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CARD 11 siRNA (h): sc-41994

BACKGROUND

Modular protein interaction domains are an evolutionarily conserved protein contour feature in tertiary and quaternary protein folding that gives rise to a dynamic protein signaling network by mediating the assembly of encoded components into specific signaling complexes. Caspase-associated recruitment domain (CARD) proteins CARD11 and CARD14 are members of the membrane-associated guanylate kinase (MAGUK) family, a class of proteins that function as molecular scaffolds for the assembly of multiprotein complexes at the plasma membrane. The human CARD11 gene maps to chromosome 7p22.2 and encodes a 1,147 amino acid protein. The human CARD14 gene maps to chromosome 17q25 and encodes a 1,004 amino acid protein. CARD11 and CARD14 can function as components of signaling pathways that lead to activation of the transcription factor NFκB. The CARD domains of CARD11 and CARD14 can specifically interact with Bcl10, a protein known to function as a positive regulator of cell apoptosis and NFκB activation.

REFERENCES

1. Inohara, N., et al. 1999. Nod1, an Apaf-1-like activator of caspase-9 and nuclear factor-κB. *J. Biol. Chem.* 274: 14560-14567.
2. Pawson, T., et al. 2000. Protein-protein interactions define specificity in signal transduction. *Genes Dev.* 14: 1027-1047.
3. Bertin, J., et al. 2001. CARD11 and CARD14 are novel caspase recruitment domain (CARD)/membrane-associated guanylate kinase (MAGUK) family members that interact with BCL10 and activate NFκB. *J. Biol. Chem.* 276: 11877-11882.
4. Gaide, O., et al. 2001. Carma1, a CARD-containing binding partner of Bcl10, induces Bcl10 phosphorylation and NFκB activation. *FEBS Lett.* 496: 121-127.
5. LocusLink Report (LocusID: 79092). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: CARD11 (human) mapping to 7p22.2.

PRODUCT

CARD 11 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 CARD 11 shRNA Plasmid (h): sc-41994-SH and CARD 11 shRNA (h) Lentiviral Particles: sc-41994-V as alternate gene silencing products.

For independent verification of CARD 11 (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-41994A, sc-41994B and sc-41994C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

CARD 11 siRNA (h) is recommended for the inhibition of CARD 11 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.

GENE EXPRESSION MONITORING

CARD 11 (A-4): sc-166910 is recommended as a control antibody for monitoring of CARD 11 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 CARD 11 gene expression knockdown using RT-PCR Primer: CARD 11 (h)-PR: sc-41994-PR (20 μl). 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.