SANTA CRUZ BIOTECHNOLOGY, INC.

CUL-3 (C-3): sc-166054

SANTA CRUZ BIOTECHNOLOGY

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. CUI-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: CUL3 (human) mapping to 2q36.2; Cul3 (mouse) mapping to 1 C4.

SOURCE

CUL-3 (C-3) 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_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CUL-3 (C-3) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

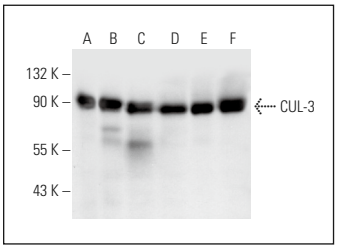
Molecular Weight of CUL-3: 89 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Jurkat whole cell lysate: sc-2204 or CUL-3 (m): 293T Lysate: sc-119518.

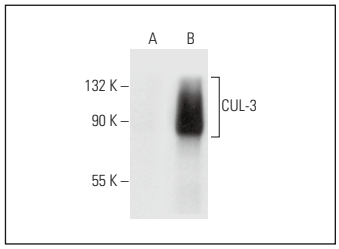
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CUL-3 (C-3): sc-166054. Western blot analysis of CUL-3 expression in HeLa (**A**), K-562 (**B**), Jurkat (**C**), Ramos (**D**), NIH/3T3 (**E**) and KNRK (**F**) whole cell lysates.



CUL-3 (C-3): sc-166054. Western blot analysis of CUL-3 expression in non-transfected: sc-117752 (**A**) and mouse CUL-3 transfected: sc-119518 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Levay, K. and Slepak, V.Z. 2014. Regulation of Cop9 signalosome activity by the EF-hand Ca^{2+}-binding protein tescalcin. J. Cell Sci. 127: 2448-2459.
2. Raghavan, S., et al. 2018. Protease-activated receptor 1 inhibits cholesterol efflux and promotes atherogenesis via cullin 3-mediated degradation of the ABCA1 transporter. J. Biol. Chem. 293: 10574-10589.
3. Peng, Q., et al. 2020. The small molecule PSSM0332 disassociates the $CRL4A^{DCAF8}$ E3 ligase complex to decrease the ubiquitination of NcoR1 and inhibit the inflammatory response in a mouse sepsis-induced myocardial dysfunction model. Int. J. Biol. Sci. 16: 2974-2988.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.