

# CBARA1 siRNA (r): sc-270353

## BACKGROUND

The EF-hand domain is a twelve amino acid loop motif that is commonly found in proteins that participate in calcium-binding events within the cell. EF-hand domains generally exist in a pair that, together, form a stable four-helix bundle that enables the binding of calcium ions. CBARA1 (calcium binding atopy-related autoantigen 1), also known as CALC or EFHA3, is a 476 amino acid single-pass membrane protein that contains two EF-hand domains. Expressed at high levels in epidermal keratinocytes and dermal endothelial cells, CBARA1 functions to induce T cell-mediated autoreactivity, which is accompanied by the release of IFN- $\gamma$  and can induce an allergic reaction that leads to the formation of IgE. IgE can bind to otherwise innocuous environmental particles and, upon binding, can induce cross-linking with an IgE receptor, an event that is associated with atopic dermatitis (AD). Multiple isoforms of CBARA1 exist due to alternative splicing events.

## REFERENCES

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- Kawasaki, H., et al. 1995. Calcium-binding proteins 1: EF-hands. *Protein Profile* 2: 297-490.
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## CHROMOSOMAL LOCATION

Genetic locus: Micu1 (rat) mapping to 20q11.

## PRODUCT

CBARA1 siRNA (r) 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 CBARA1 shRNA Plasmid (r): sc-270353-SH and CBARA1 shRNA (r) Lentiviral Particles: sc-270353-V as alternate gene silencing products.

For independent verification of CBARA1 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270353A, sc-270353B and sc-270353C.

## 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

CBARA1 siRNA (r) is recommended for the inhibition of CBARA1 expression in rat 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CBARA1 gene expression knockdown using RT-PCR Primer: CBARA1 (r)-PR: sc-270353-PR (20  $\mu$ l). 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.