ISGylation of host proteins

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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. ↗

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. ↗

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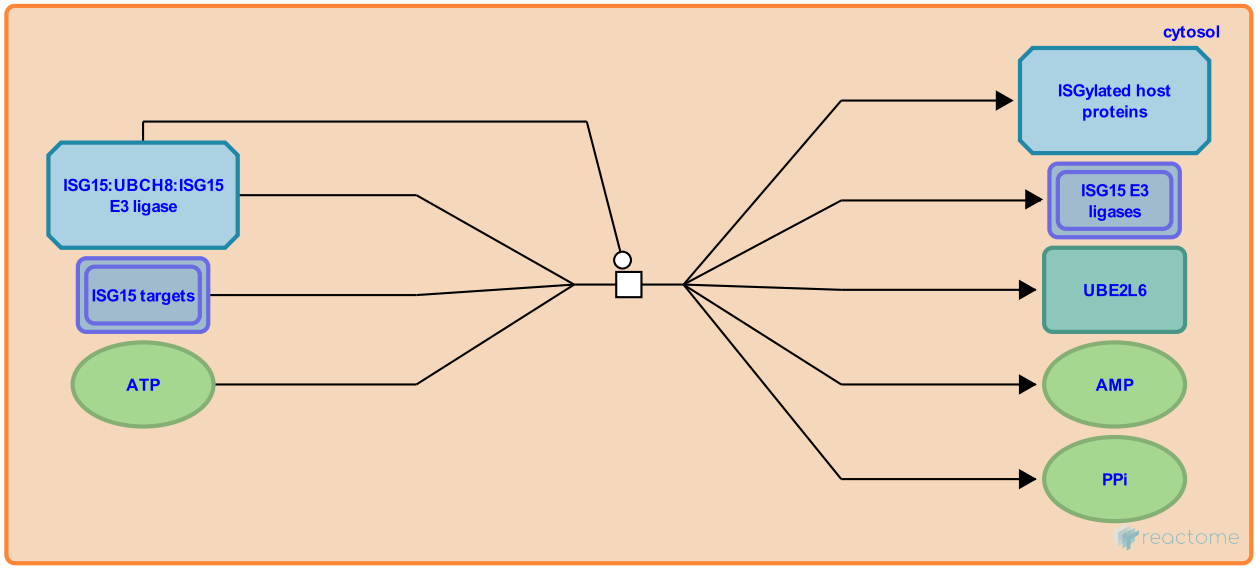
Stable identifier: R-HSA-1169406

Type: transition

Compartments: cytosol



Many host proteins are targets for ISGylation including constitutively expressed proteins involved in various cellular pathways such as immunity, RNA splicing, chromatin remodeling/polymerase II transcription, stress responses and translation. Many ISG15 target proteins are IFN alpha/beta-induced antiviral proteins such as PKR, MxA, IRF3, and RIG-I, also included are several key regulators of signal transduction such as PLC gamma1, JAK1, STAT1 and ERK1. The contribution of most of these modified proteins to antiviral activity is unclear because the fate of the vast majority of ISGylated target proteins is unknown.

Literature references

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Editions

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