

# CT-R (M-19): sc-8861

## 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

1. Copp, D.H. 1994. Calcitonin: discovery, development, and clinical application. *Clin. Invest. Med.* 17: 268-277.
2. Kuestner, R.E., et al. 1994. Cloning and characterization of an abundant subtype of the human calcitonin receptor. *Mol. Pharmacol.* 46: 246-255.
3. 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.
4. 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.
5. 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.

## CHROMOSOMAL LOCATION

Genetic locus: Calcr (mouse) mapping to 6 A1.

## SOURCE

CT-R (M-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CT-R of mouse 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-8861 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## APPLICATIONS

CT-R (M-19) is recommended for detection of CT-R of mouse and rat 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)], 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).

Suitable for use as control antibody for CT-R siRNA (m): sc-39909, CT-R shRNA Plasmid (m): sc-39909-SH and CT-R shRNA (m) Lentiviral Particles: sc-39909-V.

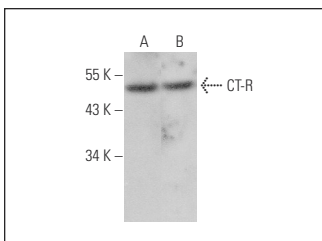
Molecular Weight of CT-R isoforms: 59/55/50/52/34/32 kDa.

Positive Controls: C6 whole cell lysate: sc-364373 or RAT2 whole cell lysate: sc-364198.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



CT-R (M-19): sc-8861. Western blot analysis of CT-R expression in C6 (A) and RAT2 (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Ramirez-Yañez, G.O., et al. 2005. Local application of prostaglandin E2 reduces trap, calcitonin receptor and metalloproteinase-2 immunoreactivity in the rat periodontium. *Arch. Oral Biol.* 50: 1014-1022.

## 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.