SANTA CRUZ BIOTECHNOLOGY, INC.

CUL-7 (N-17): sc-48464

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-7 mediates the third step of ubiquitin conjugation as part of an SCF-like complex consisting of CUL-7, RBX1, SKP1, FBXW8 and GLMN isoform 1, which interacts with a complex of SKP1 and FBXW8, but not with SKP1 alone. This complex is thought to play a role in the degradation of proteins involved in proliferation and/or differentiation. CUL-7 is highly expressed in fetal kidney and adult skeletal muscle in addition to abundant expression in fetal brain and adult pancreas, kidney, placenta and heart. It is also detected in trophoblasts, lymphoblasts, osteoblasts, chondrocytes and skin fibroblasts. Defects in the gene encoding CUL-7 result in 3-M syndrome, an autosomal recessive disorder characterized by severe pre- and postnatal growth retardation, facial dysmorphism, large head circumference and normal intelligence and endocrine function as well as skeletal changes including long slender tubular bones and tall vertebral bodies.

REFERENCES

1. Kipreos, E.T., Lander, L.E., Wing, J.P., He, W.W. and Hedgecock, E.M. 1996. CUL-1 is required for cell cycle exit in *C. elegans* and identifies a novel gene family. Cell 85: 829-839.
2. Dias, D.C., Dolios, G., Wang, R. and Pan, Z.Q. 2002. CUL-7: A DOC domain-containing cullin selectively binds SKP1.FBX29 to form an SCF-like complex. Proc. Nat. Acad. Sci. USA 99: 16601-16606.
3. Arai, T., Kasper, J.S., Skaar, J.R., Ali, S.H., Takahashi, C. and DeCaprio, J.A. 2003. Targeted disruption of p185/CUL-7 gene results in abnormal vascular morphogenesis. Proc. Nat. Acad. Sci. USA 100: 9855-9860.
4. Huber, C., Dias-Santagata, D., Glaser, A., O'Sullivan, J., Brauner, R., Wu, K., Xu, X., Pearce, K., Wang, R., Uzielli, M.L., Dagoneau, N., Chemaitilly, W., Superti-Furga, A., Dos Santos, H., Megarbane, A., Morin, G., et al. 2005. Identification of mutations in CUL-7 in 3-M syndrome. Nat. Genet. 37: 1119-1124.
5. Skaar, J.R., Arai, T. and DeCaprio, J.A. 2005. Dimerization of CUL-7 and PARC is not required for all CUL-7 functions and mouse development. Mol. Cell. Biol. 25: 5579-5589.
6. Andrews, P., He, Y.J. and Xiong, Y. 2006. Cytoplasmic localized ubiquitin ligase growth by antagonizing p53 function. Oncogene 25: 4534-4548.
7. Kasper, J.S., Arai, T. and DeCaprio, J.A. 2006. A novel p53-binding domain in CUL-7. Biochem. Biophys. Res. Commun. 348: 132-138.
8. Tsunematsu, R., Nishiyama, M., Kotoshiba, S., Saiga, T., Kamura, T. and Nakayama, K.I. 2006. FBXW8 is essential for CUL1-CUL7 complex formation and for placental development. Mol. Cell. Biol. 26: 6157-6169.

CHROMOSOMAL LOCATION

Genetic locus: CUL7 (human) mapping to 6p21.1; Cul7 (mouse) mapping to 17 C.

RESEARCH USE

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

SOURCE

CUL-7 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CUL-7 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-48464 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CUL-7 (N-17) is recommended for detection of CUL-7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-7 (N-17) is also recommended for detection of CUL-7 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for CUL-7 siRNA (h): sc-60471, CUL-7 siRNA (m): sc-60472, CUL-7 shRNA Plasmid (h): sc-60471-SH, CUL-7 shRNA Plasmid (m): sc-60472-SH, CUL-7 shRNA (h) Lentiviral Particles: sc-60471-V and CUL-7 shRNA (m) Lentiviral Particles: sc-60472-V.

Molecular Weight of CUL-7: 185 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, T98G cell lysate: sc-2294 or U-2 OS cell lysate: sc-2295.

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) 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.

STORAGE

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

PROTOCOLS

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