

Calcitonin (16B5): sc-51798

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 katecalcitonin. 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 katecalcitonin are produced primarily in the thyroid, while CGRP is produced in neuronal cells. A second CGRP related gene, CALCB, thought to be derived from a 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. Höppener, J.W., et al. 1985. The second human calcitonin/CGRP gene is located on chromosome 11. *Hum. Genet.* 70: 259-263.
3. Amara, S.G., et al. 1985. Expression in brain of a messenger RNA encoding a novel neuropeptide homologous to calcitonin gene-related peptide. *Science* 229: 1094-1097.
4. Wronski, T.J., et al. 1991. Skeletal effects of calcitonin in ovariectomized rats. *Endocrinology* 129: 2246-2250.
5. Silver, J., et al. 1993. Calcitonin gene regulation *in vivo*. *Horm. Metab. Res.* 25: 470-472.
6. Hoovers, J.M., et al. 1993. High-resolution chromosomal localization of the human calcitonin/CGRP/IAPP gene family members. *Genomics* 15: 525-529.

CHROMOSOMAL LOCATION

Genetic locus: CALCA (human) mapping to 11p15.2.

SOURCE

Calcitonin (16B5) is a mouse monoclonal antibody raised against a recombinant fragment of Calcitonin of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Calcitonin (16B5) is recommended for detection of calcitonin and procalcitonin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

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.

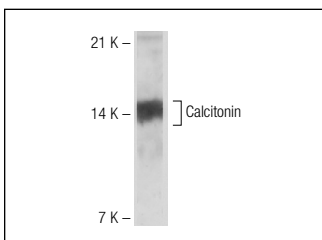
Molecular Weight of Calcitonin: 15 kDa.

Positive Controls: TT whole cell lysate: sc-364195.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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



Calcitonin (16B5): sc-51798. Western blot analysis of human recombinant Calcitonin protein.

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 for detailed protocols and support products.