SANTA CRUZ BIOTECHNOLOGY, INC.

TRIM4 siRNA (h): sc-89605

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. TRIM proteins are involved in a wide variety of cellular processes such as cell development, proliferation, differentiation, oncogenesis and apoptosis. Many TRIM proteins are induced by type I and type II interferons, making them crucial for development of pathogen-resistance. TRIM4 (tripartite motif-containing protein 4), also known as RING finger protein 87, is a 500 amino acid protein that contains a variety of domains that are characteristic to TRIM proteins, including a RING-type zinc finger, a B box-type zinc finger and a B30.2/SPRY domain. The fusion kinase ZNF198-FGFR1, which is a constitutively activated tyrosine kinase associated with a specific atypical myeloproliferative disease, phosphorylates TRIM4, as well as SSBP2, c-Abl, FLJ14235 and CALM. This suggests that TRIM4 phosphorylation could be implicated in leukemogenesis.

REFERENCES

1. Jensen, K., Shiels, C. and Freemont, P.S. 2001. PML protein isoforms and the RBCC/TRIM motif. Oncogene 20: 7223-7233.
2. Nisole, S., Stoye, J.P. and Saïb, A. 2005. TRIM family proteins: retroviral restriction and antiviral defence. Nat. Rev. Microbiol. 3: 799-808.
3. Ozato, K., Shin, D.M., Chang, T.H. and Morse, H.C. 2008. TRIM family proteins and their emerging roles in innate immunity. Nat. Rev. Immunol. 8: 849-860.
4. Du Pasquier, L. 2009. Fish "n" TRIMs. J. Biol. 8: 50.
5. Kasyapa, C., Gu, T.L., Nagarajan, L., Natarajan, L., Polakiewicz, R. and Cowell, J.K. 2009. Phosphorylation of the SSBP2 and ABL proteins by the ZNF198-FGFR1 fusion kinase seen in atypical myeloproliferative disorders as revealed by phosphopeptide-specific MS. Proteomics 9: 3979-3988.
6. McNab, F.W., Rajsbaum, R., Stoye, J.P. and O'Garra, A. 2010. Tripartite-motif proteins and innate immune regulation. Curr. Opin. Immunol. 23: 46-56.
7. Chu, Y. and Yang, X. 2010. SUMO E3 ligase activity of TRIM proteins. Oncogene 30: 1108-1116.
8. Munir, M. 2010. TRIM proteins: another class of viral victims. Sci. Signal. 3: jc2.

CHROMOSOMAL LOCATION

Genetic locus: TRIM4 (human) mapping to 7q22.1.

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.

PRODUCT

TRIM4 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 TRIM4 shRNA Plasmid (h): sc-89605-SH and TRIM4 shRNA (h) Lentiviral Particles: sc-89605-V as alternate gene silencing products.

For independent verification of TRIM4 (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-89605A, sc-89605B and sc-89605C.

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

TRIM4 siRNA (h) is recommended for the inhibition of TRIM4 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 TRIM4 gene expression knockdown using RT-PCR Primer: TRIM4 (h)-PR: sc-89605-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.