

# NIRF (C-10): sc-398953

## BACKGROUND

NIRF (Np95/ICBP90-like RING finger protein), also known as E3 ubiquitin-protein ligase UHRF2, nuclear zinc finger protein Np97 or RING finger protein 107, is a nuclear protein involved in cell cycle regulation. NIRF contains a PHD finger, two RING fingers, a ubiquitin-like domain and a YDG/SRA domain. It shares high structural homology with UHRF1 (also called ICBP90 in humans and Np95 in mice), however, in contrast to UHRF1, NIRF acts as a negative regulator of cell proliferation. It associates with the Cdk2-cyclin complex in its dephosphorylated form and induces G<sub>1</sub> arrest. NIRF plays an important role in the regulation of the G<sub>1</sub>/S transition by blocking cell entry into the S phase. While associated with Cdk2, NIRF becomes phosphorylated. NIRF can also act as a ubiquitin ligase and it ubiquitinates PCNP. In addition, NIRF can recruit and bind HDAC1 via its SRA domain. The overexpression of NIRF results in an increase of G<sub>1</sub> phase cells.

## REFERENCES

1. Mori, T., et al. 2002. NIRF, a novel RING finger protein, is involved in cell cycle regulation. *Biochem. Biophys. Res. Commun.* 296: 530-536.
2. Li, Y., et al. 2004. NIRF induces G<sub>1</sub> arrest and associates with Cdk2. *Biochem. Biophys. Res. Commun.* 319: 464-468.
3. Mori, T., et al. 2004. NIRF is a ubiquitin ligase that is capable of ubiquitinating PCNP, a PEST-containing nuclear protein. *FEBS Lett.* 557: 209-214.
4. Unoki, M., et al. 2004. ICBP90, an E2F-1 target, recruits HDAC1 and binds to methyl-CpG through its SRA domain. *Oncogene* 23: 7601-7610.
5. Abbady, A.Q., et al. 2005. TCR pathway involves ICBP90 gene down-regulation via E2F binding sites. *Biochem. Pharmacol.* 70: 570-579.
6. Muto, M., et al. 2006. Isolation and characterization of a novel human radiosusceptibility gene, NP95. *Radiat. Res.* 166: 723-733.

## CHROMOSOMAL LOCATION

Genetic locus: UHRF2 (human) mapping to 9p24.1; Uhrf2 (mouse) mapping to 19 C1.

## SOURCE

NIRF (C-10) is a mouse monoclonal antibody raised against amino acids 144-208 mapping near the N-terminus of NIRF of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NIRF (C-10) is available conjugated to agarose (sc-398953 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398953 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398953 PE), fluorescein (sc-398953 FITC), Alexa Fluor<sup>®</sup> 488 (sc-398953 AF488), Alexa Fluor<sup>®</sup> 546 (sc-398953 AF546), Alexa Fluor<sup>®</sup> 594 (sc-398953 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-398953 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-398953 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-398953 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

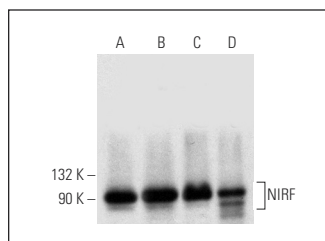
NIRF (C-10) is recommended for detection of NIRF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NIRF siRNA (h): sc-72380, NIRF siRNA (m): sc-72381, NIRF shRNA Plasmid (h): sc-72380-SH, NIRF shRNA Plasmid (m): sc-72381-SH, NIRF shRNA (h) Lentiviral Particles: sc-72380-V and NIRF shRNA (m) Lentiviral Particles: sc-72381-V.

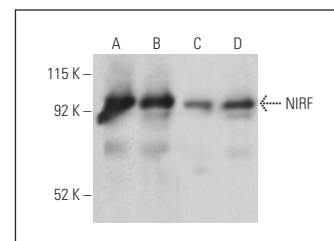
Molecular Weight of NIRF isoforms: 90/56 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Jurkat nuclear extract: sc-2132 or HeLa nuclear extract: sc-2120.

## DATA



NIRF (C-10): sc-398953. Western blot analysis of NIRF expression in Jurkat whole cell lysate (A) and Jurkat (B), HeLa (C) and SK-N-MC (D) nuclear extracts.



NIRF (C-10): sc-398953. Western blot analysis of NIRF expression in Jurkat (A) and HeLa (B) nuclear extracts and K-562 (C) and Hep G2 (D) whole cell lysates. Detection reagent used: m-IgG<sub>1</sub> BP-HRP: sc-525408.

## SELECT PRODUCT CITATIONS

1. Liu, Y., et al. 2016. Zinc finger protein 618 regulates UHRF2 (ubiquitin like with PHD and ring finger domains 2) function as a specific 5-hydroxymethylcytosine reader. *J. Biol. Chem.* 291: 13679-13688.
2. Liu, Y., et al. 2017. UHRF2 regulates local 5-methylcytosine and suppresses spontaneous seizures. *Epigenetics* 12: 551-560.
3. Sanchez-Fernandez, C., et al. 2019. UHRF genes regulate programmed interdigital tissue regression and chondrogenesis in the embryonic limb. *Cell Death Dis.* 10: 347.
4. Hanaki, S., et al. 2021. UV-induced activation of ATR is mediated by UHRF2. *Genes Cells* 26: 447-454.

## 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.