

NDR1/2 (E-2): sc-271703

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 Ca²⁺-binding protein S100B. 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 Ca²⁺-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 S100B calcium-binding protein. *J. Biol. Chem.* 279: 23806-23812.
3. Devroe, E., et al. 2004. Human Mob proteins regulate the NDR1 and NDR2 serine-threonine kinases. *J. Biol. Chem.* 279: 24444-24451.
4. Bichsel, S.J., et al. 2004. Mechanism of activation of NDR (nuclear Dbf2-related) protein kinase by the hMOB1 protein. *J. Biol. Chem.* 279: 35228-35235.

CHROMOSOMAL LOCATION

Genetic locus: STK38 (human) mapping to 6p21.31, STK38L (human) mapping to 12p11.23; Stk38 (mouse) mapping to 17 A3.3, Stk38l (mouse) mapping to 6 G3.

SOURCE

NDR1/2 (E-2) is a mouse monoclonal antibody raised against amino acids 1-100 mapping at the N-terminus of NDR1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NDR1/2 (E-2) is available conjugated to agarose (sc-271703 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271703 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271703 PE), fluorescein (sc-271703 FITC), Alexa Fluor® 488 (sc-271703 AF488), Alexa Fluor® 546 (sc-271703 AF546), Alexa Fluor® 594 (sc-271703 AF594) or Alexa Fluor® 647 (sc-271703 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271703 AF680) or Alexa Fluor® 790 (sc-271703 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

NDR1/2 (E-2) is recommended for detection of NDR1 and NDR2 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).

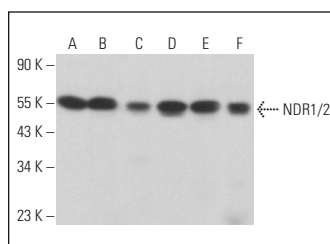
Molecular Weight of NDR1/2: 54 kDa.

Positive Controls: U-937 nuclear extract: sc-2156, RAW 264.7 whole cell lysate: sc-2211 or PC-12 cell lysate: sc-2250.

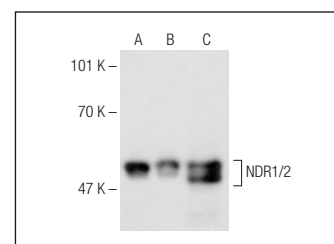
RECOMMENDED SUPPORT REAGENTS

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



NDR1/2 (E-2): sc-271703. Western blot analysis of NDR1/2 expression in RAW 264.7 (A), WEHI-231 (B), Ramos (C), Daudi (D) and PC-12 (E) whole cell lysates and K-562 nuclear extract (F).



NDR1/2 (E-2): sc-271703. Western blot analysis of NDR1/2 expression in U-937 (A) and HEL 92.1.7 (B) nuclear extracts and human PBL whole cell lysate (C).

SELECT PRODUCT CITATIONS

1. Du, Y., et al. 2015. Chronic lead exposure and mixed factors of gender×age×brain regions interactions on dendrite growth, spine maturity and NDR kinase. *PLoS ONE* 10: e0138112.
2. Zhang, W., et al. 2018. Monopolar spindle-one-binder protein 2 regulates the activity of large tumor suppressor/yes-associated protein to inhibit the motility of SMMC-7721 hepatocellular carcinoma cells. *Oncol. Lett.* 15: 5375-5383.

STORAGE

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

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