MASTL (GWL) phosphorylates ARPP19

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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.

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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. ↗
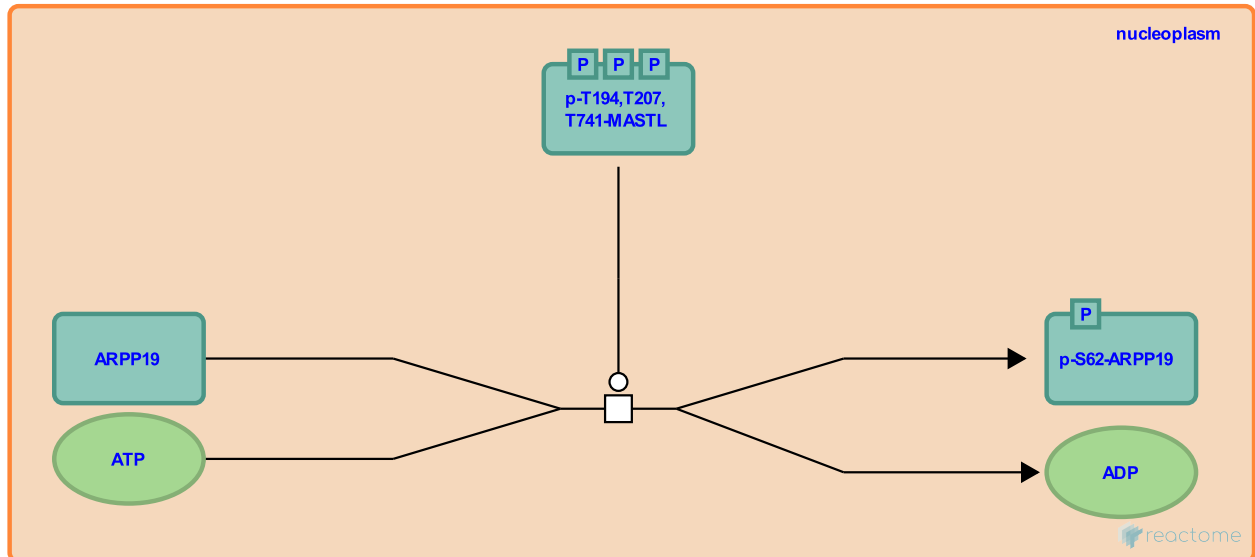
Reactome database release: 88

This document contains 1 reaction ()

MASTL (GWL) phosphorylates ARPP19 ↗

Stable identifier: R-HSA-2168079

Type: transition

Compartments: nucleoplasm

MASTL (GWL i.e. Greatwall kinase) phosphorylates ARPP19 on serine residue S62 (Gharbi-Ayachi et al. 2010). S62 of human ARPP19 corresponds to serine residue S67 of Xenopus Arpp19, which is phosphorylated by Xenopus Mastl (Mochida et al. 2010).

Literature references

Skehel, M., Mochida, S., Hunt, T., Maslen, SL. (2010). Greatwall phosphorylates an inhibitor of protein phosphatase 2A that is essential for mitosis. *Science, 330*, 1670-3. ↗

Lorca, T., Burgess, A., Van-Dorsselaer, A., Vigneron, S., Strub, JM., Gharbi-Ayachi, A. et al. (2010). The substrate of Greatwall kinase, Arpp19, controls mitosis by inhibiting protein phosphatase 2A. *Science, 330*, 1673-7. ↗

Editions

2012-09-04	Authored	Orlic-Milacic, M.
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