SANTA CRUZ BIOTECHNOLOGY, INC.

CGRP (H-48): sc-28920

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 known as Calcitonin gene-related peptide 1, also designated CGRP1 or a-CGRP. CGRP1 is a widely distributed vasodilatory peptide. Calcitonin and katacalcin are produced primarily in the thyroid, while CGRP1 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: CALCA/CALCB (human) mapping to 11p15.2; Calca/Calcb (mouse) mapping to 7 F1.

SOURCE

CGRP (H-48) is a rabbit polyclonal antibody raised against amino acids 81-128 mapping at the C-terminus of CGRP 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.

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.

APPLICATIONS

CGRP (H-48) is recommended for detection of CGRP1 and CGRP2 of mouse, rat and 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)], 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).

CGRP (H-48) is also recommended for detection of CGRP1 and CGRP2 in additional species, including equine, canine, bovine and avian.

Molecular Weight of pro CGRP: 13 kDa.

Molecular Weight of CGRP active form: 5 kDa.

Positive Controls: mouse lung extract: sc-2390.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Bonner, K., et al. 2010. Expression of functional receptor activity modifying protein 1 by airway epithelial cells with dysregulation in asthma. J. Allergy Clin. Immunol. 126: 1277-1283.
2. Kay, A.B., 2011. Calcitonin gene-related peptide- and vascular endothelial growth factor-positive inflammatory cells in late-phase allergic skin reactions in atopic subjects. J. Allergy Clin. Immunol. 127: 232-237.
3. Barcena de Arellano, M.L., et al. 2011. Influence of nerve growth factor in endometriosis-associated symptoms. Reprod. Sci. 18: 1202-1210.
4. Lim, Y.Y., et al. 2012. A comparison of neuropeptide expression in skin with allergic contact dermatitis in human and mouse. Int. J. Dermatol. 51: 939-946.

PROTOCOLS

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