SANTA CRUZ BIOTECHNOLOGY, INC.

DDR1 siRNA (m): sc-35188

BACKGROUND

The majority of the large number of receptor tyrosine kinases that have been identified can be categorized into distinct families based on the structure of their extracellular domains. Only a limited number of ligands for the receptors have been described, and while the majority of the ligands identified are soluble factors, an increasing number of receptors have been shown to bind to cell-surface molecules. Discoidin domain receptor 1 (DDR1), previously identified as Cak, for cell adhesion kinase (and also designated MCK-10, EDDR1, NEP, Ptk-3, RTK6, Trk E or NTRK4) and discoidin domain receptor 2 (DDR2) comprise a new family of receptor tyrosine kinases involved in cell-cell interactions. Both DDR1 and DDR2 have been shown to be activated by collagen. Evidence suggests that a docking site for the Shc phosphotyrosine binding domain is phosphorylated in response to activation of DDR1 by collagen, whereas collagen activation of DDR2 results in upregulation of matrix metalloproteinase-1 expression.

REFERENCES

1. Ullrich, A., et al. 1990. Signal transduction by receptors with tyrosine kinase activity. Cell 61: 203-212.
2. Pawson, T., et al. 1990. Receptor tyrosine kinases: genetic evidence for their role in *Drosophila* and mouse development. Trends Genet. 6: 350-356.
3. Huang, E., et al. 1990. The hematopoietic growth factor KL is encoded by the S1 locus and is the ligand of the c-Kit receptor, the gene product of the W locus. Cell 63: 225-233.
4. Kramer, H., et al. 1991. Interaction of Bride of Sevenless membrane-bound ligand and the sevenless tyrosine-kinase receptor. Nature 325: 207-212.
5. Aaronson, S.A. 1991. Growth factors and cancer. Science 254: 1146-1153.
6. Perez, J.L., et al. 1994. Identification and chromosomal mapping of a receptor tyrosine kinase with a putative phospholipid binding sequence in its ectodomain. Oncogene 9: 211-219.
7. Vogel, W., et al. 1997. The discoidin domain receptor tyrosine kinases are activated by collagen. Mol. Cell 1: 13-23.
8. Shrivastava, A., et al. 1997. An orphan receptor tyrosine kinase family whose members serve as nonintegrin collagen receptors. Mol. Cell 1: 25-34.

CHROMOSOMAL LOCATION

Genetic locus: Ddr1 (mouse) mapping to 17 B1.

PRODUCT

DDR1 siRNA (m) is a pool of 2 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 DDR1 shRNA Plasmid (m): sc-35188-SH and DDR1 shRNA (m) Lentiviral Particles: sc-35188-V as alternate gene silencing products.

For independent verification of DDR1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35188A and sc-35188B.

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

DDR1 siRNA (m) is recommended for the inhibition of DDR1 expression in mouse 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.

GENE EXPRESSION MONITORING

DDR1 (D-10): sc-390268 is recommended as a control antibody for monitoring of DDR1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 DDR1 gene expression knockdown using RT-PCR Primer: DDR1 (m)-PR: sc-35188-PR (20 µl, 484 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 for detailed protocols and support products.