

# CT-R (2F7): sc-293299

## BACKGROUND

Calcitonin (CT) is a circulating peptide hormone that is secreted from the thyroid and specifically binds to surface calcitonin receptors (CT-R) to regulate calcium homeostasis. These receptors represent a distinct family of seven transmembrane proteins, which include receptors for parathyroid hormone/parathyroid-related peptide, secretin and glucagon. CT-Rs induce intracellular signaling by coupling to multiple heterotrimeric G proteins, where they then activate several signal transduction pathways involving adenylyl cyclase, phospholipase C and Map kinases. The gene encoding CT-R consists of numerous exons separated by larger introns, which are modified to produce multiple splice variants. These functionally unique isoforms display differential tissue distribution and preferentially associate with specific G proteins to recruit distinct signaling intermediates. In osteoclasts and embryonic kidney cells, CT binding to the CT-R stimulates the map kinases Erk1/2 and PKC activity through the phosphorylation of the adaptor proteins Shc and HEF1, and this induction occurs independently from PKA and adenylyl cyclase mediated signaling.

## REFERENCES

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- Yamin, M., et al. 1994. Cloning and characterization of a mouse brain calcitonin receptor complementary deoxyribonucleic acid and mapping of the calcitonin receptor gene. *Endocrinology* 135: 2635-2643.
- Kuestner, R.E., et al. 1994. Cloning and characterization of an abundant subtype of the human calcitonin receptor. *Mol. Pharmacol.* 46: 246-255.
- Chen, Y., et al. 1998. The calcitonin receptor stimulates Shc tyrosine phosphorylation and Erk1/2 activation. Involvement of G<sub>i</sub>, protein kinase C, and calcium. *J. Biol. Chem.* 273: 19809-19816.
- Shyu, J.F., et al. 1999. Protein kinase C antagonizes pertussis-toxin-sensitive coupling of the calcitonin receptor to adenylyl cyclase. *Eur. J. Biochem.* 262: 95-101.
- Zhang, Z., et al. 1999. Cytoskeleton-dependent tyrosine phosphorylation of the p130<sup>Cas</sup> family member HEF1 downstream of the G protein-coupled calcitonin receptor. Calcitonin induces the association of HEF1, paxillin, and focal adhesion kinase. *J. Biol. Chem.* 274: 25093-25098.
- Nishikawa, T., et al. 1999. A novel calcitonin receptor gene in human osteoclasts from normal bone marrow. *FEBS Lett.* 458: 409-414.

## CHROMOSOMAL LOCATION

Genetic locus: CALCR (human) mapping to 7q21.3.

## SOURCE

CT-R (2F7) is a mouse monoclonal antibody raised against amino acids 394-474 of CT-R of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

CT-R (2F7) is recommended for detection of CT-R of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

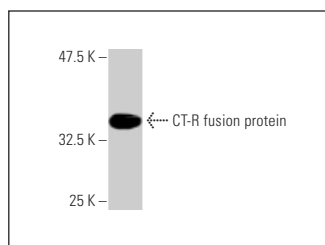
Suitable for use as control antibody for CT-R siRNA (h): sc-39908, CT-R shRNA Plasmid (h): sc-39908-SH and CT-R shRNA (h) Lentiviral Particles: sc-39908-V.

Molecular Weight of CT-R isoforms: 59/55/50/52/34/32 kDa.

## RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



CT-R (2F7): sc-293299. Western blot analysis of human recombinant CT-R fusion protein.

## SELECT PRODUCT CITATIONS

- Ishida, M., et al. 2021. Serpinb1a suppresses osteoclast formation. *Biochem. Biophys. Rep.* 26: 101004.

## 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) for detailed protocols and support products.