ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Calcitonin-Gene Related Peptide (CGRP) Antibodies

Cat. # CGRP11-P	Human CGRP Control/blocking Peptide # 1	**SIZE**: 100 ug
Cat. # CGRP11-S	Rabbit Anti-Human CGRP antiserum # 1	**SIZE**: 100 ul
Cat. # CGRP11-A	Rabbit Anti-Human CGRP IgG # 1 (aff pure)	**SIZE**: 100 ug

The calcitonin family of bioactive peptides comprises of **calcitonin**, **amylin**, two calcitonin-gene related peptides (**CGRP1**, and **CGRP2**) and adrenomedullin (**ADM**). **Calcitonin** is 32 aa peptide found in the parafollicular "C" cells of the thyroid in mammals. It is also found in a number of non-mammals. It regulated the mineral (calcium and phosphate) balance. Calcitonin causes hypercalcemia by acting as an inhibitor of osteoclast induced bone resorption. **CGRP** is a 37-aa peptide produced by tissue specific processing of the calcitonin gene. Calcitonin is the major product in the thyroid, whereas CGRP is the major product in neural tissues. CGRP is a potent cardiovascular agent. It has structural similarity with amylin. CGRP is found in two isoforms (CGRP-I and CGRP-II) that differs only by 3 amino acids. The calcitonin family peptides probably act through G-protein coupled membrane receptors. Recently, a homolog of calcitonin receptor, **CRLR** (calcitonin-receptor-like receptor human 461 aa; rat/mouse 463 aa) was identified. It is now shown that CRLR can function as either a CGRP receptor or an ADM receptor, depending upon which members of a new family of proteins called receptor activity modifying proteins (**RAMP1-3**) are expressed.

FUNCTION: CGRP induces vasodilation. It dilates a variety of vessels including the coronary, cerebral and systemic vasculature. Its abundance in the CNS also points toward a neurotransmitter or neuromodulator role.
SUBCELLULAR LOCATION: Secreted.
SIMILARITY: Belongs to the calcitonin family.
Protein name Calcitonin gene-related peptide 2 [Precursor]
Synonyms Calcitonin gene-related peptide II; CGRP-II; Beta-type CGRP
Gene name Name: CALCB ; **Synonyms**: CALC2

Source of Antigen and Antibodies

Antigen	19-aa peptide of Human CGRP/CALCA (protein accession # P10092, refs 1; **Designated (CGRP11-P or control peptide)** conjugated to KLH
Location	~N-terminus
Ab Host/type	Rabbit, polyclonal Unpurified antiserum (cat #CGRP11-S) Aff pure IgG (**cat #CGRP11-A**) purified over antigen-agarose column
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique). see refs 2.

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: We recommend the use of affinity purified antibody at 2-20 ug/ml in paraformaldehyde fixed sections of tissues. see refs 2.

Specificity & Cross-reactivity

The human CGRP11-P is quite conserved in various species: equine, sheep, pig, canine, rat, mouse, bovine, frog, monkey, chicken, zebra fish (84-95%). There is just 1 aa change between the human CGRP1 and CGRP2. Significant sequence homology is also found with amylin. However, no significant sequence homology is detected with calcitonin or adrenomedullin. Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com\data\abblock.html).

General References: (1) Steenbergh et al (1986) FEBS Lett. 209, 97-103; Petermann JB et al (1987) JBC 262, 542-545; Wimalwamsa SJ et al (1990) BBRC 167, 993-1000; Kitamura k et al (1992) BBRC 185, 134-141; McLatchie LM et al (1998) Nature 393, 333-339; Nagae T et al (2000) BBRC 270, 89-93; Husmann, K et al (2000); Mol Cell Endocrinol (2000) 162, 35-43.

(2) Citations of ADI's Antibodies (see web site for updated list)

Thengchaisri N, 2005, AJP Heart Circ Physiol, 289: 608, IHC
Rivers RJ, 2005, AJP Heart Circ Physiol, ;289(2):H608-13, IF

*This product is for In vitro research use only.

Related material available from ADI

Antibodies RAMP1-3, Amylin, calcitonin, CGRP, Adrenomedullin,

CGRP11-S-A-P 70813A

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