



RNF31 siRNA (h): sc-92101

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 protein-protein interactions and protein-DNA interactions. RNF31 (ring finger protein 31), also known as HOIP or ZIBRA, is a 1,072 amino acid protein containing two IBR-type zinc fingers, three RanBP2-type zinc fingers, one RING-type zinc finger and one UBA domain. Expressed in both normal and transformed breast epithelial cell lines, RNF31 is a component of the LUBAC complex (linear ubiquitin chain assembly complex), which conjugates linear polyubiquitin chains to substrates and is involved in NF κ B activation and regulation of inflammation. RNF31 exists as three alternatively spliced isoforms and is encoded by a gene located on human chromosome 14q12.

REFERENCES

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- Kirisako, T., et al. 2006. A ubiquitin ligase complex assembles linear polyubiquitin chains. *EMBO J.* 25: 4877-4887.
- Haas, T.L., et al. 2009. Recruitment of the linear ubiquitin chain assembly complex stabilizes the TNF-R1 signaling complex and is required for TNF-mediated gene induction. *Mol. Cell* 36: 831-844.
- Ehrlund, A., et al. 2009. E3 ubiquitin ligase RNF31 cooperates with DAX-1 in transcriptional repression of steroidogenesis. *Mol. Cell. Biol.* 29: 2230-2242.
- Tokunaga, F., et al. 2009. Involvement of linear polyubiquitylation of NEMO in NF κ B activation. *Nat. Cell Biol.* 11: 123-132.
- Hostager, B.S., et al. 2010. HOIL-1L interacting protein (HOIP) as an NF κ B regulating component of the CD40 signaling complex. *PLoS ONE* 5: e11380.
- Gerlach, B., et al. 2011. Linear ubiquitination prevents inflammation and regulates immune signalling. *Nature* 471: 591-596.
- Tokunaga, F., et al. 2011. SHARPIN is a component of the NF κ B-activating linear ubiquitin chain assembly complex. *Nature* 471: 633-636.

CHROMOSOMAL LOCATION

Genetic locus: RNF31 (human) mapping to 14q12.

PRODUCT

RNF31 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RNF31 shRNA Plasmid (h): sc-92101-SH and RNF31 shRNA (h) Lentiviral Particles: sc-92101-V as alternate gene silencing products.

For independent verification of RNF31 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-92101A, sc-92101B and sc-92101C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RNF31 siRNA (h) is recommended for the inhibition of RNF31 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RNF31 gene expression knockdown using RT-PCR Primer: RNF31 (h)-PR: sc-92101-PR (20 μ l, 513 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Li, S., et al. 2021. RNF31 mediated ubiquitination of A20 aggravates inflammation and hepatocyte apoptosis through the TLR4/MyD88/NF κ B signaling pathway. *Chem. Biol. Interact.* 348: 109623.
- Jin, Y., et al. 2024. LUBAC promotes angiogenesis and lung tumorigenesis by ubiquitinating and antagonizing autophagic degradation of HIF1 α . *Oncogenesis* 13: 6.

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.