



CUL-1 (19): sc-135874

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.
4. Chen, L.C., et al. 1998. The human homologue for the *Caenorhabditis elegans* CUL-4 gene is amplified and overexpressed in primary breast cancers. *Cancer Res.* 58: 3677-3683.
5. Tyers, M., et al. 1999. One ring to rule a superfamily of E3 ubiquitin ligases. *Science* 284: 601, 603-604.
6. Singer, J.D., et al. 1999. Cullin-3 targets cyclin E for ubiquitination and controls S phase in mammalian cells. *Genes Dev.* 13: 2375-2387.
7. Iwai, K., et al. 1999. Identification of the von Hippel-Lindau tumor suppressor protein as part of an active E3 ubiquitin ligase complex. *Proc. Natl. Acad. Sci. USA* 96: 12436-12441.
8. Khoury, J., et al. 2007. Antiinflammatory adaptation to hypoxia through adenosine-mediated cullin-1 deneddylation. *J. Clin. Invest.* 117: 703-711.
9. Fielenbach, N., et al. 2007. DRE-1: an evolutionarily conserved F box protein that regulates *C. elegans* developmental age. *Dev. Cell* 12: 443-455.

CHROMOSOMAL LOCATION

Genetic locus: CUL1 (human) mapping to 7q36.1; Cul1 (mouse) mapping to 6 B2.3.

SOURCE

CUL-1 (19) is a mouse monoclonal antibody raised against amino acids 56-246 of CUL-1 of mouse origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

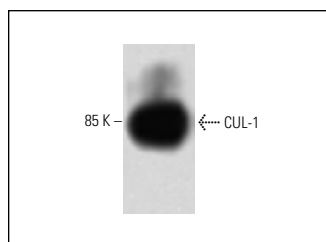
CUL-1 (19) is recommended for detection of CUL-1 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for CUL-1 siRNA (h): sc-35126, CUL-1 siRNA (m): sc-35127, CUL-1 shRNA Plasmid (h): sc-35126-SH, CUL-1 shRNA Plasmid (m): sc-35127-SH, CUL-1 shRNA (h) Lentiviral Particles: sc-35126-V and CUL-1 shRNA (m) Lentiviral Particles: sc-35127-V.

Molecular Weight of CUL-1: 85 kDa.

Positive Controls: JAR cell lysate: sc-2276, P19 cell lysate: sc-24760 or HOS cell lysate: sc-2275.

DATA



CUL-1 (19): sc-135874. Western blot analysis of CUL-1 expression in P19 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Mukhopadhyay, U., et al. 2019. Biphasic regulation of RNA interference during rotavirus infection by modulation of Argonaute2. *Cell. Microbiol.* 19: e13101.
2. Zeng, Y., et al. 2019. An overactive neddylation pathway serves as a therapeutic target and MLN4924 enhances the anticancer activity of cisplatin in pancreatic cancer. *Oncol. Lett.* 18: 2724-2732.

STORAGE

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

RESEARCH USE

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



See **CUL-1 (D-5): sc-17775** for CUL-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.