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Calcitonin receptors in GtoPdb v.2021.2

Debbie Hay[1], David R. Poyner[2] and Christopher S. Walker[1]

1. University of Auckland, New Zealand
2. Aston University, UK

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) 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 CT receptor; these in turn produce variants of the AMY receptor [131], 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 [94]. 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.

Contents

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