

p-S62-ARPP19/p-S67-ENSA binds PP2A- PPP2R2D

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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. [↗](#)
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Reactome database release: 88

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

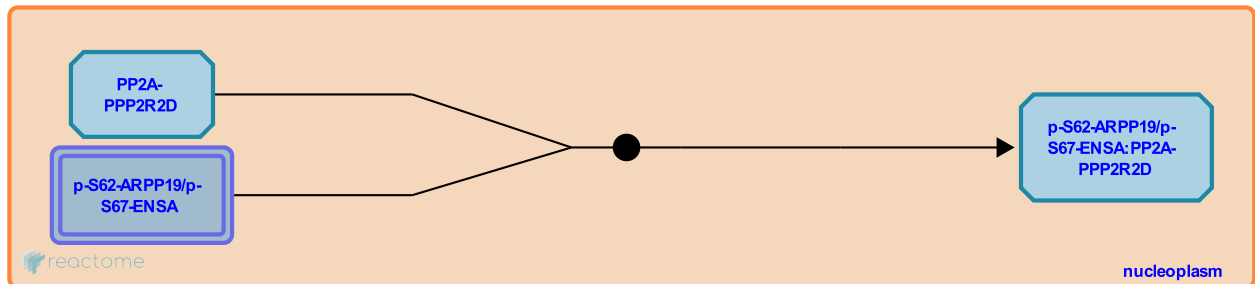
p-S62-ARPP19/p-S67-ENSA binds PP2A-PPP2R2D [↗](#)

Stable identifier: R-HSA-2430552

Type: binding

Compartments: nucleoplasm

Inferred from: p-S67-Ensa/p-S67-Arpp19 binds PP2A-Ppp2r2d (Xenopus laevis)



ARPP19 and ENSA, activated by MASTL (GWL) mediated phosphorylation, bind and inhibit PP2A complexed with the regulatory subunit PPP2R2D (B55-delta). Inhibition of PP2A-PPP2R2D phosphatase activity allows mitosis entry and maintenance by preventing dephosphorylation of CDK1 mitotic targets (Mochida et al. 2010, Gharbi-Ayachi 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.
2012-09-14	Edited	Gillespie, ME.
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