

CUL-3 (G-8): sc-166110



The Power to Question

BACKGROUND

Cullin proteins comprise a distinct family of mediators that participate in the selective targeting of proteins for ubiquitin (Ub)-mediated proteolysis. CUL-1, which is the mammalian homolog of yeast Cdc53, is an integral component of the E3 ubiquitin ligase complex designated SCF. The SCF (Skp1/CUL-1/F-box protein complex) consists of Skp1 associating with both CUL-1 and an F-box protein, such as Skp2, which determines the substrate specificity of the complex. CUL-1-mediated ubiquitination results in the degradation of cell cycle proteins cyclin D, p21 and cyclin E. Another cullin, CUL-3, facilitates the degradation of cyclin E independent of SCF activity, while CUL-2 associates with the tumor suppressing protein VHL and elongin B to form VBC complexes, which structurally resemble the SCF ligase. Proteolysis also occurs by way of CUL-4 associating with Nedd-8, a ubiquitin-like protein, where it too functions as an active component of a multifunctional E3 complex. CUL-5, also designated vasopressin-activated, calcium-mobilizing protein (VACM-1), is also included in the cullin family as it shares substantial sequence homology with CUL-1.

REFERENCES

1. Kipreos, E.T., et al. 1996. CUL-1 is required for cell cycle exit in *C. elegans* and identifies a novel gene family. *Cell* 85: 829-839.
2. Byrd, P.J., et al. 1997. Identification and analysis of expression of human VACM-1, a Cullin gene family member located on chromosome 11q22-23. *Genome Res.* 7: 71-75.
3. Yu, Z.K., et al. 1998. Human CUL-1 associates with the Skp1/Skp2 complex and regulates p21^{CIP1/WAF1} and cyclin D proteins. *Proc. Natl. Acad. Sci. USA* 95: 11324-11329.

CHROMOSOMAL LOCATION

Genetic locus: CUL3 (human) mapping to 2q36.2; Cul3 (mouse) mapping to 1 C4.

SOURCE

CUL-3 (G-8) is a mouse monoclonal antibody raised against amino acids 1-293 of CUL-3 (cullin-3) of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CUL-3 (G-8) is available conjugated to agarose (sc-166110 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166110 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166110 PE), fluorescein (sc-166110 FITC), Alexa Fluor® 488 (sc-166110 AF488), Alexa Fluor® 546 (sc-166110 AF546), Alexa Fluor® 594 (sc-166110 AF594) or Alexa Fluor® 647 (sc-166110 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166110 AF680) or Alexa Fluor® 790 (sc-166110 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

CUL-3 (G-8) is recommended for detection of CUL-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

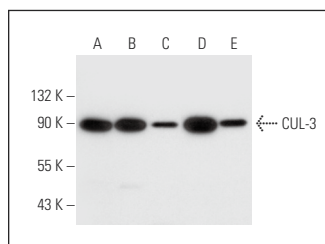
CUL-3 (G-8) is also recommended for detection of CUL-3 in additional species, including bovine and avian.

Suitable for use as control antibody for CUL-3 siRNA (h): sc-35130, CUL-3 siRNA (m): sc-35131, CUL-3 shRNA Plasmid (h): sc-35130-SH, CUL-3 shRNA Plasmid (m): sc-35131-SH, CUL-3 shRNA (h) Lentiviral Particles: sc-35130-V and CUL-3 shRNA (m) Lentiviral Particles: sc-35131-V.

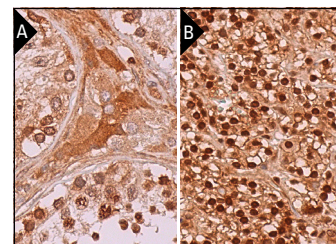
Molecular Weight of CUL-3: 89 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

DATA



CUL-3 (G-8): sc-166110. Western blot analysis of CUL-3 expression in HeLa (A), K-562 (B), Jurkat (C), Ramos (D) and NIH/3T3 (E) whole cell lysates.



CUL-3 (G-8): sc-166110. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human parathyroid gland tissue showing nuclear and cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Zhang, C., et al. 2016. Cullin3-KLHL25 ubiquitin ligase targets ACLY for degradation to inhibit lipid synthesis and tumor progression. *Genes Dev.* 30: 1956-1970.
2. Hirata, Y., et al. 2022. ER-to-Golgi trafficking of procollagen III via conventional vesicular and tubular carriers. *Mol. Biol. Cell* 33: ar21.
3. Di Fiore, A., et al. 2023. KCTD1 is a new modulator of the KCASH family of Hedgehog suppressors. *Neoplasia* 43: 100926.
4. Luo, H., et al. 2024. ARMC5 controls the degradation of most Pol II subunits, and ARMC5 mutation increases neural tube defect risks in mice and humans. *Genome Biol.* 25: 19.

RESEARCH USE

For research use only, not for use in diagnostic procedures.