GPVI-mediated activation cascade

This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the Reactome Textbook.

30/04/2024

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. ↗

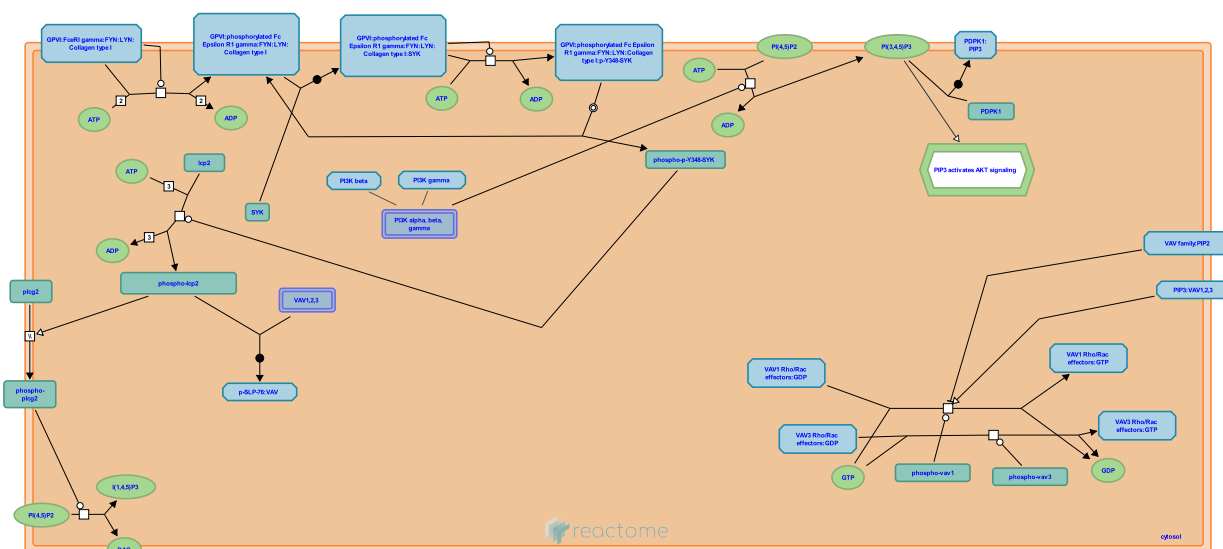Reactome database release: 88

This document contains 1 pathway and 12 reactions (see Table of Contents)

GPVI-mediated activation cascade ↗

Stable identifier: R-XTR-114604

Inferred from: GPVI-mediated activation cascade (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

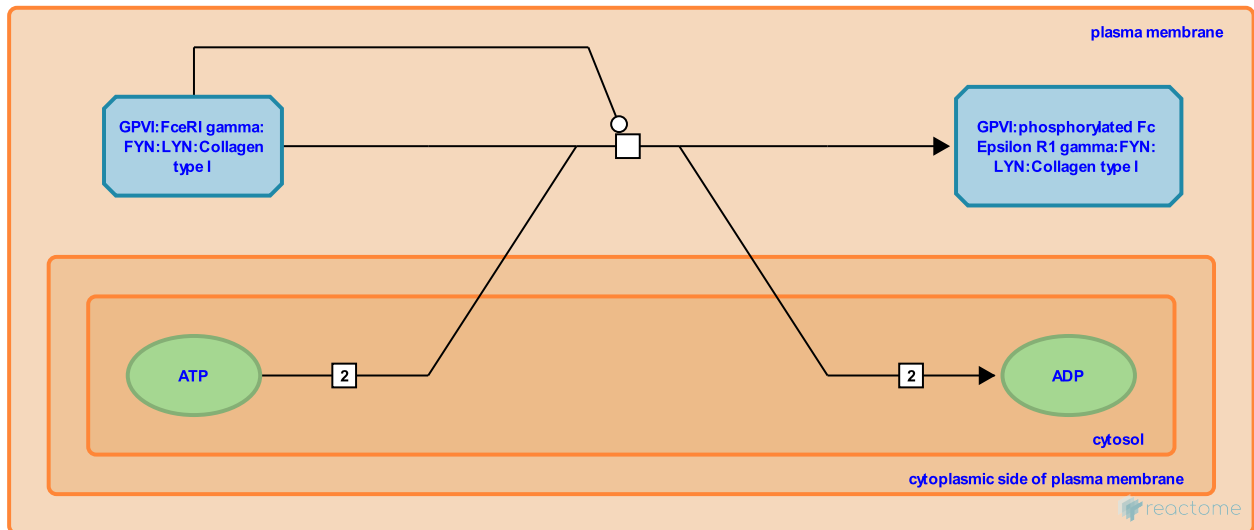## Fyn/Lyn-mediated phosphorylation of FcR1 gamma ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-114600

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: Fyn/Lyn-mediated phosphorylation of FcR1 gamma (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Followed by: Binding of Syk tyrosine kinase
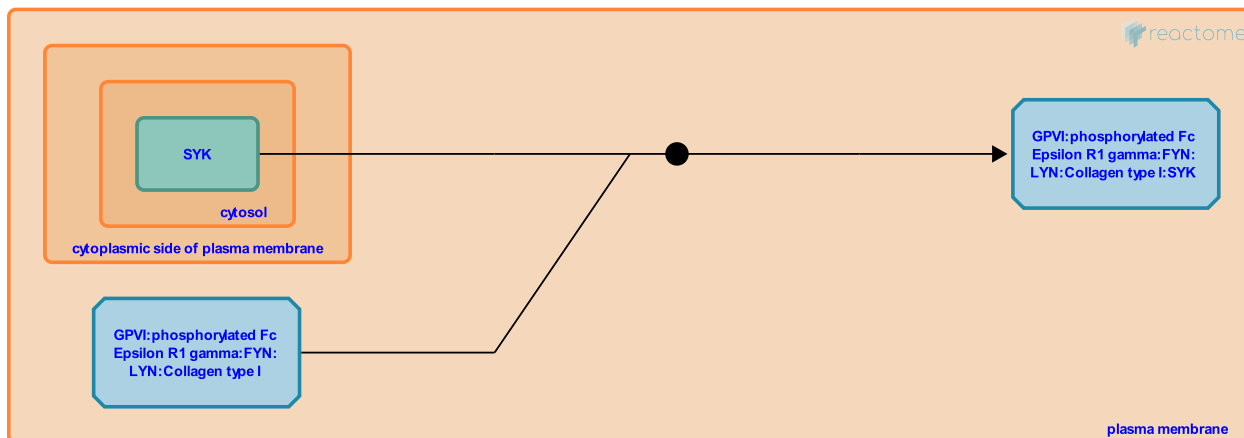
Binding of Syk tyrosine kinase ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-139842

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: Binding of Syk tyrosine kinase (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Fyn/Lyn-mediated phosphorylation of FcR1 gamma

Followed by: SYK autophosphorylates
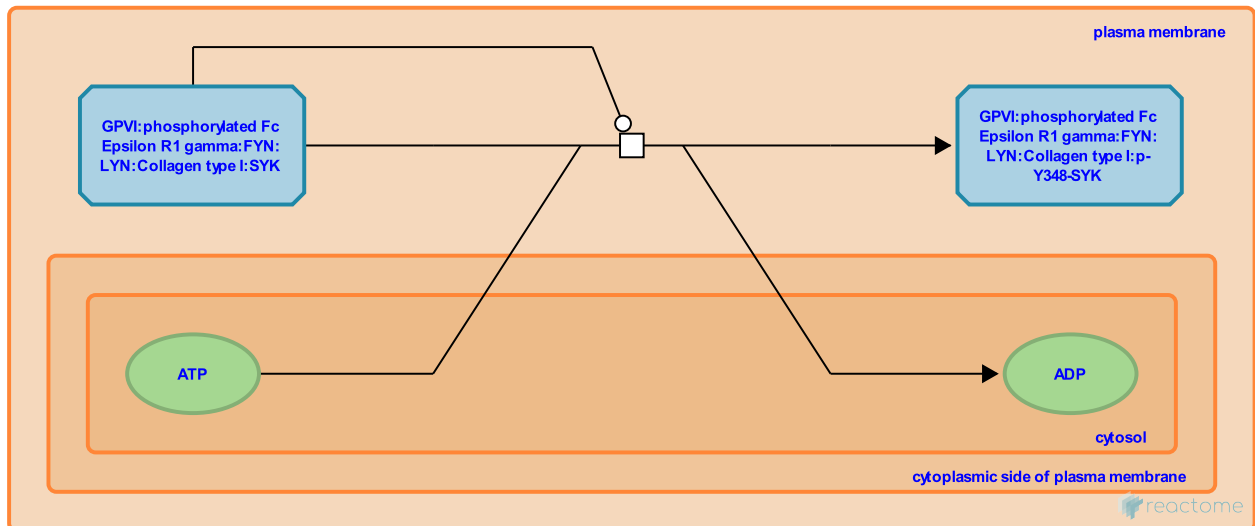
SYK autophosphorylates ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-453200

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: SYK autophosphorylates (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Binding of Syk tyrosine kinase

Followed by: p-Y348-SYK dissociates
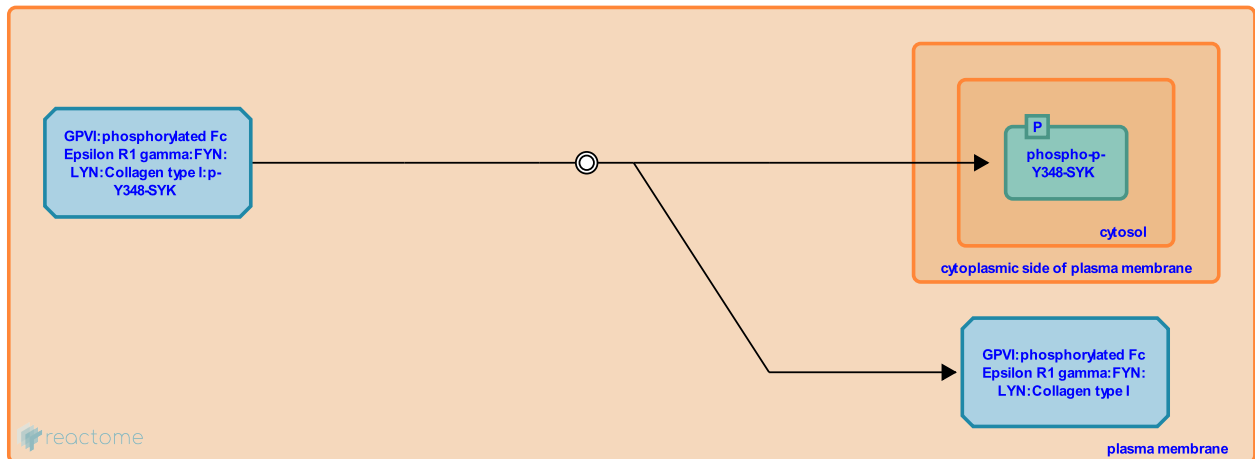
p-Y348-SYK dissociates ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-453183

Type: dissociation

Compartments: plasma membrane, cytosol

Inferred from: p-Y348-SYK dissociates (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: SYK autophosphorylates

Followed by: Syk activation leads to SLP-76 activation
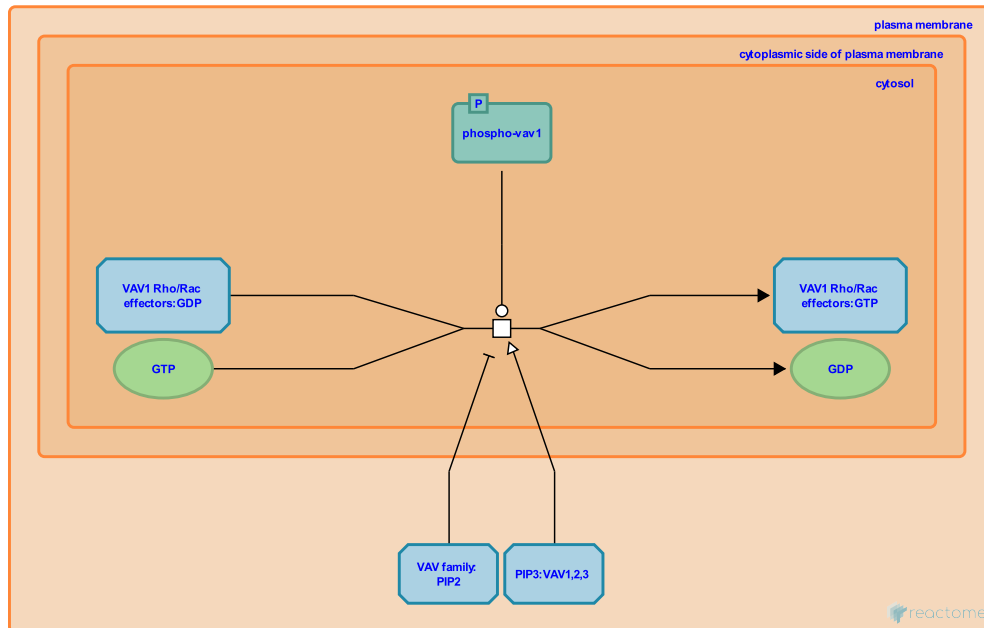
VAV1 is a GEF for Rho/Rac family GTPases ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-442273

Type: transition

Compartments: cytosol

Inferred from: VAV1 is a GEF for Rho/Rac family GTPases (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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VAV3 is a GEF for Rho/Rac family kinases ↗
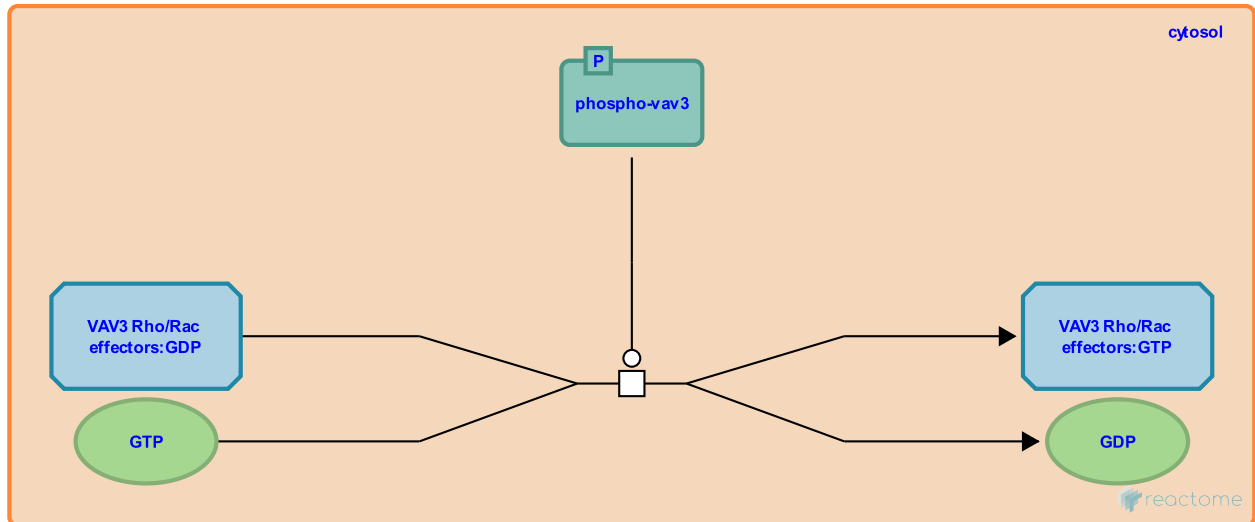
Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-442314

Type: transition

Compartments: cytosol

Inferred from: VAV3 is a GEF for Rho/Rac family kinases (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp
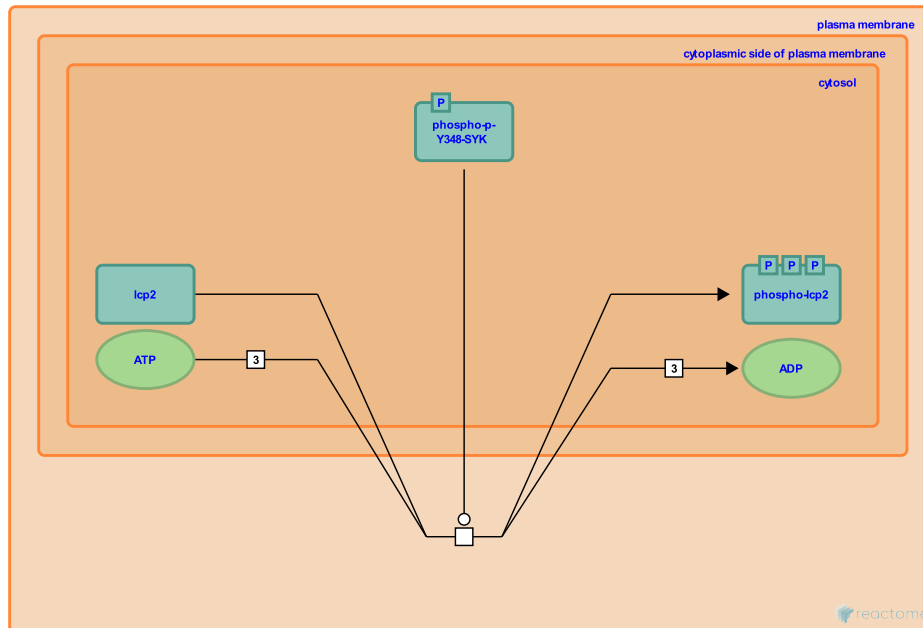
Syk activation leads to SLP-76 activation ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-429449

Type: transition

Compartments: plasma membrane

Inferred from: Syk activation leads to SLP-76 activation (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: p-Y348-SYK dissociates

Followed by: p-SLP-76 binds VAV, SLP-76 stimulates PLC gamma 2
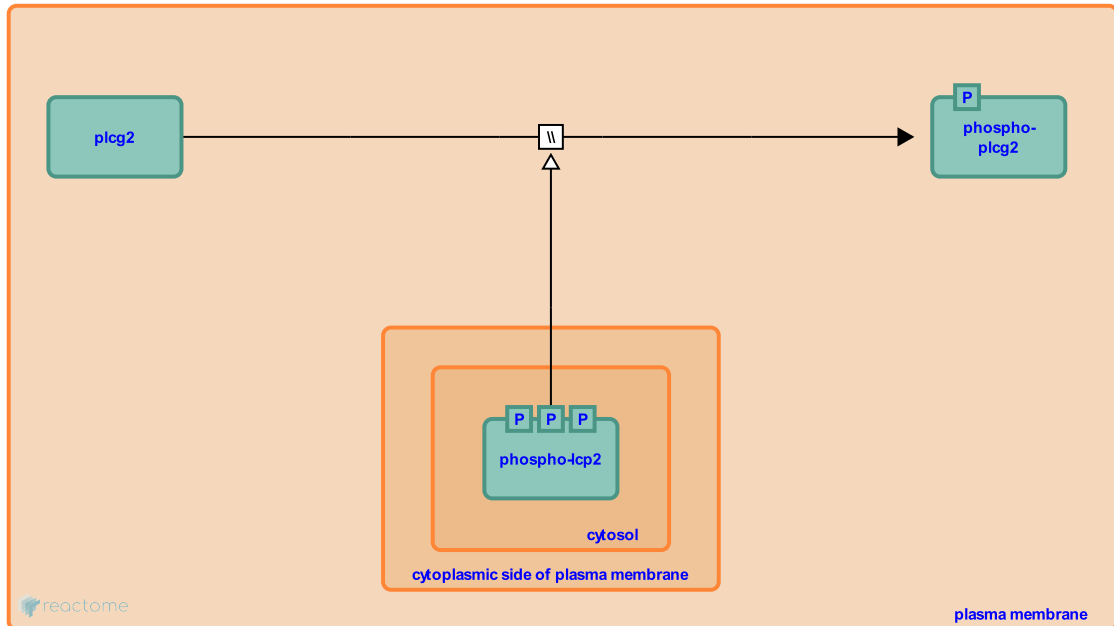
SLP-76 stimulates PLC gamma 2 ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-429497

Type: omitted

Compartments: plasma membrane

Inferred from: SLP-76 stimulates PLC gamma 2 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Syk activation leads to SLP-76 activation

Followed by: PLC gamma 2-mediated PIP2 hydrolysis
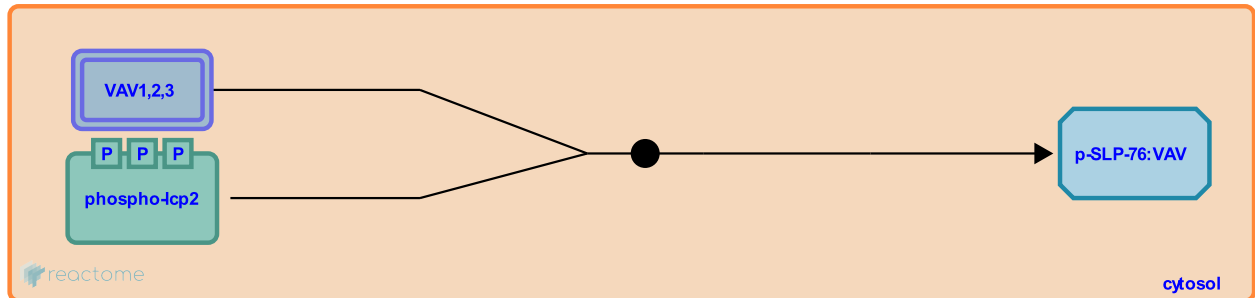
p-SLP-76 binds VAV ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-430158

Type: binding

Compartments: cytosol

Inferred from: p-SLP-76 binds VAV (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Syk activation leads to SLP-76 activation

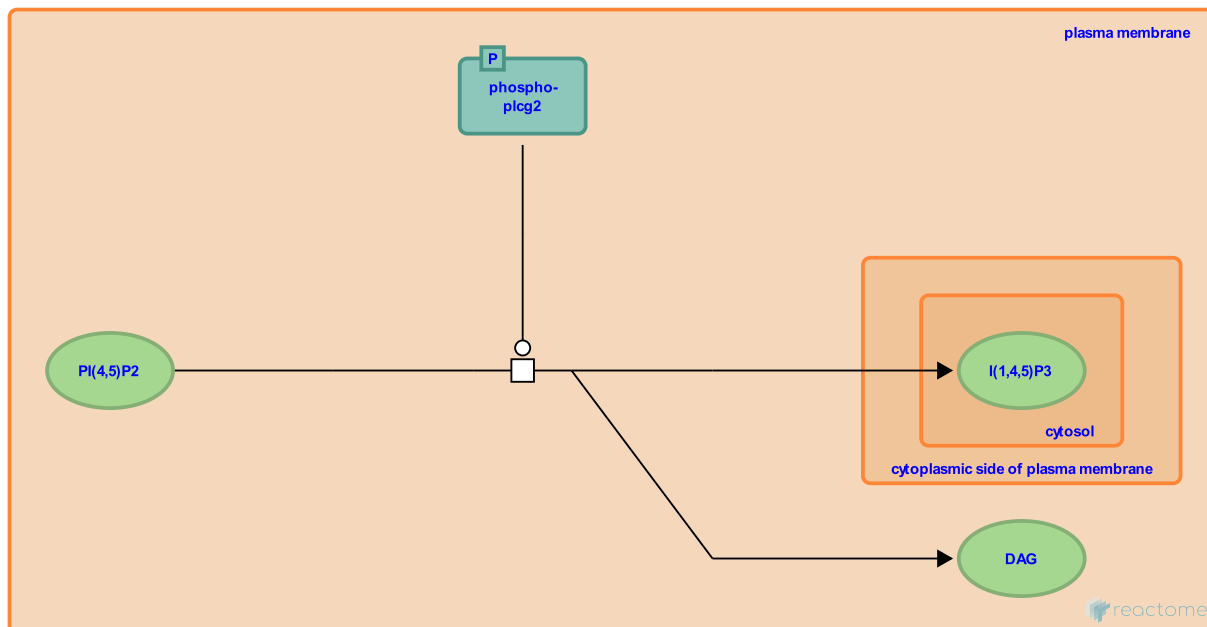# PLC gamma 2-mediated PIP2 hydrolysis ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-114689

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: PLC gamma 2-mediated PIP2 hydrolysis (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: SLP-76 stimulates PLC gamma 2

PI3K alpha, beta, gamma convert PIP2 to PIP3 ↗
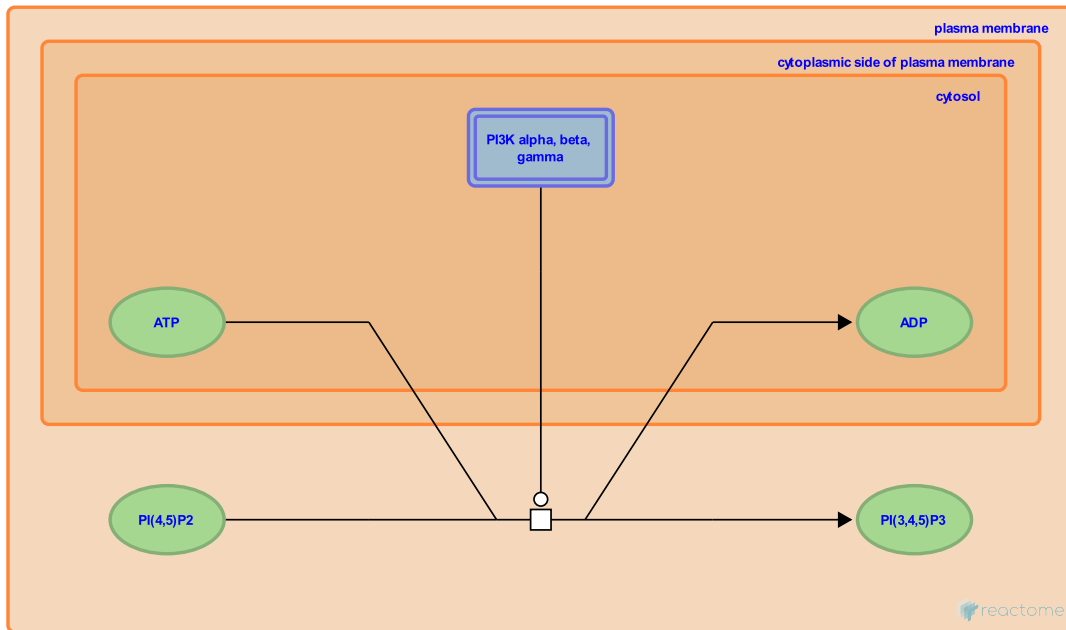
Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-437162

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: PI3K alpha, beta, gamma convert PIP2 to PIP3 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Followed by: PIP3 recruits PDPK1 to the membrane
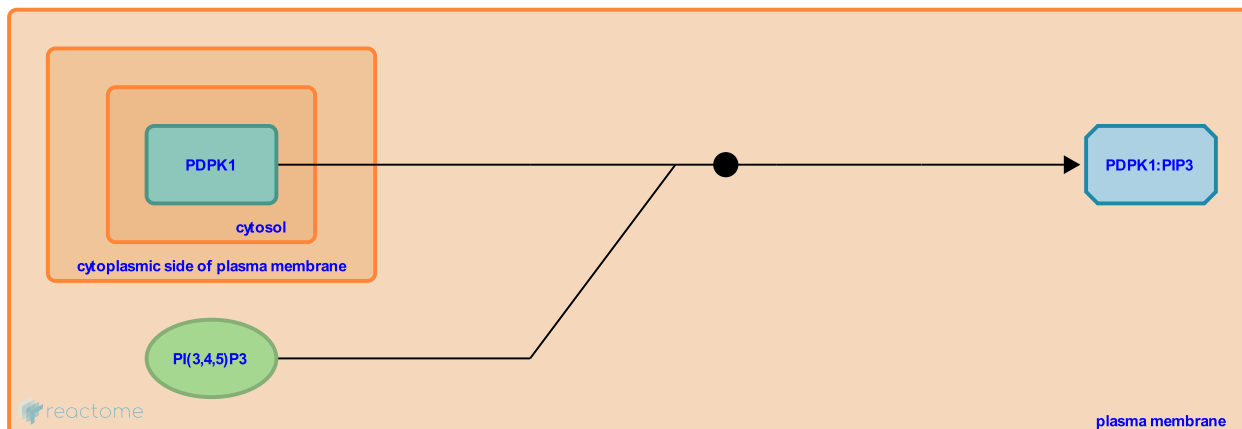
PIP3 recruits PDPK1 to the membrane ↗

Location: GPVI-mediated activation cascade

Stable identifier: R-XTR-2316429

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: PIP3 recruits PDPK1 to the membrane (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: PI3K alpha, beta, gamma convert PIP2 to PIP3

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