Receptor guanylyl cyclase (RGC) family in GtoPdb v.2023.1

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Abstract

The mammalian genome encodes seven guanylyl cyclases, GC-A to GC-G, that are homodimeric transmembrane receptors activated by a diverse range of endogenous ligands. These enzymes convert guanosine-5'-triphosphate to the intracellular second messenger cyclic guanosine-3',5'-monophosphate (cyclic GMP). GC-A, GC-B and GC-C are expressed predominantly in the cardiovascular system, skeletal system and intestinal epithelium, respectively. GC-D and GC-G are found in the olfactory neuroepithelium and Grueneberg ganglion of rodents, respectively. GC-E and GC-F are expressed in retinal photoreceptors.

Contents

This is a citation summary for Receptor guanylyl cyclase (RGC) family in the Guide to Pharmacology database (GtoPdb). It exists purely as an adjunct to the database to facilitate the recognition of citations to and from the database by citation analyzers. Readers will almost certainly want to visit the relevant sections of the database which are given here under database links.

GtoPdb is an expert-driven guide to pharmacological targets and the substances that act on them. GtoPdb is a reference work which is most usefully represented as an on-line database. As in any publication this work should be appropriately cited, and the papers it cites should also be recognized. This document provides a citation for the relevant parts of the database, and also provides a reference list for the research cited by those parts. For further details see [2].

Please note that the database version for the citations given in GtoPdb are to the most recent preceding version in which the family or its subfamilies and targets were substantially changed. The links below are to the current version. If you need to consult the cited version, rather than the most recent version, please contact the GtoPdb curators.
Database links

Receptor guanylyl cyclase (RGC) family
https://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=1022

Transmembrane guanylyl cyclases
https://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=662

Receptors

GC-A (Guanylyl cyclase-A)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1747

GC-B (Guanylyl cyclase-B)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1748

GC-C (Guanylyl cyclase-C)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1750

NPR-C (natriuretic peptide receptor 3)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1749

GC-D (Guanylyl cyclase-D)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2898

GC-E (Guanylyl cyclase-E)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2031

GC-F (Guanylyl cyclase-F)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2899

GC-G (Guanylyl cyclase-G)
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2900

Nitric oxide (NO)-sensitive (soluble) guanylyl cyclase
https://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=939

Receptors and Subunits

Guanylyl cyclase α1 subunit
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1288

Guanylyl cyclase α2 subunit
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1289

Guanylyl cyclase β1 subunit
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1290

Guanylyl cyclase β2 subunit
https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1291

References


pharmacology and broad therapeutic potential. *Nitric Oxide* **78**: 72-80 [PMID:29859918]


42. Stasch JP and Hobbs AJ. (2009) NO-independent, haem-dependent soluble guanylate cyclase


