G-protein coupled bile acid receptor binds lithocholic acid

D'Eustachio, P., Jupe, S.

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

15/08/2022

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. ↗

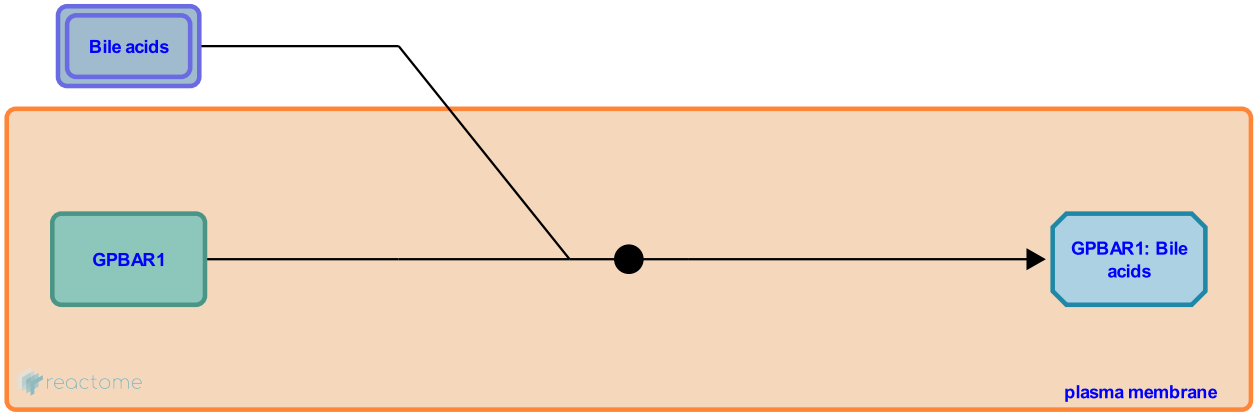
Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗

G-protein coupled bile acid receptor binds lithocholic acid ↗

Stable identifier: R-HSA-444654

Type: binding

Compartments: extracellular region, plasma membrane



The G-protein coupled bile acid receptor (GPBAR1) responds to several bile acids the most potent being lithocholic acid. Primary bile acids are acidic sterols synthesized from cholesterol in the liver where they are conjugated with glycine or taurine. Following synthesis bile acids are stored in the gall bladder and secreted into the duodenum where they facilitate solubilization and absorption of lipid-soluble vitamins and dietary fats. Bile acids can also regulate expression of various transport proteins and enzymes through the binding and activation of nuclear receptors, particularly FXR.

Literature references

Shintani, Y., Habata, Y., Kawamata, Y., Fujisawa, Y., Itoh, T., Hinuma, S. et al. (2003). A G protein-coupled receptor responsive to bile acids. *J Biol Chem, 278*, 9435-40. ↗

Editions

2009-10-23	Authored	Jupe, S.
2009-12-12	Reviewed	D'Eustachio, P.
2010-03-01	Edited	Jupe, S.