SANTA CRUZ BIOTECHNOLOGY, INC.

NDR1 (YJ-7): sc-100404

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The nuclear Dbf2-related kinases (NDR1 and NDR2) participate in the regulation of cell division and morphology and may be implicated in tumor progression. NDR1 and NDR2 share 86% amino acid identity, but differ in their expression pattern. NDR1 localizes to the nucleus, while NDR2 exhibits punctate cytoplasmic distribution. Also, NDR1 expression appears highest in spleen, lung and thymus, whereas NDR2 shows highest expression in the gastrointestinal tract. However, both NDR1 and NDR2 are regulated by phosphorylation and by the Ca^{2+}-binding protein S-100B. NDR1 and NDR2 may also play a role in the HIV-1 life cycle. Both proteins are cleaved by the HIV-1 protease (PR), which inhibits their enzymatic activity and alters the subcellular localization of NDR2. The genes encoding human NDR1 and NDR2 map to chromosomes 6p21.31 and 12p11.23, respectively.

REFERENCES

1. Tamaskovic, R., et al. 2003. Mechanism of Ca^{2+}-mediated regulation of NDR protein kinase through autophosphorylation and phosphorylation by an upstream kinase. J. Biol. Chem. 278: 6710-6718.
2. Stegert, M.R., et al. 2004. Regulation of NDR2 protein kinase by multi-site phosphorylation and the S-100B calcium-binding protein. J. Biol. Chem. 279: 23806-23812.

CHROMOSOMAL LOCATION

Genetic locus: STK38 (human) mapping to 6p21.31; Stk38 (mouse) mapping to 17 A3.3.

SOURCE

NDR1 (YJ-7) is a mouse monoclonal antibody raised against recombinant NDR1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NDR1 (YJ-7) is recommended for detection of NDR1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), 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).

Suitable for use as control antibody for NDR1 siRNA (h): sc-44366, NDR1 siRNA (m): sc-44367, NDR1 shRNA Plasmid (h): sc-44366-SH, NDR1 shRNA Plasmid (m): sc-44367-SH, NDR1 shRNA (h) Lentiviral Particles: sc-44366-V and NDR1 shRNA (m) Lentiviral Particles: sc-44367-V.

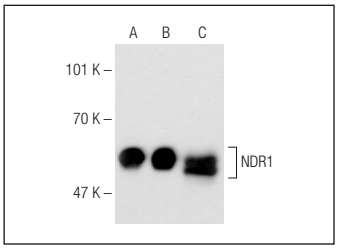
Molecular Weight of NDR1: 54 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, U-937 cell lysate: sc-2239 or HEL 92.1.7 cell lysate: sc-2270.

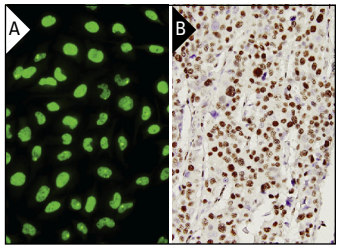
RECOMMENDED SUPPORT REAGENTS

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



NDR1 (YJ-7): sc-100404. Western blot analysis of NDR1 expression in U-937 (**A**) and HEL 92.1.7 (**B**) nuclear extracts and human PBL whole cell lysate (**C**).



NDR1 (YJ-7): sc-100404. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human malignant lymphoma, diffuse large B-cell tissue showing nuclear and cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Enomoto, A., et al. 2013. The HSP90 inhibitor 17-allylamino-17-demethoxygeldanamycin modulates radiosensitivity by downregulating serine/threonine kinase 38 via Sp1 inhibition. Eur. J. Cancer 49: 3547-3558.
2. Du, Z., et al. 2013. Cyclin D1 promotes cell cycle progression through enhancing NDR1/2 kinase activity independent of cyclin-dependent kinase 4. J. Biol. Chem. 288: 26678-26687.
3. Fukasawa, T., et al. 2015. Serine-threonine kinase 38 regulates CDC25A stability and the DNA damage-induced G_2/M checkpoint. Cell. Signal. 27: 1569-1575.

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.