SRPK1/2 phosphorylates nucleoprotein

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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

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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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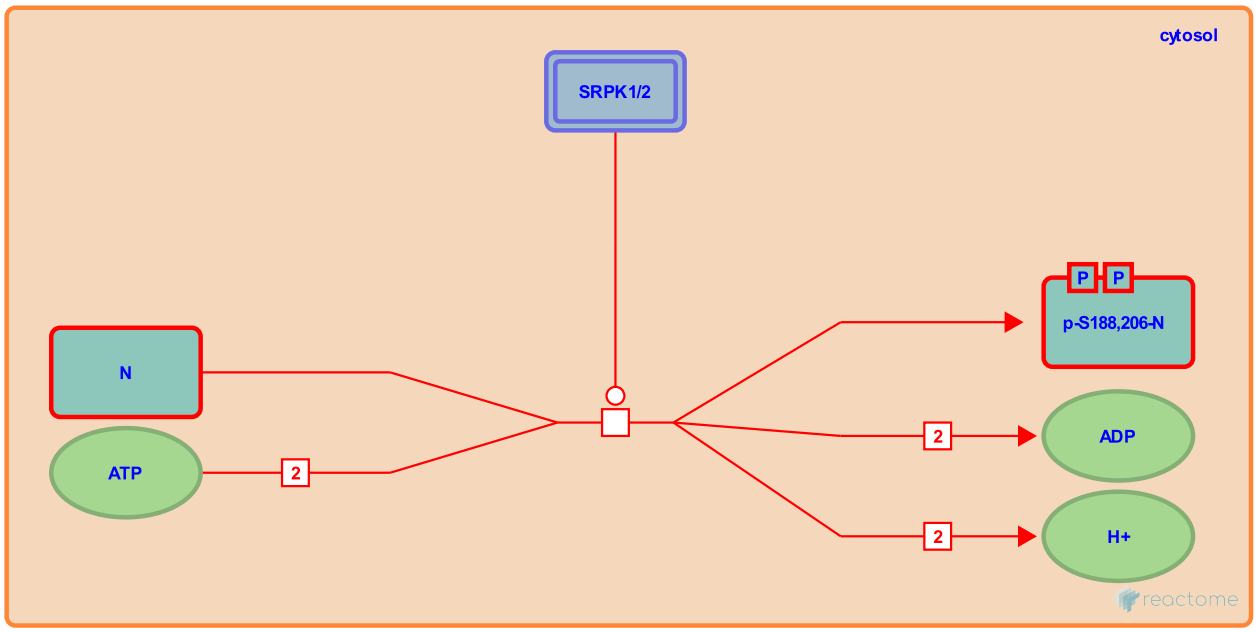
Stable identifier: R-HSA-9729330

Type: transition

Compartments: cytosol

Diseases: COVID-19



Full phosphorylation of SARS-CoV-2 nucleoprotein (N) depends on priming phosphorylations on at least two sites by SRPK1/2 protein kinases (Heaton et al, 2020; Carlson et al, 2020). Both kinases are monomers that need a magnesium cofactor to work, and are activated through phosphorylation by CK2 kinase (Daub et al, 2002).

Literature references

Howard, CJ., Hartooni, N., Ghent, CM., Carlson, CR., Morgan, DO., Frankel, AD. et al. (2020). Phosphoregulation of Phase Separation by the SARS-CoV-2 N Protein Suggests a Biophysical Basis for its Dual Functions. *Mol Cell, 80*, 1092-1103.e4. ↗

Chaparian, RR., Bulaon, DK., Anand, SK., Johnson, JL., Shobana-Ganesh, K., Trimarco, JD. et al. (2020). The FDA-approved drug Alectinib compromises SARS-CoV-2 nucleocapsid phosphorylation and inhibits viral infection in vitro. *bioRxiv*. ↗

Editions

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