SANTA CRUZ BIOTECHNOLOGY, INC.

Nrdp1 (h): 293T Lysate: sc-115234

BACKGROUND

The RING-type zinc finger motif is present in a number of viral and eukaryotic proteins and is made of a conserved cysteine-rich domain that is able to bind two zinc atoms. Proteins that contain this conserved domain are generally involved in the ubiquitination pathway of protein degradation. Nrdp1, also known as RNF41 (RING finger protein 41), SBBI03 or FLRF, is a 317 amino acid protein that contains one RING-type zinc finger and one SIAH-type zinc finger. Expressed in testis, ovary and prostate, Nrdp1 functions as an E3 ubiquitin-protein ligase that, characteristic of E3 ligase proteins, accepts ubiquitin (in the form of a thioester) from an E2 ubiquitin-conjugating enzyme and transfers that ubiquitin residue to substrates targeted for degradation. Specifically, Nrdp1 interacts with ErbB-3 and UBPY, thereby targeting them for proteasomal degradation.

REFERENCES

1. Abdullah, J.M., Li, X., Nachtman, R.G. and Jurecic, R. 2001. FLRF, a novel evolutionarily conserved RING finger gene, is differentially expressed in mouse fetal and adult hematopoietic stem cells and progenitors. Blood Cells Mol. Dis. 2: 320-333.
2. Diamonti, A.J., Guy, P.M., Ivanof, C., Wong, K., Sweeney, C. and Carraway, K.L. 2002. An RBCC protein implicated in maintenance of steady-state neuregulin receptor levels. Proc. Natl. Acad. Sci. USA 99: 2866-2871.
3. Qiu, X.B. and Goldberg, A.L. 2002. Nrdp1/FLRF is a ubiquitin ligase promoting ubiquitination and degradation of the epidermal growth factor receptor family member, ErbB-3. Proc. Natl. Acad. Sci. USA 99: 14843-14848.
4. Qiu, X.B., Markant, S.L., Yuan, J. and Goldberg, A.L. 2004. Nrdp1-mediated degradation of the gigantic IAP, BRUCE, is a novel pathway for triggering apoptosis. EMBO J. 23: 800-810.
5. Wu, X., Yen, L., Irwin, L., Sweeney, C. and Carraway, K.L. 2004. Stabilization of the E3 ubiquitin ligase Nrdp1 by the deubiquitinating enzyme USP8. Mol. Cell. Biol. 24: 7748-7757.
6. Avvakumov, G.V., Walker, J.R., Xue, S., Finerty, P.J., Mackenzie, F., Newman, E.M. and Dhe-Paganon, S. 2006. Amino-terminal dimerization, Nrdp1-rhodanese interaction, and inhibited catalytic domain conformation of the ubiquitin-specific protease 8 (USP8). J. Biol. Chem. 281: 38061-38070.
7. Liu, C.H., Goldberg, A.L. and Qiu, X.B. 2007. New insights into the role of the ubiquitin-proteasome pathway in the regulation of apoptosis. Chang Gung Med. J. 30: 469-479.
8. Cao, Z., Wu, X., Yen, L., Sweeney, C. and Carraway, K.L. 2007. Neuregulin-induced ErbB-3 downregulation is mediated by a protein stability cascade involving the E3 ubiquitin ligase Nrdp1. Mol. Cell. Biol. 27: 2180-2188.
9. Bouyain, S. and Leahy, D.J. 2007. Structure-based mutagenesis of the substrate-recognition domain of Nrdp1/FLRF identifies the binding site for the receptor tyrosine kinase ErbB-3. Protein Sci. 16: 654-661.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: RNF41 (human) mapping to 12q13.2.

PRODUCT

Nrdp1 (h): 293T Lysate represents a lysate of human Nrdp1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Nrdp1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Nrdp1 antibodies. Recommended use: 10-20 µl per lane.

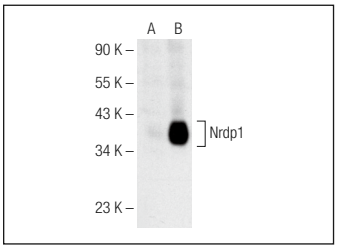
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Nrdp1 (B-8): sc-374120 is recommended as a positive control antibody for Western Blot analysis of enhanced human Nrdp1 expression in Nrdp1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



Nrdp1 (B-8): sc-374120. Western blot analysis of Nrdp1 expression in non-transfected: sc-117752 (**A**) and human Nrdp1 transfected: sc-115234 (**B**) 293T whole cell lysates.

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.