SANTA CRUZ BIOTECHNOLOGY, INC.

Calcitonin (14C12): sc-51797

BACKGROUND

Calcitonin is a 32 amino acid polypeptide hormone that preserves skeletal integrity and reduces blood calcium levels by decreasing osteoclast activity in bones, calcium and phosphate reabsorption by kidney tubules and calcium absorption by the intestines. The secretion of Calcitonin from the thyroid is regulated in part by estrogen, which increases Calcitonin mRNA levels. The Calcitonin gene, CALCA, undergoes tissue-specific RNA alternative splicing, resulting in the production of different mRNA transcripts. One transcript encodes procalcitonin as well as both calcium-lowering processed active polypeptides, Calcitonin and katacalcin. An alternative transcript of CALCA encodes the precursor for the neuropeptide referred to as Calcitonin gene-related peptide 1, also designated CGRP1 or α-CGRP. CGRP is a widely distributed vasodilatory peptide. Calcitonin and katacalcin are produced primarily in the thyroid, while CGRP is produced in neuronal cells. A second CGRP related gene, CALCB, thought to be derived from an gene duplication event, has been identified in mouse, rat and human. Unlike CALCA, CALCB is not subject to alternative splicing and encodes a single transcript designated CGRP2 or β-CGRP. Mature CGRP1 and CGRP2 share significant sequence identity at the protein level differing by only 1-3 amino acid residues, depending on the species.

REFERENCES

1. Le Moullec, J.M., et al. 1984. The complete sequence of human preprocalcitonin. FEBS Lett. 167: 93-97.
2. Wronski, T.J., et al. 1991. Skeletal effects of calcitonin in ovariectomized rats. Endocrinology 129: 2246-2250.
3. Silver, J., et al. 1993. Calcitonin gene regulation *in vivo*. Horm. Metab. Res. 25: 470-472.
4. Assicot, M., et al. 1993. High serum procalcitonin concentrations in patients with sepsis and infection. Lancet 341: 515-518.
5. Wimalawansa, S.J. 1997. Amylin, calcitonin gene-related peptide, calcitonin and adrenomedullin: a peptide superfamily. Crit. Rev. Neurobiol. 11: 167-239.
6. Bracq, S., et al. 1997. Calcitonin mRNA is produced in liver by two different splicing pathways. Mol. Cell Endocrinol. 128: 111-115.

CHROMOSOMAL LOCATION

Genetic locus: CALCA (human) mapping to 11p15.1.

SOURCE

Calcitonin (14C12) is a mouse monoclonal antibody raised against full length human calcitonin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Calcitonin (14C12) is recommended for detection of calcitonin 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 CALCA siRNA (h): sc-39277, CALCA shRNA Plasmid (h): sc-39277-SH and CALCA shRNA (h) Lentiviral Particles: sc-39277-V.

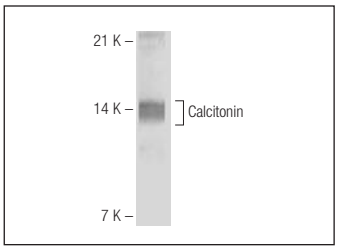
Molecular Weight of Calcitonin: 14.5 kDa.

Positive Controls: TT whole cell lysate.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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).

DATA



Calcitonin (14C12): sc-51797. Western blot analysis of human recombinant Calcitonin protein.

RESEARCH USE

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

PROTOCOLS

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