid-stimulated 'Lys-48' polyubiquitination and proteasomal degradation of DEPDC5. Through the degradation of DEPDC5, releases the GATOR1 complex-mediated inhibition of the TORC1 pathway (PubMed: [29769719](http://www.uniprot.org/citations/29769719)). The BCR(KLHL25) ubiquitin ligase complex is involved in translational homeostasis by mediating

ubiquitination and subsequent degradation of hypophosphorylated EIF4EBP1 (4E-BP1) (PubMed:<a href="http://www.uniprot.org/citations/22578813" target="\_blank">22578813</a>). The BCR(KLHL25) ubiquitin ligase complex is also involved in lipid synthesis by mediating ubiquitination and degradation of ACLY (PubMed:<a href="http://www.uniprot.org/citations/27664236" target="\_blank">27664236</a>). The BCR(KBTBD8) complex acts by mediating monoubiquitination of NOLC1 and TCOF1, leading to remodel the translational program of differentiating cells in favor of neural crest specification (PubMed:<a href="http://www.uniprot.org/citations/26399832" target="\_blank">26399832</a>). Involved in ubiquitination of cyclin E and of cyclin D1 (in vitro) thus involved in regulation of G1/S transition. Involved in the ubiquitination of KEAP1, ENC1 and KLHL41 (PubMed:<a href="http://www.uniprot.org/citations/15983046" target="\_blank">15983046</a>). In concert with ATF2 and RBX1, promotes degradation of KAT5 thereby attenuating its ability to acetylate and activate ATM. The BCR(KCTD17) E3 ubiquitin ligase complex mediates ubiquitination and degradation of TCHP, a down- regulator of cilium assembly, thereby inducing ciliogenesis (PubMed:<a href="http://www.uniprot.org/citations/25270598" target="\_blank">25270598</a>). The BCR(KLHL24) E3 ubiquitin ligase complex mediates ubiquitination of KRT14, controls KRT14 levels during keratinocytes differentiation, and is essential for skin integrity (PubMed:<a href="http://www.uniprot.org/citations/27798626" target="\_blank">27798626</a>). The BCR(KLHL18) E3 ubiquitin ligase complex mediates the ubiquitination of AURKA leading to its activation at the centrosome which is required for initiating mitotic entry (PubMed:<a href="http://www.uniprot.org/citations/23213400" target="\_blank">23213400</a>). The BCR(KEAP1) E3 ubiquitin ligase complex acts as a key sensor of oxidative and electrophilic stress by mediating ubiquitination and degradation of NFE2L2/NRF2, a transcription factor regulating expression of many cytoprotective genes (PubMed:<a href="http://www.uniprot.org/citations/15601839" target="\_blank">15601839</a>, PubMed:<a href="http://www.uniprot.org/citations/16006525" target="\_blank">16006525</a>). As part of the CUL3(KBTBD6/7) E3 ubiquitin ligase complex functions mediates 'Lys-48' ubiquitination and proteasomal degradation of TIAM1 (PubMed:<a href="http://www.uniprot.org/citations/25684205" target="\_blank">25684205</a>). By controlling the ubiquitination of that RAC1 guanine exchange factors (GEF), regulates RAC1 signal transduction and downstream biological processes including the organization of the cytoskeleton, cell migration and cell proliferation (PubMed:<a href="http://www.uniprot.org/citations/25684205" target="\_blank">25684205</a>). The BCR(KBTBD4) E3 ubiquitin ligase complex targets CoREST corepressor complex components RCOR1, KDM1A/LSD1 and HDAC2 for proteasomal degradation with RCOR1 likely to be the primary target while degradation of KDM1A and HDAC2 is likely due to their association with RCOR1 (PubMed:<a href="http://www.uniprot.org/citations/33417871" target="\_blank">33417871</a>). It also targets RCOR3, MIER2 and MIER3 for proteasomal degradation as well as associated proteins ZNF217 and RREB1 with degradation being dependent on the presence of an ELM2 domain in the target proteins (PubMed:<a href="http://www.uniprot.org/citations/36997086" target="\_blank">36997086</a>). The BCR(ARMC5) complex mediates premature transcription termination of transcripts that are unfavorably configured for transcriptional elongation by mediating ubiquitination of Pol II subunit POLR2A (PubMed:<a href="http://www.uniprot.org/citations/35687106" target="\_blank">35687106</a>, PubMed:<a href="http://www.uniprot.org/citations/38225631" target="\_blank">38225631</a>, PubMed:<a href="http://www.uniprot.org/citations/39504960" target="\_blank">39504960</a>, PubMed:<a href="http://www.uniprot.org/citations/39667934" target="\_blank">39667934</a>). Required for 'Lys-63'-linked ubiquitination of large ribosomal subunit protein MRPL12 (PubMed:<a href="http://www.uniprot.org/citations/37526061" target="\_blank">37526061</a>).

### Cellular Location

Nucleus. Golgi apparatus. Cell projection, cilium, flagellum. Cytoplasm, cytoskeleton, spindle. Cytoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle pole. Note=Detected along the length of the sperm flagellum and in the cytoplasm of the germ cells (PubMed:28395323). Predominantly found in the nucleus in interphase cells, found at the centrosome at late G2 or prophase, starts accumulating at the spindle poles in prometaphase and stays on the spindle poles and the mitotic spindle at metaphase (PubMed:23213400)

### Tissue Location

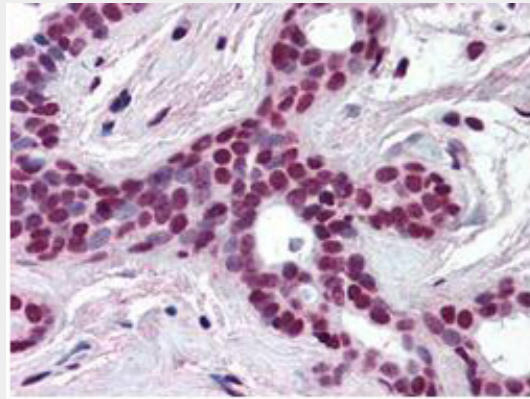
Brain, spermatozoa, and testis (at protein level). Widely expressed.

### Anti-Cul3 (N-terminal specific) (RABBIT) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### Anti-Cul3 (N-terminal specific) (RABBIT) Antibody - Images



Rockland's Anti-CUL3 antibody was diluted 1:500 to detect CUL3 in human breast tissue. Tissue was formalin fixed and paraffin embedded. No pre-treatment of sample was required. The image shows the localization of antibody as the precipitated red signal, with a hematoxylin purple nuclear counter stain.

### Anti-Cul3 (N-terminal specific) (RABBIT) Antibody - Background

Cul3 antibody is ideal for Cell Biology, Cancer and Ubiquitin research. Cullins assemble a potentially large number of ubiquitin ligases by binding to the RING protein ROC1 to catalyze polyubiquitination, as well as binding to various specificity factors to recruit substrates. Cullin 3 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, cul3 serves as a rigid scaffold that organizes the SKP1-F-box protein and RBX1 subunits. Cul3 may also contribute to catalysis through positioning of the substrate and the ubiquitin-conjugating enzyme. Unlike Cul1 and Cul2, Cul3 seems not to be a part of the SCF complex consisting of CUL1, RBX1, SKP1 and SKP2. Cul3 also interacts with RNF7 and is part of a complex with TIP120A/CAND1, Cyclin E and RBX1.