

Somatostatin receptors bind somatostatin and cortistatin

Bockaert, J., D'Eustachio, P., Jassal, B.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of [Creative Commons Attribution 4.0 International \(CC BY 4.0\) License](https://creativecommons.org/licenses/by/4.0/). For more information see our [license](https://reactome.org/licenses/).

04/05/2024

Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references

- Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics*, 18, 142. [↗](#)
- Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)
- Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res*, 46, D649-D655. [↗](#)
- Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, 14, e1005968. [↗](#)

Reactome database release: 88

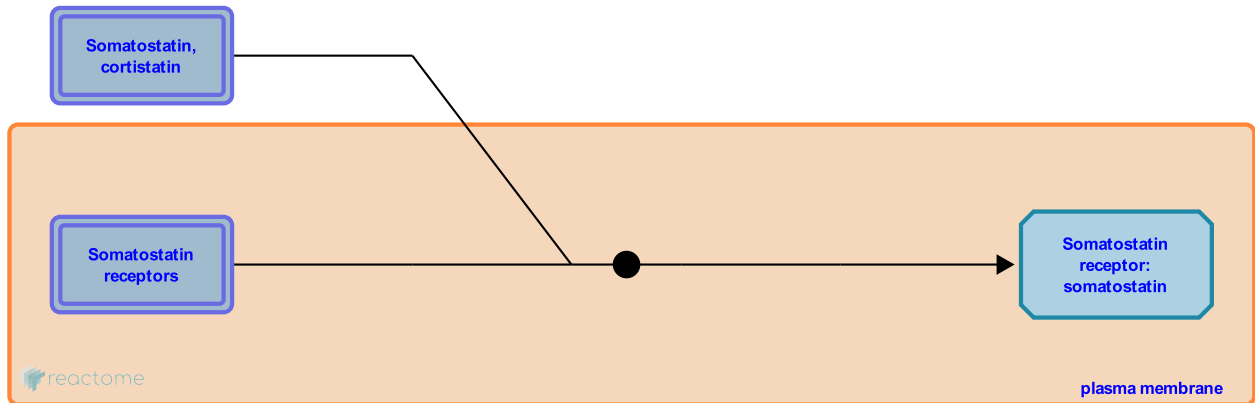
This document contains 1 reaction ([see Table of Contents](#))

Somatostatin receptors bind somatostatin and cortistatin [↗](#)

Stable identifier: R-HSA-374758

Type: binding

Compartments: extracellular region, plasma membrane



Somatostatin (growth hormone inhibiting hormone, GHIH; somatotropin release-inhibiting factor, SRIF) (Shen LP et al, 1992) is a peptide hormone that regulates the endocrine system and affects neurotransmission and cell proliferation via interaction with somatostatin receptors 1-5 (Hoyer D et al, 1995). Somatostatin has two active forms produced by alternative cleavage of the single preproprotein and named according to the number of amino acids in the chain; Somatostatin-28 and somatostatin-14. The 5 receptors known to date all couple with pertussis toxin-sensitive G proteins to inhibit adenylate cyclase after ligand binding. They were classified according to the dates they were discovered; SSTR1 and 2 (Yamada Y et al, Jan. 1992), SSTR3 (Yamada Y et al, Dec. 1992) and SSTR4 and SSTR5 (Yamada Y et al, Sep. 1993).

Literature references

- Li, Q., Ihara, Y., Yamada, Y., Kagimoto, S., Masuda, K., Yasuda, K. et al. (1993). Cloning, functional expression and pharmacological characterization of a fourth (hSSTR4) and a fifth (hSSTR5) human somatostatin receptor subtype. *Biochem Biophys Res Commun*, 195, 844-52. [↗](#)
- Ihara, Y., Seino, M., Yamada, Y., Kagimoto, S., Reisine, T., Bell, GI. et al. (1992). Somatostatin receptors, an expanding gene family: cloning and functional characterization of human SSTR3, a protein coupled to adenylyl cyclase. *Mol Endocrinol*, 6, 2136-42. [↗](#)
- Yamada, Y., Post, SR., Bell, GI., Wang, K., Seino, S., Tager, HS. (1992). Cloning and functional characterization of a family of human and mouse somatostatin receptors expressed in brain, gastrointestinal tract, and kidney. *Proc Natl Acad Sci U S A*, 89, 251-5. [↗](#)

Editions

2008-08-21	Authored	Jassal, B.
2008-09-01	Reviewed	Bockaert, J.
2008-09-01	Edited	D'Eustachio, P.