

Receptor guanylyl cyclase (RGC) family (version 2020.3) in the IUPHAR/BPS Guide to Pharmacology Database

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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

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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](#)

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=1022>

[Transmembrane guanylyl cyclases](#)

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=662>

Receptors

GC-A(Guanylyl cyclase-A)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1747>

GC-B(Guanylyl cyclase-B)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1748>

GC-C(Guanylyl cyclase-C)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1750>

NPR-C(natriuretic peptide receptor 3)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1749>

GC-D(Guanylyl cyclase-D)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2898>

GC-E(Guanylyl cyclase-E)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2031>

GC-F(Guanylyl cyclase-F)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2899>

GC-G(Guanylyl cyclase-G)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2900>

Nitric oxide (NO)-sensitive (soluble) guanylyl cyclase

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=939>

Receptors

Complexes

GC-1(Guanylyl cyclase, $\alpha_1\beta_1$)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1287>

GC-2(Guanylyl cyclase, $\alpha_2\beta_1$)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2897>

Receptors and Subunits

Guanylyl cyclase α_1 subunit

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1288>

Guanylyl cyclase α_2 subunit

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1289>

Guanylyl cyclase β_1 subunit

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1290>

Guanylyl cyclase β_2 subunit

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1291>

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