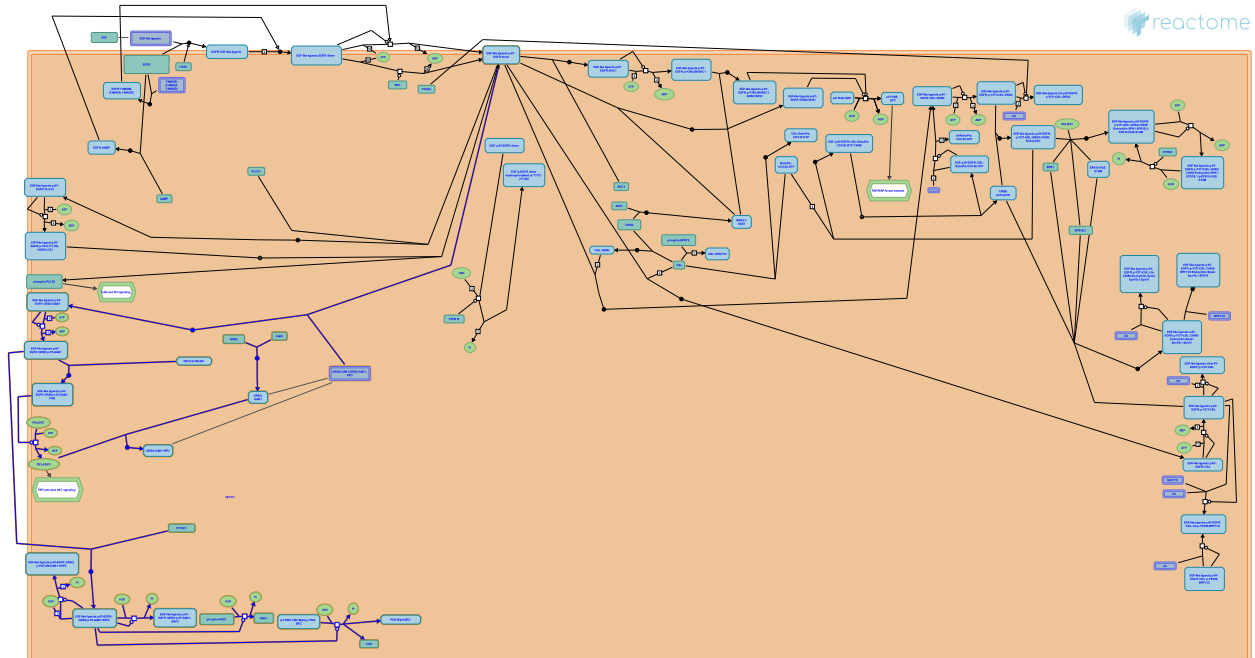


# GAB1 signalosome



European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

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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](https://reactome.org/textbook/).

03/05/2024

## 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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

## Literature references

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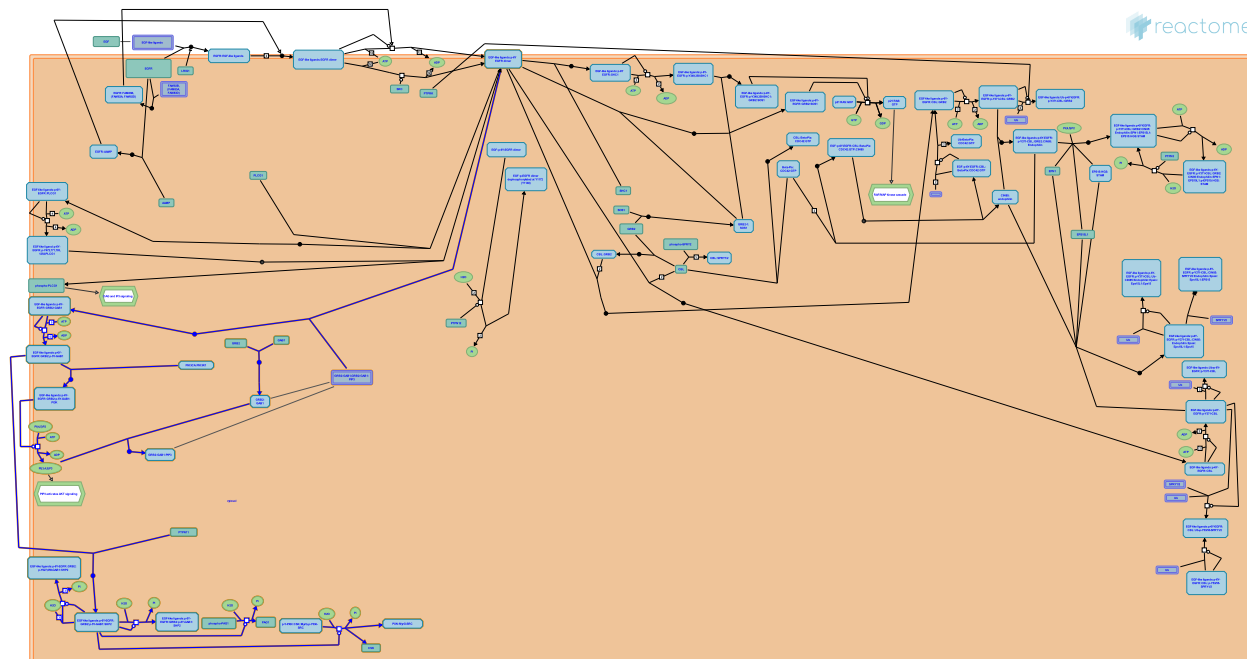
Reactome database release: 88

This document contains 1 pathway and 11 reactions ([see Table of Contents](#))

## GAB1 signalosome ↗

**Stable identifier:** R-CFA-180292

**Inferred from:** GAB1 signalosome (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>

## Binding of GRB2 to GAB1 [↗](#)

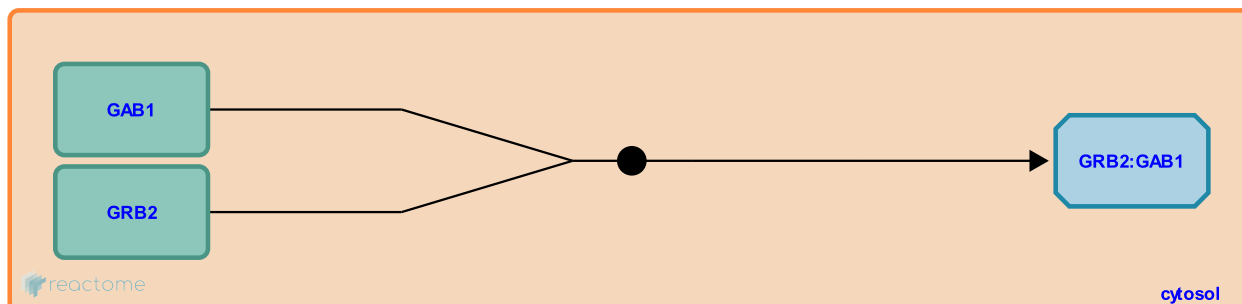
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177920

**Type:** binding

**Compartments:** cytosol

**Inferred from:** [Binding of GRB2 to GAB1 \(Homo sapiens\)](#)



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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**Followed by:** [GRB2:GAB1 binds to phosphorylated EGFR](#)

## GRB2:GAB1 binds to phosphorylated EGFR ↗

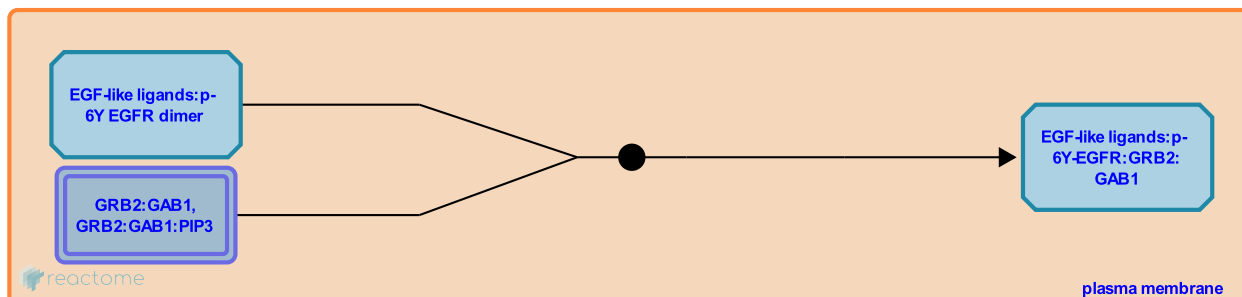
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177941

**Type:** binding

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** [GRB2:GAB1 binds to phosphorylated EGFR \(Homo sapiens\)](#)



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:** [GAB1 binds phosphatidylinositol-3,4,5-trisphosphate](#), [Binding of GRB2 to GAB1](#)

**Followed by:** [GAB1 phosphorylation by EGFR kinase](#)

## GAB1 binds phosphatidylinositol-3,4,5-trisphosphate ↗

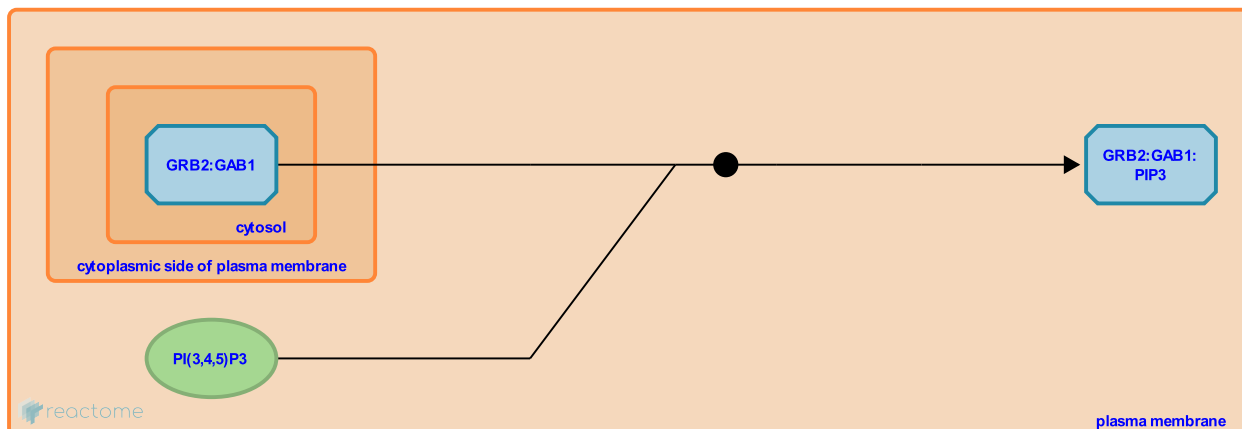
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-179467

**Type:** binding

**Compartments:** plasma membrane, cytosol

**Inferred from:** [GAB1 binds phosphatidylinositol-3,4,5-trisphosphate \(Homo sapiens\)](#)



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 converts phosphatidylinositol-4,5-bisphosphate \(PIP2\) to phosphatidylinositol-3,4,5-trisphosphate \(PIP3\)](#)

**Followed by:** [GRB2:GAB1 binds to phosphorylated EGFR](#)

## GAB1 phosphorylation by EGFR kinase ↗

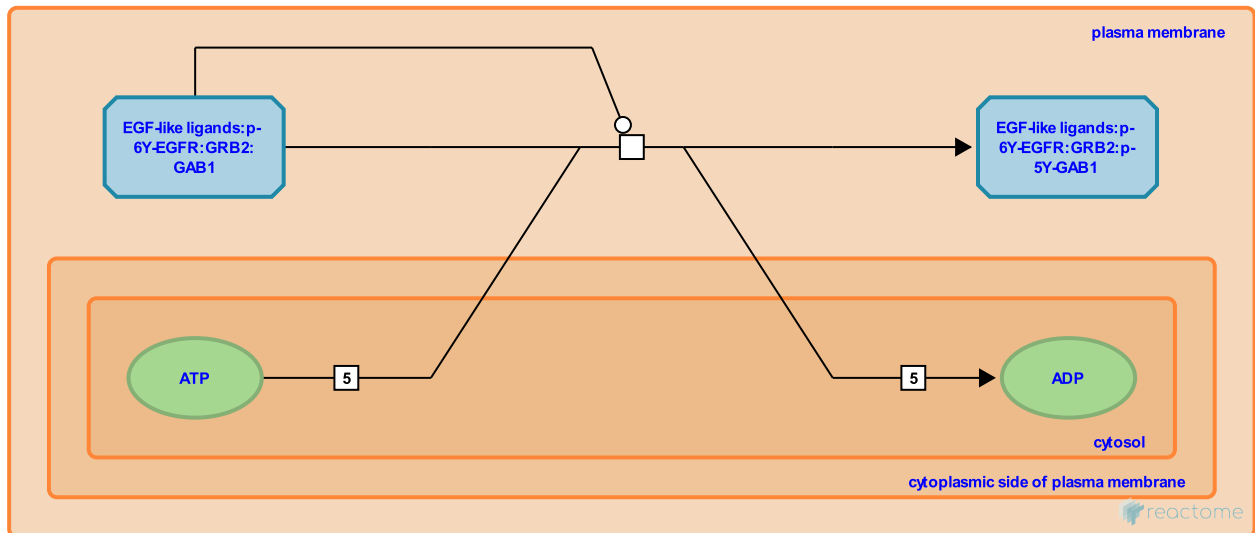
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177930

**Type:** transition

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** [GAB1 phosphorylation by EGFR 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:** [GRB2:GAB1 binds to phosphorylated EGFR](#)

**Followed by:** [Activation of SHP2 through the binding to phospho-Gab1](#), [PI3K binds to EGF:EGFR:GRB2:GAB1](#)

## PI3K binds to EGF:EGFR:GRB2:GAB1 ↗

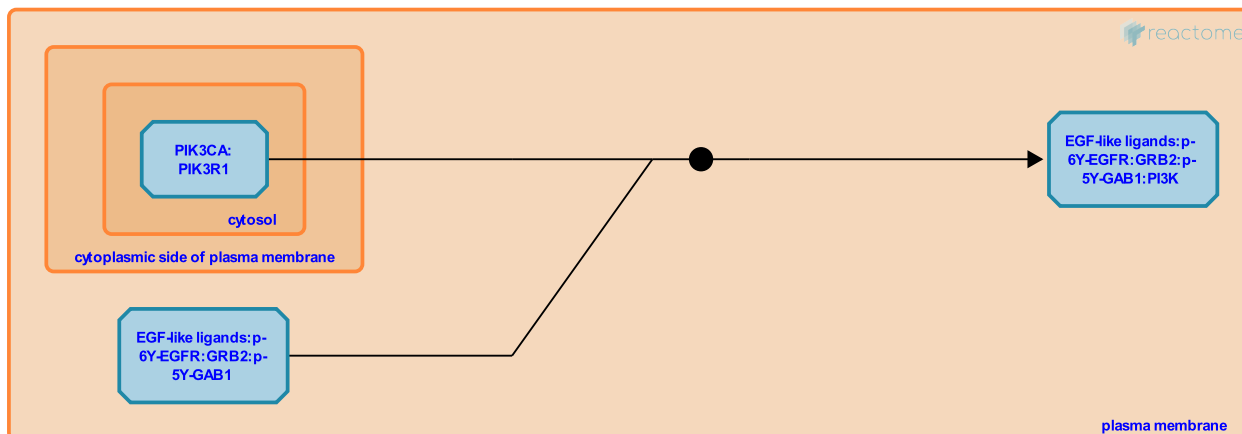
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177927

**Type:** binding

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** [PI3K binds to EGF:EGFR:GRB2:GAB1 \(Homo sapiens\)](#)



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:** [GAB1 phosphorylation by EGFR kinase](#)

**Followed by:** [PI3K converts phosphatidylinositol-4,5-bisphosphate \(PIP2\) to phosphatidylinositol-3,4,5-trisphosphate \(PIP3\)](#)



## PI3K converts phosphatidylinositol-4,5-bisphosphate (PIP2) to phosphatidylinositol-3,4,5-trisphosphate (PIP3) ↗

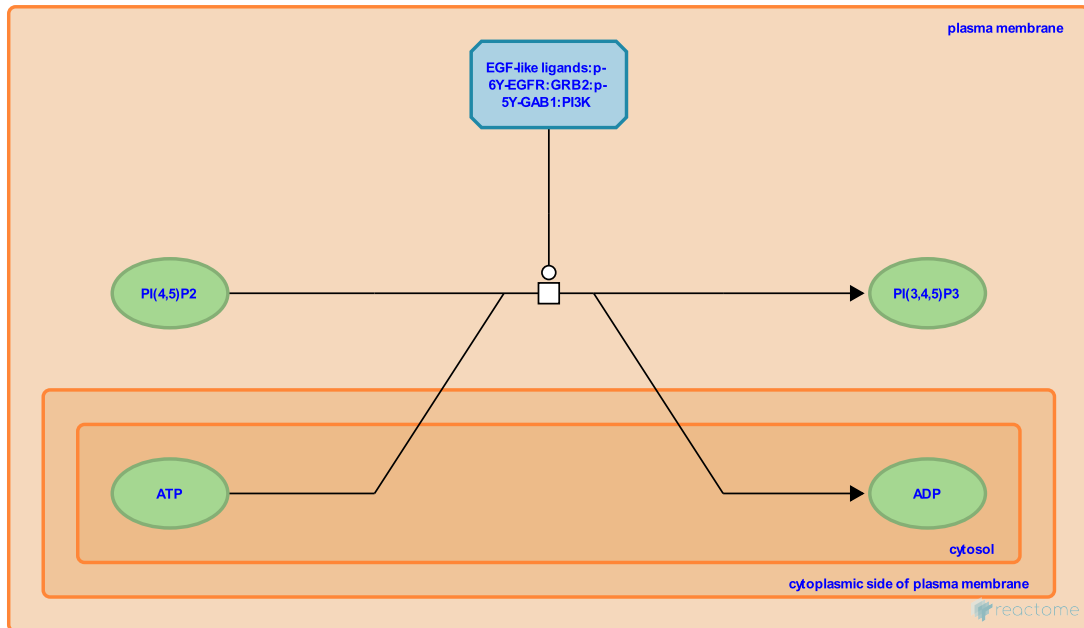
**Location:** GAB1 signalosome

**Stable identifier:** R-CFA-177939

**Type:** transition

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** PI3K converts phosphatidylinositol-4,5-bisphosphate (PIP2) to phosphatidylinositol-3,4,5-trisphosphate (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.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

**Preceded by:** PI3K binds to EGF:EGFR:GRB2:GAB1

**Followed by:** GAB1 binds phosphatidylinositol-3,4,5-trisphosphate

## Activation of SHP2 through the binding to phospho-Gab1 ↗

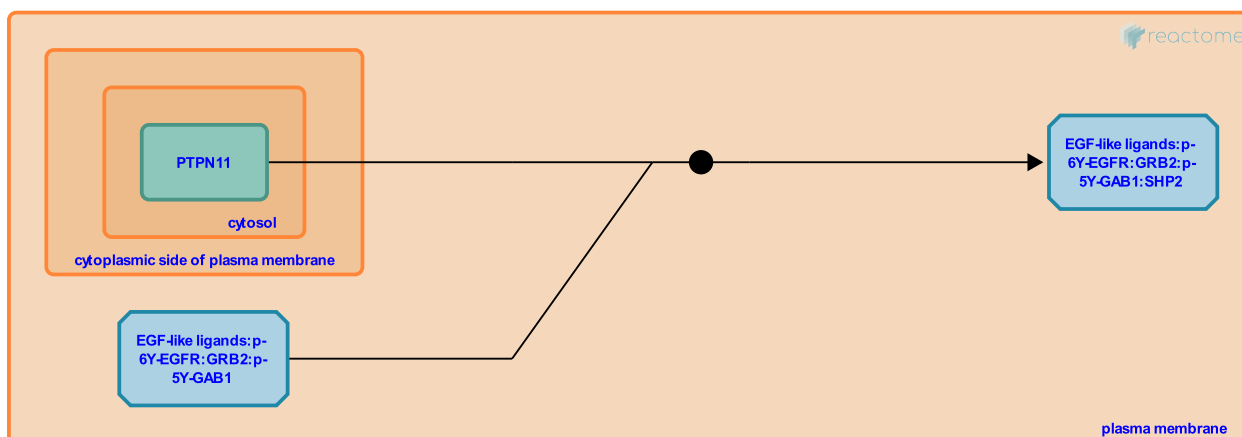
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177944

**Type:** binding

**Compartments:** plasma membrane, cytosol

**Inferred from:** [Activation of SHP2 through the binding to phospho-Gab1 \(Homo sapiens\)](#)



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:** [GAB1 phosphorylation by EGFR kinase](#)

**Followed by:** [SHP2 dephosphorylates Tyr 992 on EGFR](#), [Dephosphorylation of Gab1 by SHP2](#), [Dephosphorylation of PAG by SHP2](#)

## Dephosphorylation of Gab1 by SHP2 ↗

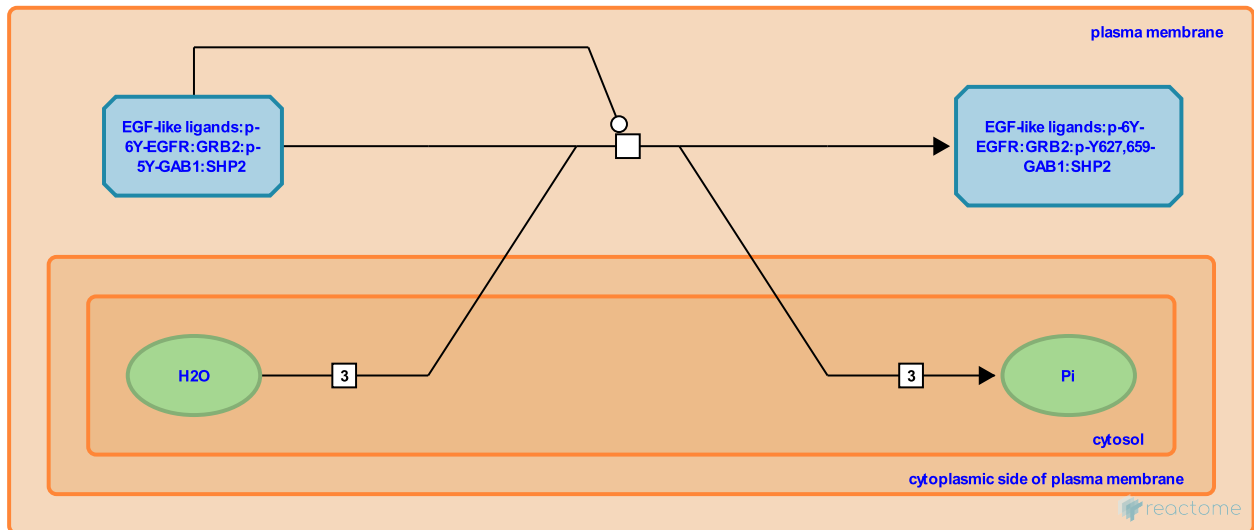
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177924

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** [Dephosphorylation of Gab1 by SHP2 \(Homo sapiens\)](#)



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.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

**Preceded by:** [Activation of SHP2 through the binding to phospho-Gab1](#)

## SHP2 dephosphorylates Tyr 992 on EGFR ↗

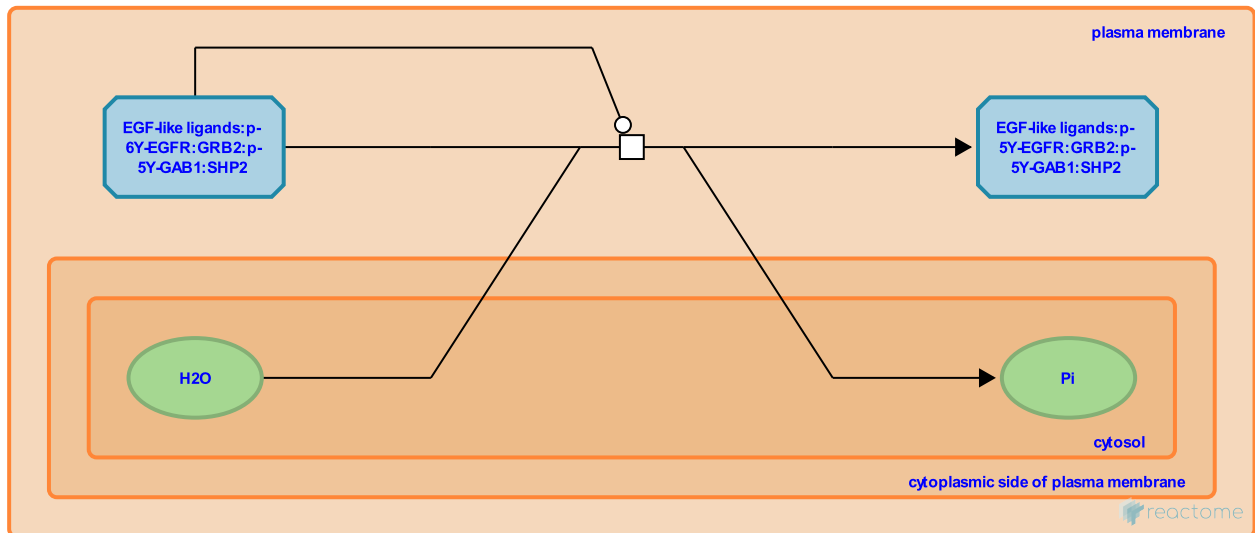
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177935

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** [SHP2 dephosphorylates Tyr 992 on EGFR \(Homo sapiens\)](#)



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:** [Activation of SHP2 through the binding to phospho-Gab1](#)

## Dephosphorylation of PAG by SHP2 ↗

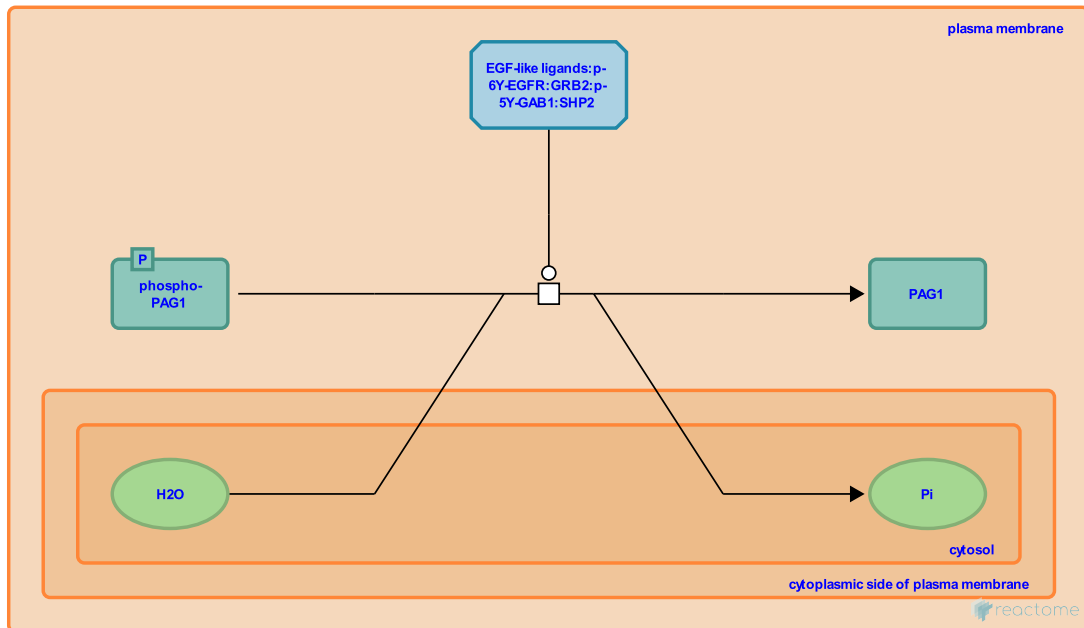
**Location:** [GAB1 signalosome](#)

**Stable identifier:** R-CFA-177926

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** [Dephosphorylation of PAG by SHP2 \(Homo sapiens\)](#)



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:** [Activation of SHP2 through the binding to phospho-Gab1](#)

**Followed by:** [Sustained activation of SRC kinase by SHP2](#)

## Sustained activation of SRC kinase by SHP2 ↗

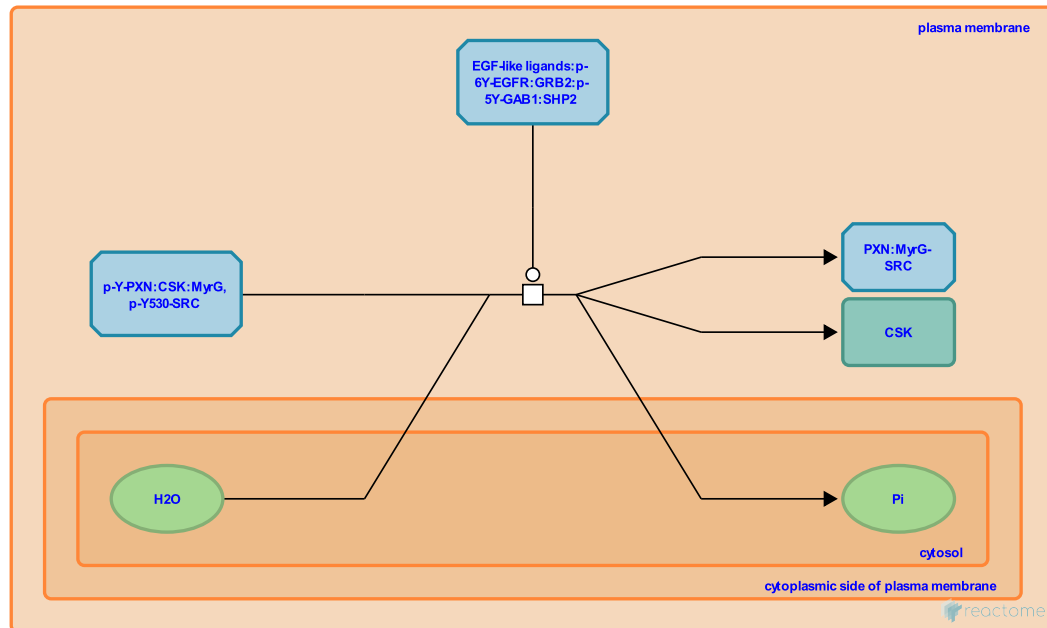
**Location:** GAB1 signalosome

**Stable identifier:** R-CFA-177923

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** Sustained activation of SRC kinase by SHP2 (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.](https://www.reactome.org) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

**Preceded by:** Dephosphorylation of PAG by SHP2

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