

V-

ATPase:Ragulator:RRAGA,B:GTP:RRAGC,D

:GDP:SLC38A9:Arginine dissociates yield-

ing v-

ATPase:Ragulator:RRAGA,B:GTP:RRAGC,D

:GDP and SLC38A9:Arginine

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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

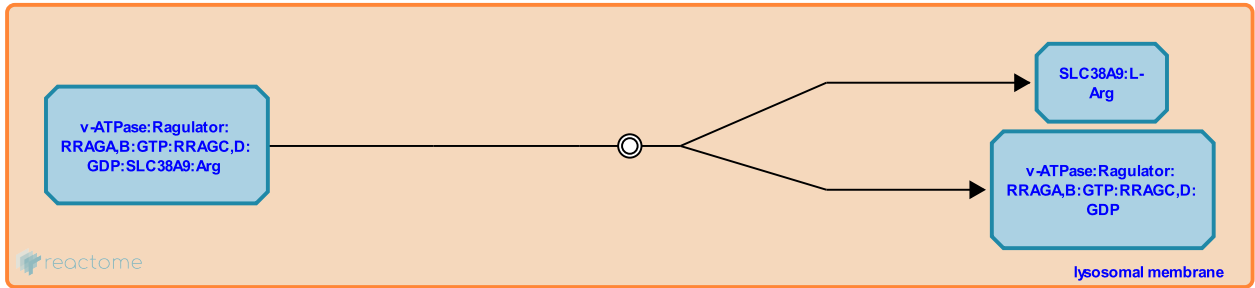
This document contains 1 reaction ([see Table of Contents](#))

v-ATPase:Ragulator:RRAGA,B:GTP:RRAGC,D:GDP:SLC38A9:Arginine dissociates yielding v-ATPase:Ragulator:RRAGA,B:GTP:RRAGC,D:GDP and SLC38A9:Arginine ↗

Stable identifier: R-HSA-9640168

Type: dissociation

Compartment: lysosomal membrane



RRAGA:GTP (RagA:GTP) binds poorly to SLC38A9, therefore SLC38A9 is believed to dissociate from RRAGA:GTP after RRAGA exchanges GDP for GTP (Shen and Sabatini 2018). In this way one molecule of SLC38A9 can enhance the exchange of GDP for GTP for many molecules of RRAGA (Shen and Sabatini 2018).

Literature references

Sabatini, DM., Shen, K. (2018). Ragulator and SLC38A9 activate the Rag GTPases through noncanonical GEF mechanisms. *Proc. Natl. Acad. Sci. U.S.A.*, 115, 9545-9550. ↗

Editions

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