SPP1 (osteopontin) binds CD44

Jupe, S., Ricard-Blum, S.

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

18/05/2024

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. ↗

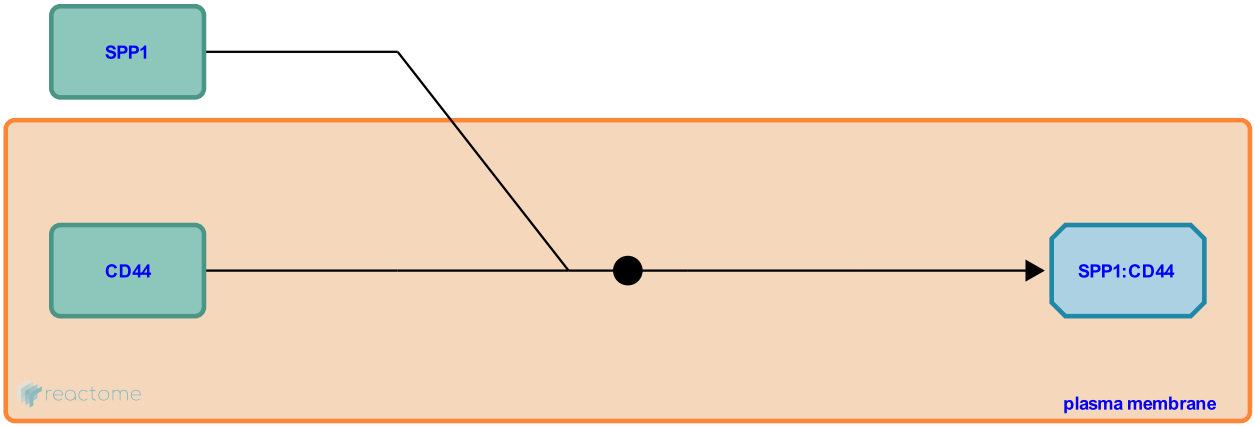
Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗

SPP1 (osteopontin) binds CD44 ↗

Stable identifier: R-HSA-2752115

Type: binding

Compartments: plasma membrane, extracellular region



Osteopontin (SPP1) is a member of the small integrin-binding ligand N-linked glycoprotein (SIBLING) family of proteins (Bellahcène et al. 2008). It is a highly phosphorylated sialoprotein and prominent component of the mineralized extracellular matrices of bones and teeth. It binds multiple integrins including alphaVbeta3, alphaVbeta1 and alphaVbeta5 (Liaw et al. 1995) alpha9beta1 (Smith et al. 1996, Yokosaki et al. 1999), alpha4beta1 (Bayliss et al. 1998) and the receptor CD44 (Weber et al. 1996, Katagiri et al. 1999). The SPP1–CD44 interaction may be important for colorectal cancer progression (Rao et al. 2013).

Literature references

Ashkar, S., Cantor, H., Glimcher, MJ., Weber, GF. (1996). Receptor-ligand interaction between CD44 and osteopontin (Eta-1). *Science, 271*, 509-12. ↗

Editions

2012-07-31	Authored	Jupe, S.
2013-04-26	Edited	Jupe, S.
2013-05-22	Reviewed	Ricard-Blum, S.