SANTA CRUZ BIOTECHNOLOGY, INC.

CARD 14 siRNA (h): sc-60330

BACKGROUND

Membrane-associated guanylate kinase (MAGUK) family members localize to the plasma membrane and function as molecular scaffolds for the assembly of multi-protein complexes. The MAGUK family includes several mammalian proteins related to the *Drosophila* tumor suppressor discs-large (dlg) gene product, such as postsynaptic proteins, GKAPs, the tight junction associated proteins (ZO-1–3) and the caspase-associated recruitment domain (CARD) proteins: CARD 6, CARD 8-12 and CARD 14. CARD 14 is a 1,004 amino acid protein consisting of an N-terminal CARD domain, a central coiled-coil domain and a C-terminal tripartite domain comprised of a PDZ domain, an Src homology 3 domain and a GUK domain with homology to guanylate kinase. CARD 14 is expressed in the placenta where it positively regulates apoptosis. CARD 14 also controls NFκB activation by phosphorylating Bcl10, a signaling protein that activates NFκB through the IκB kinase complex. Epigallocatechin-3-gallate (EGCG) is a polyphenol that induces the expression of CARD 14.

REFERENCES

1. Gaide, O., et al. 2001. Carma1, a CARD-containing binding partner of Bcl10, induces Bcl10 phosphorylation and NFκB activation. FEBS Lett. 496: 121-127.
2. Bertin, J., et al. 2001. CARD 11 and CARD 14 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.
3. Wang, L., et al. 2001. CARD 10 is a novel caspase recruitment domain/membrane-associated guanylate kinase family member that interacts with Bcl10 and activates NFκB. J. Biol. Chem. 276: 21405-21409.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607211. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Damiano, J.S. and Reed, J.C. 2004. CARD proteins as therapeutic targets in cancer. Curr. Drug Targets 5: 367-374.
6. Seibl, R., et al. 2004. Pattern recognition receptors and their involvement in the pathogenesis of arthritis. Curr. Opin. Rheumatol. 16: 411-418.

CHROMOSOMAL LOCATION

Genetic locus: CARD14 (human) mapping to 17q25.3.

PRODUCT

CARD 14 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 14 shRNA Plasmid (h): sc-60330-SH and CARD 14 shRNA (h) Lentiviral Particles: sc-60330-V as alternate gene silencing products.

For independent verification of CARD 14 (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-60330A, sc-60330B and sc-60330C.

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 14 siRNA (h) is recommended for the inhibition of CARD 14 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 CARD 14 gene expression knockdown using RT-PCR Primer: CARD 14 (h)-PR: sc-60330-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Peled, A., et al. 2019. Loss-of-function mutations in caspase recruitment domain-containing protein 14 (CARD14) are associated with a severe variant of atopic dermatitis. J. Allergy Clin. Immunol. 143: 173-181.

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.