

Calcitonin receptors in GtoPdb v.2023.1

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Abstract

This receptor family comprises a group of receptors for the calcitonin/CGRP family of peptides. The calcitonin (CT), amylin (AMY), calcitonin gene-related peptide (CGRP) and adrenomedullin (AM) receptors (**nomenclature as agreed by the [NC-IUPHAR Subcommittee on CGRP, AM, AMY, and CT receptors \[131, 74, 71\]](#)**) are generated by the genes *CALCR* (which codes for the CT receptor, CTR) and *CALCRL* (which codes for the calcitonin receptor-like receptor, CLR, previously known as CRLR). Their function and pharmacology are altered in the presence of RAMPs (receptor activity-modifying proteins), which are single TM domain proteins of *ca.* 150 amino acids, identified as a family of three members; RAMP1, RAMP2 and RAMP3. There are splice variants of the CTR; these in turn produce variants of AMY receptors [131], some of which can be potently activated by CGRP. The endogenous agonists are the peptides [calcitonin](#), [\$\alpha\$ -CGRP](#) (formerly known as CGRP-I), [\$\beta\$ -CGRP](#) (formerly known as CGRP-II), [amylin](#) (occasionally called islet-amyloid polypeptide, diabetes-associated polypeptide), [adrenomedullin](#) and [adrenomedullin 2/intermedin](#). There are species differences in peptide sequences, particularly for the CTs. [CTR-stimulating peptide](#) (CRSP) is another member of the family with selectivity for the CTR but it is not expressed in humans [93]. CLR (calcitonin receptor-like receptor) by itself binds no known endogenous ligand, but in the presence of RAMPs it gives receptors for CGRP, adrenomedullin and adrenomedullin 2/intermedin. There are several approved drugs that target this receptor family, such as [pramlintide](#), [erenumab](#), and the "gepant" class of CGRP receptor antagonists. There are also species differences in agonist pharmacology; for example, CGRP displays potent activity at multiple rat and mouse receptors [58, 15]. The summary table only reflects human receptor pharmacology.

Contents

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Database links

Calcitonin receptors

<https://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=11>

Introduction to Calcitonin receptors

<https://www.guidetopharmacology.org/GRAC/FamilyIntroductionForward?familyId=11>

Receptors

Complexes

AMY₁ receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=44>

AMY₂ receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=45>

AMY₃ receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=46>

CGRP receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=48>

AM₁ receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=49>

AM₂ receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=50>

Receptors and Subunits

CT receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=43>

calcitonin receptor-like receptor

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=47>

Accessory Proteins

RAMP1

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=51>

RAMP2

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=52>

RAMP3

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=53>

RAMP1

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=51>

RAMP2

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RAMP3

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=53>

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