SANTA CRUZ BIOTECHNOLOGY, INC.

CUL-4 (H-11): sc-377188

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 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 vasopressin-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 (H-11) is a mouse monoclonal antibody raised against amino acids 536-597 mapping near the C-terminus of CUL-4 (cullin-4) 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.

CUL-4 (H-11) is available conjugated to agarose (sc-377188 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377188 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377188 PE), fluorescein (sc-377188 FITC), Alexa Fluor® 488 (sc-377188 AF488), Alexa Fluor® 546 (sc-377188 AF546), Alexa Fluor® 594 (sc-377188 AF594) or Alexa Fluor® 647 (sc-377188 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377188 AF680) or Alexa Fluor® 790 (sc-377188 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

CUL-4 (H-11) is recommended for detection of CUL-4A and CUL-4B 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).

CUL-4 (H-11) is also recommended for detection of CUL-4A and CUL-4B in additional species, including equine, canine, bovine, porcine and avian.

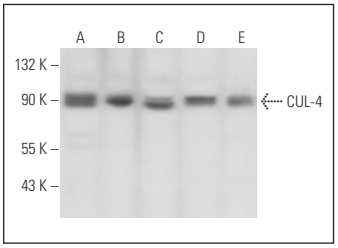
Molecular Weight of CUL-4: 80-85 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, HeLa whole cell lysate: sc-2200 or A-375 cell lysate: sc-3811.

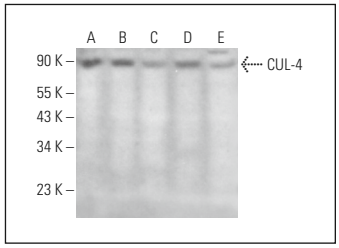
STORAGE

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

DATA



CUL-4 (H-11): sc-377188. Western blot analysis of CUL-4 expression in PC-12 (**A**), HeLa (**B**), NIH/3T3 (**C**), HL-60 (**D**) and Jurkat (**E**) whole cell lysates.



CUL-4 (H-11): sc-377188. Western blot analysis of CUL-4 expression in A-375 (**A**), EOC 20 (**B**), C2C12 (**C**), BYDP (**D**) and L6 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, Y., et al. 2018. Heterozygous deletion of chromosome 17p renders prostate cancer vulnerable to inhibition of RNA polymerase II. Nat. Commun. 9: 4394.
2. Yagi, H., et al. 2019. $G_{\alpha\ 13}$-mediated LATS1 down-regulation contributes to epithelial-mesenchymal transition in ovarian cancer. FASEB J. 33: 13683-13694.
3. Kido, K., et al. 2020. AirID, a novel proximity biotinylation enzyme, for analysis of protein-protein interactions. Elife 9: e54983.
4. Murali, S.K., et al. 2021. Potassium effects on NCC are attenuated during inhibition of Cullin E3-ubiquitin ligases. Cells 11: 95.
5. Zhang, K., et al. 2022. Exosome-mediated transfer of SNHG7 enhances docetaxel resistance in lung adenocarcinoma. Cancer Lett. 526: 142-154.
6. Zhang, H., et al. 2023. Targeting WDxR motif reprograms immune microenvironment and inhibits hepatocellular carcinoma progression. EMBO Mol. Med. 15: e15924.
7. Huang, Y., et al. 2023. Heat shock protein DNAJA2 regulates transcription-coupled repair by triggering CSB degradation via chaperone-mediated autophagy. Cell Discov. 9: 107.
8. Li, M., et al. 2024. Glucose deprivation triggers DCAF1-mediated inactivation of Rheb-mTORC1 and promotes cancer cell survival. Cell Death Dis. 15: 409.
9. Grossmann, J., et al. 2024. $CRL4^{DCAF1}$ ubiquitin ligase regulates PLK4 protein levels to prevent premature centriole duplication. Life Sci. Alliance 7: e202402668.
10. Zeng, Y., et al. 2024. Gut microbiota-derived indole-3-propionic acid alleviates diabetic kidney disease through its mitochondrial protective effect via reducing ubiquitination mediated-degradation of SIRT1. J. Adv. Res. E-published.

RESEARCH USE

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