Glucagon:GCGR mediates GTP-GDP exchange

D'Eustachio, P., Gopinathrao, G.

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

19/05/2024

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. ↗

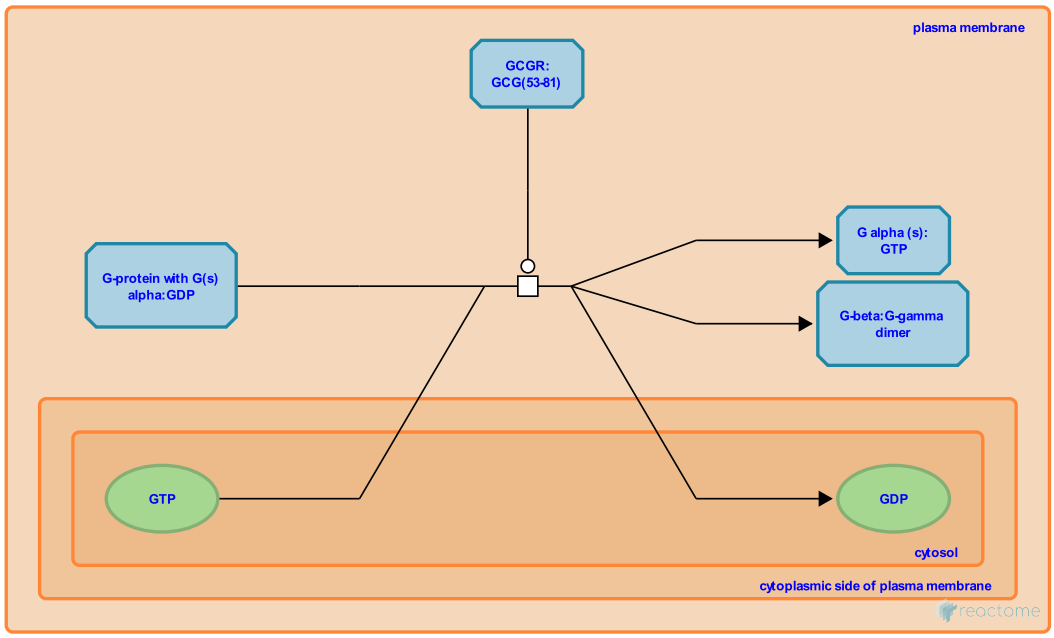
Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗

Glucagon:GCGR mediates GTP-GDP exchange ↗

Stable identifier: R-HSA-825631

Type: transition

Compartments: plasma membrane, cytosol



The G(s)alpha G-beta G-gamma complex bound to glucagon, in the plasma membrane, releases a molecule of bound GDP, binds a molecule of GTP, and dissociates to yield a G(s)alpha:GTP complex and a G-beta:G-gamma dimer (Siu et al. 2013).

Literature references

de Graaf, C., Xu, Q., Lau, J., Cherezov, V., Zhou, C., Wang, MW. et al. (2013). Structure of the human glucagon class B G-protein-coupled receptor. *Nature, 499*, 444-9. ↗

Editions

2005-08-12	Authored	Gopinathrao, G.
2010-05-26	Edited, Reviewed	D'Eustachio, P.