

## Regulators of G protein Signaling (RGS) proteins (version 2019.4) in the IUPHAR/BPS Guide to Pharmacology Database

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### Abstract

Regulators of G protein signalling (RGS) proteins display a common RGS domain that interacts with the GTP-bound G $\alpha$  subunits of heterotrimeric G proteins, enhancing GTP hydrolysis by stabilising the transition state [29, 419, 418], leading to a termination of GPCR signalling. Interactions through protein:protein interactions of many RGS proteins have been identified for targets other than heteromeric G proteins. Sequence analysis of the 20 RGS proteins suggests four families of RGS: RZ, R4, R7 and R12 families. Many of these proteins have been identified to have effects other than through targeting G proteins. Included here is RGS4 for which a number of pharmacological inhibitors have been described.

### Contents

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## Database links

### Regulators of G protein Signaling (RGS) proteins

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=891>

#### RZ family

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=892>

#### Targets

RGS17(regulator of G-protein signaling 17)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2801>

RGS19(regulator of G-protein signaling 19)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2802>

RGS20(regulator of G-protein signaling 20)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2803>

#### R4 family

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=893>

#### Targets

RGS1(regulator of G-protein signaling 1)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2804>

RGS2(regulator of G-protein signaling 2)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2808>

RGS3(regulator of G-protein signaling 3)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2810>

RGS4(regulator of G-protein signaling 4)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2811>

RGS5(regulator of G-protein signaling 5)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2812>

RGS8(regulator of G-protein signaling 8)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2813>

RGS13(regulator of G-protein signaling 13)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2805>

RGS16(regulator of G-protein signaling 16)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2806>

RGS18(regulator of G-protein signaling 18)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2807>

RGS21(regulator of G-protein signaling 21)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2809>

#### R7 family

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=894>

#### Targets

RGS6(regulator of G-protein signaling 6)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2815>

RGS7(regulator of G-protein signaling 7)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2816>

RGS9(regulator of G-protein signaling 9)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2817>

RGS11(regulator of G-protein signaling 11)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2814>

#### R12 family

## Targets

RGS10(regulator of G-protein signaling 10)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2818>

RGS12(regulator of G-protein signaling 12)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2819>

RGS14(regulator of G-protein signaling 14)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=2820>

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