

## Calcitonin receptors (version 2019.4) in the IUPHAR/BPS Guide to Pharmacology Database

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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 [122, 67]**) are generated by the genes *CALCR* (which codes for the CT receptor) 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. 130 amino acids, identified as a family of three members; RAMP1, RAMP2 and RAMP3. There are splice variants of the CT receptor; these in turn produce variants of the AMY receptor [122], some of which can be potently activated by CGRP. The endogenous agonists are the peptides *calcitonin*, *α-CGRP* (formerly known as CGRP-I), *β-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 CT receptor but it is not expressed in humans [87]. *olcegepant* (also known as BIBN4096BS, *pKi*~10.5) and *telcagepant* (also known as MK0974, *pKi*~9) are the most selective antagonists available, showing selectivity for CGRP receptors, with a particular preference for those of primate origin. 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.

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### Calcitonin receptors

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

### Introduction to Calcitonin receptors

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#### Receptors

##### Complexes

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

##### AMY<sub>2</sub> receptor

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##### AM<sub>2</sub> receptor

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

#### Receptors and Subunits

##### CT receptor

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

##### calcitonin receptor-like receptor

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

#### Accessory Proteins

##### RAMP1

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

##### RAMP2

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##### RAMP3

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##### RAMP1

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##### RAMP2

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##### RAMP3

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