

CUL-1 (D-5): sc-17775

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.

CHROMOSOMAL LOCATION

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

SOURCE

CUL-1 (D-5) is a mouse monoclonal antibody raised against amino acids 57-269 of cullin-1 (CUL-1) of human origin.

PRODUCT

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

CUL-1 (D-5) is available conjugated to agarose (sc-17775 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17775 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17775 PE), fluorescein (sc-17775 FITC), Alexa Fluor® 488 (sc-17775 AF488), Alexa Fluor® 546 (sc-17775 AF546), Alexa Fluor® 594 (sc-17775 AF594) or Alexa Fluor® 647 (sc-17775 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17775 AF680) or Alexa Fluor® 790 (sc-17775 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-1 (D-5) is recommended for detection of CUL-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), 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).

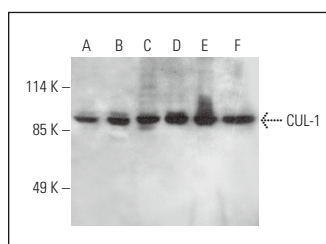
CUL-1 (D-5) is also recommended for detection of CUL-1 in additional species, including equine, canine, bovine and porcine.

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.

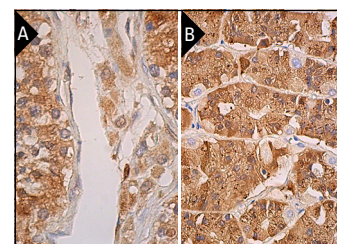
Molecular Weight of CUL-1: 85 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, F9 cell lysate: sc-2245 or KNRK whole cell lysate: sc-2214.

DATA



CUL-1 (D-5): sc-17775 HRP. Direct western blot analysis of CUL-1 expression in Hs 181 Tes (A), HOS (B), JAR (C), F9 (D), KNRK (E) and NIH/3T3 (F) whole cell lysates.



CUL-1 (D-5): sc-17775. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic and nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Voigt, J., et al. 2006. A dominant-negative form of the E3 ubiquitin ligase Cullin-1 disrupts the correct allocation of cell fate in the neural crest lineage. *Development* 133: 559-568.
2. Li, Y., et al. 2018. Heterozygous deletion of chromosome 17p renders prostate cancer vulnerable to inhibition of RNA polymerase II. *Nat. Commun.* 9: 4394.
3. Majolée, J., et al. 2019. CSN5 inhibition triggers inflammatory signaling and Rho/ROCK-dependent loss of endothelial integrity. *Sci. Rep.* 9: 8131.
4. Reichermeier, K.M., et al. 2020. PIKES analysis reveals response to degraders and key regulatory mechanisms of the CRL4 network. *Mol. Cell* 77: 1092-1106.e9.

RESEARCH USE

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