

CUL-4 (C-19): sc-8557

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 Cdc53 from yeast, 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, or vaso-pressin-activated, calcium-mobilizing protein (VACM-1), is also included in the cullin family as it shares substantial sequence homology with CUL-1.

CHROMOSOMAL LOCATION

Genetic locus: CUL4A (human) mapping to 13q34, CUL4B (human) mapping to Xq24; Cul4a (mouse) mapping to 8 A1.1, Cul4b (mouse) mapping to X A3.3.

SOURCE

CUL-4 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CUL-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8557 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

CUL-4 (C-19) is recommended for detection of CUL-4A and CUL-4B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). CUL-4 (C-19) is also recommended for detection of CUL-4A and CUL-4B in additional species, including equine, canine, bovine, porcine and avian.

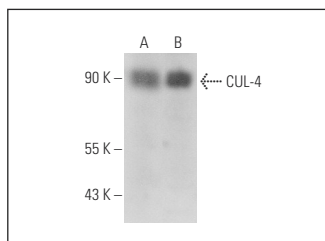
Molecular Weight of CUL-4: 80-85 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, HeLa whole cell lysate: sc-2200 or rat liver extract: sc-2395.

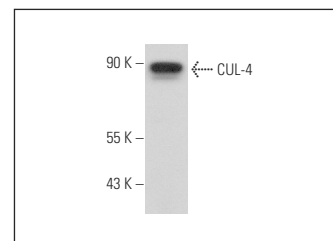
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CUL-4 (C-19): sc-8557. Western blot analysis of CUL-4 expression in PC-12 (A) and HeLa (B) whole cell lysates.



CUL-4 (C-19): sc-8557. Western blot analysis of CUL-4 expression in rat liver tissue extract.

SELECT PRODUCT CITATIONS

- Wertz, I.E., et al. 2004. Human de-etiolated-1 regulates c-Jun by assembling a CUL-4A ubiquitin ligase. *Science* 303: 1371-1374.
- Hrecka, K., et al. 2007. Lentiviral Vpr usurps CUL-4-DDB1[VprBP] E3 ubiquitin ligase to modulate cell cycle. *Proc. Natl. Acad. Sci. USA* 104: 11778-11783.
- Nishitani, H., et al. 2008. Cdk inhibitor p21 is degraded by a proliferating cell nuclear antigen-coupled CUL-4-DDB1^{Cdt2} pathway during S phase and after UV irradiation. *J. Biol. Chem.* 283: 29045-29052.
- Abbas, T., et al. 2008. PCNA-dependent regulation of p21 ubiquitylation and degradation via the CRL4^{Cdt2} ubiquitin ligase complex. *Genes Dev.* 22: 2496-2506.
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- Huang, D.T., et al. 2009. E2-RING expansion of the NEDD8 cascade confers specificity to cullin modification. *Mol. Cell* 33: 483-495.
- Kerzendorfer, C., et al. 2010. Mutations in Cullin 4B result in a human syndrome associated with increased camptothecin-induced topoisomerase I-dependent DNA breaks. *Hum. Mol. Genet.* 19: 1324-1334.


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