

CALML4 (T-14): sc-246047

BACKGROUND

The level of intracellular calcium is tightly regulated in all eukaryotic cells. A modest increase in this level can result in a myriad of physiological responses, most of which are mediated by calmodulin (CaM), the universal calcium sensor. CaM directly modulates the activity of protein kinases and phosphatases, ion channels and nitric oxide synthetases. CaM is generally involved in such diverse processes as cell proliferation, endocytosis, cellular adhesion, protein turnover and smooth muscle contraction. CALML4 (calmodulin-like protein 4), also known as serologically defined breast cancer antigen NY-BR-20, is a 196 amino acid protein that contains 4 EF-hand domains and shares functional similarity with CaM. Related to the calmodulin family of calcium binding proteins, CALML4 is a novel calcium binding protein expressed in breast cancer cells. There are three isoforms of CALML4 that are produced as a result of alternative splicing events.

REFERENCES

1. Yaswen, P., Smoll, A., Peehl, D.M., Trask, D.K., Sager, R. and Stampfer, M.R. 1990. Downregulation of a calmodulin-related gene during transformation of human mammary epithelial cells. *Proc. Natl. Acad. Sci. USA* 87: 7360-7364.
2. Rhyner, J.A., Koller, M., Durussel-Gerber, I., Cox, J.A. and Strehler, E.E. 1992. Characterization of the human calmodulin-like protein expressed in *Escherichia coli*. *Biochemistry* 31: 12826-12832.
3. Méhul, B., Bernard, D. and Schmidt, R. 2001. Calmodulin-like skin protein: a new marker of keratinocyte differentiation. *J. Invest. Dermatol.* 116: 905-909.
4. Rogers, M.S., Kobayashi, T., Pittelkow, M.R. and Strehler, E.E. 2001. Human calmodulin-like protein is an epithelial-specific protein regulated during keratinocyte differentiation. *Exp. Cell Res.* 267: 216-224.
5. Scanlan, M.J., Gout, I., Gordon, C.M., Williamson, B., Stockert, E., Gure, A.O., Jäger, D., Chen, Y.T., Mackay, A., O'Hare, M.J. and Old, L.J. 2001. Humoral immunity to human breast cancer: antigen definition and quantitative analysis of mRNA expression. *Cancer Immun.* 1: 4.
6. Durussel, I., Méhul, B., Bernard, D., Schmidt, R. and Cox, J.A. 2002. Cation- and peptide-binding properties of human calmodulin-like skin protein. *Biochemistry* 41: 5439-5448.
7. Chen, L., Fink, T., Zhang, X.Y., Ebbesen, P. and Zachar, V. 2005. Quantitative transcriptional profiling of ATDC5 mouse progenitor cells during chondrogenesis. *Differentiation* 73: 350-363.
8. Méhul, B., Bernard, D., Brouard, M., Delattre, C. and Schmidt, R. 2006. Influence of calcium on the proteolytic degradation of the calmodulin-like skin protein (calmodulin-like protein 5) in psoriatic epidermis. *Exp. Dermatol.* 15: 469-477.
9. Babini, E., Bertini, I., Capozzi, F., Chirivino, E. and Luchinat, C. 2006. A structural and dynamic characterization of the EF-hand protein CLSP. *Structure* 14: 1029-1038.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

CHROMOSOMAL LOCATION

Genetic locus: CALML4 (human) mapping to 15q23; Calml4 (mouse) mapping to 9 B.

SOURCE

CALML4 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CALML4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-246047 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CALML4 (T-14) is recommended for detection of CALML4 of mouse 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); non cross-reactive with other CALML family members.

CALML4 (T-14) is also recommended for detection of CALML4 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for CALML4 siRNA (h): sc-90091, CALML4 siRNA (m): sc-108087, CALML4 shRNA Plasmid (h): sc-90091-SH, CALML4 shRNA Plasmid (m): sc-108087-SH, CALML4 shRNA (h) Lentiviral Particles: sc-90091-V and CALML4 shRNA (m) Lentiviral Particles: sc-108087-V.

Molecular Weight of CALML4: 22/14/9 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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ 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™ 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.

PROTOCOLS

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