SANTA CRUZ BIOTECHNOLOGY, INC.

TRIM31 siRNA (h): sc-76746

BACKGROUND

The tripartite motif (TRIM) family of proteins are characterized by a conserved TRIM domain that includes a coiled-coil region, a B-box type zinc finger, one RING finger and three zinc-binding domains. TRIM31 (tripartite motif-containing 31), also known as RNF, HCG1 or HCGI, is a 425 amino acid cytoplasmic protein that localizes to the mitochondria. Belonging to the TRIM/RBCC family, TRIM31 contains a variety of domains that are characteristic to TRIM proteins, including a RING-type zinc finger and a B box-type zinc finger. TRIM36 is upregulated in gastric adenocarcinomas and may participate in protein modification or ubiquitination. TRIM31 is a regulator of Src-induced anchorage independent cell growth and is suggested to have E3 ubiquitin-protein ligase activity. TRIM31 exists as two alternatively spliced isoforms, designated isoform A and isoform B.

REFERENCES

1. Reymond, A., et al. 2001. The tripartite motif family identifies cell compartments. EMBO J. 20: 2140-2151.
2. Ohkawa, N., et al. 2001. Molecular cloning and characterization of neural activity-related RING finger protein (NARF): a new member of the RBCC family is a candidate for the partner of Myosin V. J. Neurochem. 78: 75-87.
3. Dokmanovic, M., et al. 2002. Retinoid-induced growth arrest of breast carcinoma cells involves co-activation of multiple growth-inhibitory genes. Cancer Biol. Ther. 1: 24-27.
4. Meroni, G., et al. 2005. TRIM/RBCC, a novel class of "single protein RING finger" E3 ubiquitin ligases. Bioessays 27: 1147-1157.
5. Sardiello, M., et al. 2008. Genomic analysis of the TRIM family reveals two groups of genes with distinct evolutionary properties. BMC Evol. Biol. 8: 225.
6. Sugiura, T., et al. 2008. Characterization of TRIM31, upregulated in gastric adenocarcinoma, as a novel RBCC protein. J. Cell. Biochem. 105: 1081-1091.
7. Bowie, A.G. 2008. TRIM-ing down Tolls. Nat. Immunol. 9: 348-350.
8. Ozato, K., et al. 2008. TRIM family proteins and their emerging roles in innate immunity. Nat. Rev. Immunol. 8: 849-860.

CHROMOSOMAL LOCATION

Genetic locus: TRIM31 (human) mapping to 6p22.1.

PRODUCT

TRIM31 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TRIM31 shRNA Plasmid (h): sc-76746-SH and TRIM31 shRNA (h) Lentiviral Particles: sc-76746-V as alternate gene silencing products.

For independent verification of TRIM31 (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-76746A, sc-76746B and sc-76746C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TRIM31 siRNA (h) is recommended for the inhibition of TRIM31 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 µM in 66 µl. 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 TRIM31 gene expression knockdown using RT-PCR Primer: TRIM31 (h)-PR: sc-76746-PR (20 µl, 585 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhao, W., et al. 2020. AKT regulates NLRP3 inflammasome activation by phosphorylating NLRP3 serine 5. J. Immunol. 205: 2255-2264.
2. Lee, Y., et al. 2024. Inhibition of immunoproteasome attenuates NLRP3 inflammasome response by regulating E3 ubiquitin ligase TRIM31. Cells 13: 675.

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.