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Calcitonin receptors in GtoPdb v.2025.3

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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 [134, 76, 73]**) are generated by the genes *CALCR* (which codes for the calcitonin 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 amylin receptors [134], 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 calcitonins. CTR-stimulating peptide (CRSP) is another member of the family with selectivity for the CTR but it is not expressed in humans [95]. 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 [60, 15]. The summary table only reflects human receptor pharmacology.

Contents

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calcitonin receptor-like receptor

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RAMP1

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

RAMP2

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RAMP3

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RAMP1

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RAMP3

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