



# RIL siRNA (h): sc-91925

## BACKGROUND

RIL (reversion-induced LIM protein), also known as PDZ and LIM domain protein 4, is a widely expressed 334 amino acid protein. RIL contains one PDZ(DHR) domain and one LIM zinc-binding domain. The LIM zinc-binding domain interacts with the second and fourth PDZ domains of Fap-1, possibly resulting in the dephosphorylation of RIL. Although an exact function is unknown, RIL expression in human bone marrow stromal cells suggests involvement in osteoblast development and function. Variations in the RIL gene have been shown to have an allelic dose effect on bone mineral density (BMD), with BMD being an important determinant of osteoporosis. RIL exists as two isoforms, with isoform 2 present in the brain.

## REFERENCES

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3. Cuppen, E., et al. 2000. The zyxin-related protein TRIP6 interacts with PDZ motifs in the adaptor protein RIL and the protein tyrosine phosphatase PTP-BL. *Eur. J. Cell Biol.* 79: 283-293.
4. Walma, T., et al. 2002. Structure, dynamics and binding characteristics of the second PDZ domain of PTP-BL. *J. Mol. Biol.* 316: 1101-1110.
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6. Omasu, F., et al. 2003. Association of genetic variation of the RIL gene, encoding a PDZ-LIM domain protein and localized in 5q31.1, with low bone mineral density in adult Japanese women. *J. Hum. Genet.* 48: 342-345.
7. Vallenius, T., et al. 2004. The PDZ-LIM protein RIL modulates actin stress fiber turnover and enhances the association of  $\alpha$ -actinin with F-Actin. *Exp. Cell Res.* 293: 117-128.

## CHROMOSOMAL LOCATION

Genetic locus: PDLIM4 (human) mapping to 5q31.1.

## PRODUCT

RIL 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RIL shRNA Plasmid (h): sc-91925-SH and RIL shRNA (h) Lentiviral Particles: sc-91925-V as alternate gene silencing products.

For independent verification of RIL (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-91925A, sc-91925B and sc-91925C.

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

## APPLICATIONS

RIL siRNA (h) is recommended for the inhibition of RIL 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

RIL (D-8): sc-166582 is recommended as a control antibody for monitoring of RIL gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RIL gene expression knockdown using RT-PCR Primer: RIL (h)-PR: sc-91925-PR (20  $\mu$ l, 471 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.