

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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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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