

# CBARA1 (T-14): sc-160211

## BACKGROUND

The EF-hand domain is a 12 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 2 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

1. Moncrief, N.D., Kretsinger, R.H. and Goodman, M. 1990. Evolution of EF-hand calcium-modulated proteins. I. Relationships based on amino acid sequences. *J. Mol. Evol.* 30: 522-562.
2. Nakayama, S., Moncrief, N.D. and Kretsinger, R.H. 1992. Evolution of EF-hand calcium-modulated proteins. II. Domains of several subfamilies have diverse evolutionary histories. *J. Mol. Evol.* 34: 416-448.
3. Maruyama, K. and Sugano, S. 1994. Oligo-capping: a simple method to replace the cap structure of eukaryotic mRNAs with oligoribonucleotides. *Gene* 138: 171-174.
4. Kawasaki, H. and Kretsinger, R.H. 1995. Calcium-binding proteins 1: EF-hands. *Protein Profile* 2: 297-490.
5. Natter, S., Seiberler, S., Hufnagl, P., Binder, B.R., Hirschl, A.M., Ring, J., Abeck, D., Schmidt, T., Valent, P. and Valenta, R. 1998. Isolation of cDNA clones coding for IgE autoantigens with serum IgE from atopic dermatitis patients. *FASEB J.* 12: 1559-1569.
6. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 605084. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Aichberger, K.J., Mittermann, I., Reininger, R., Seiberler, S., Swoboda, I., Spitzauer, S., Kopp, T., Stingl, G., Sperr, W.R., Valent, P., Repa, A., Bohle, B., Kraft, D. and Valenta, R. 2005. Hom s 4, an IgE-reactive autoantigen belonging to a new subfamily of calcium-binding proteins, can induce Th cell type 1-mediated autoreactivity. *J. Immunol.* 175: 1286-1294.

## CHROMOSOMAL LOCATION

Genetic locus: MICU1 (human) mapping to 10q22.1; Micu1 (mouse) mapping to 10 B4.

## SOURCE

CBARA1 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CBARA1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160211 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CBARA1 (T-14) is recommended for detection of CBARA1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CBARA1 (T-14) is also recommended for detection of CBARA1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CBARA1 siRNA (h): sc-90788, CBARA1 siRNA (m): sc-142033, CBARA1 shRNA Plasmid (h): sc-90788-SH, CBARA1 shRNA Plasmid (m): sc-142033-SH, CBARA1 shRNA (h) Lentiviral Particles: sc-90788-V and CBARA1 shRNA (m) Lentiviral Particles: sc-142033-V.

Molecular Weight of CBARA1: 54 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## 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) or our catalog for detailed protocols and support products.