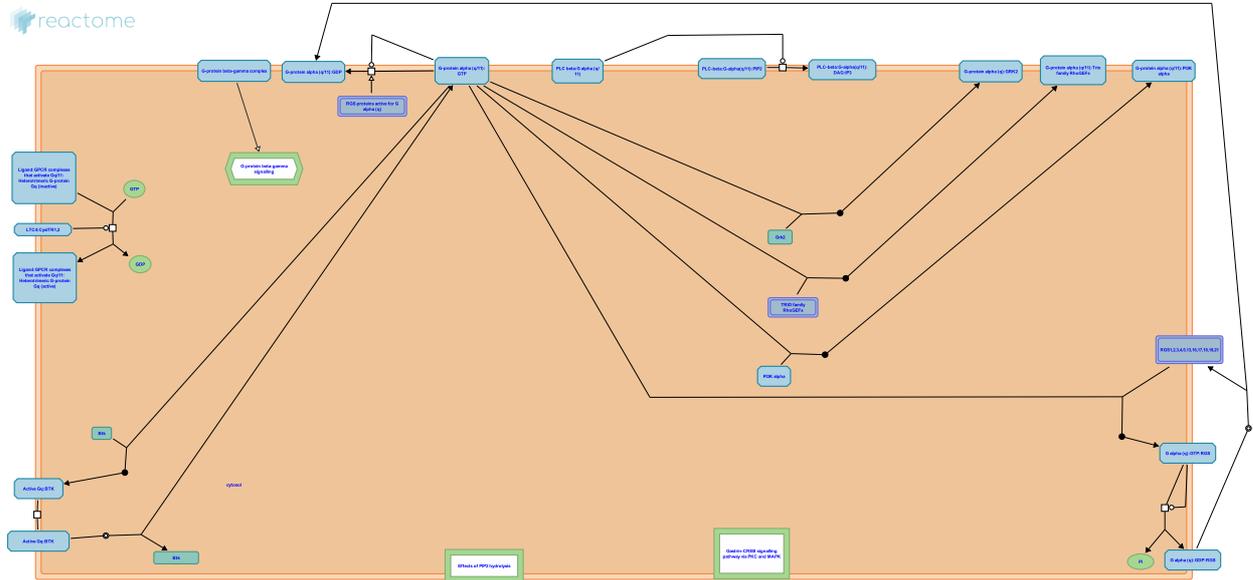


G alpha (q) signalling events



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

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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.

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: 75

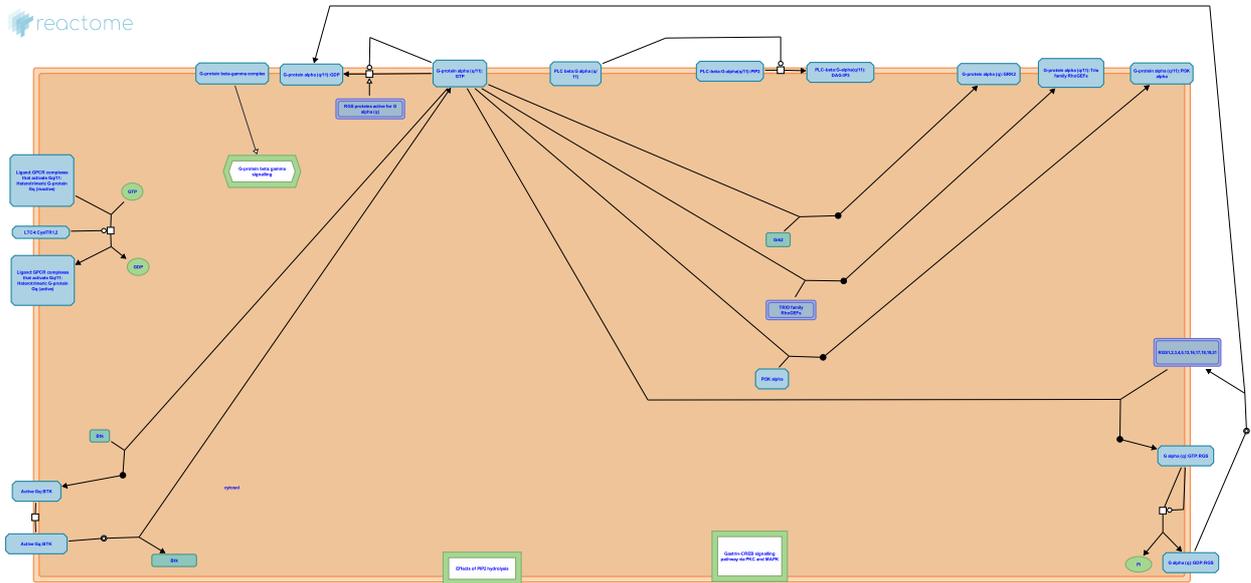
This document contains 3 pathways and 12 reactions ([see Table of Contents](#))

G alpha (q) signalling events ↗

Stable identifier: R-RNO-416476

Compartments: plasma membrane

Inferred from: G alpha (q) signalling events (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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Liganded Gq/11-activating GPCRs act as GEFs for Gq/11 ↗

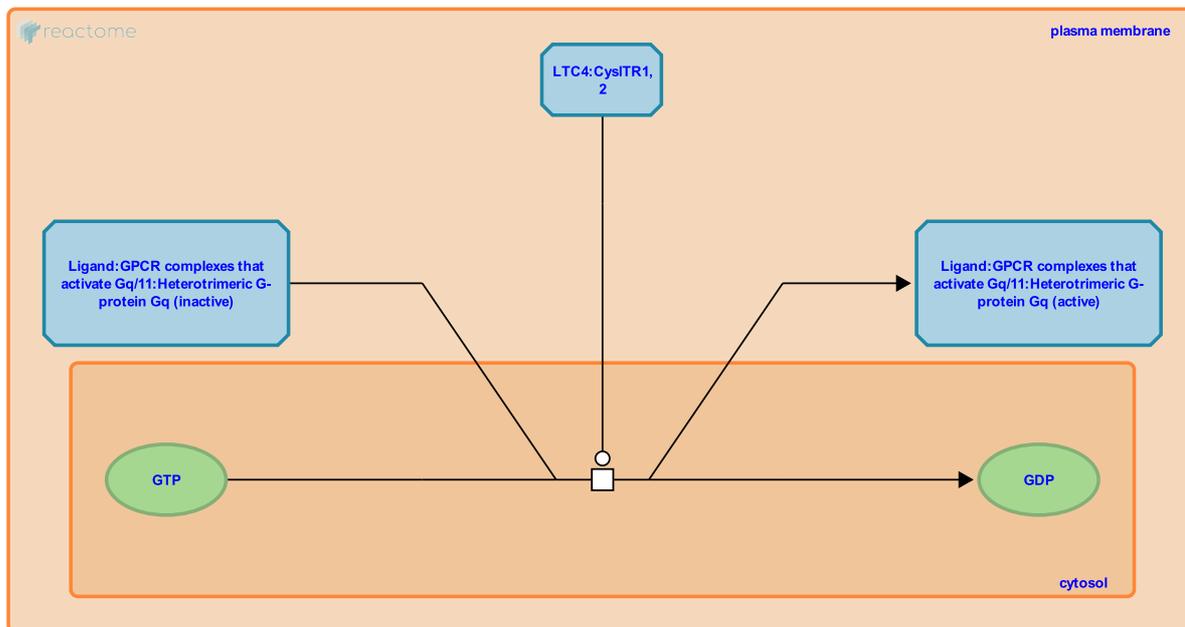
Location: G alpha (q) signalling events

Stable identifier: R-RNO-379048

Type: transition

Compartments: cytosol, plasma membrane

Inferred from: Liganded Gq/11-activating GPCRs act as GEFs for Gq/11 (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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

GRK2 sequesters activated Gq ↗

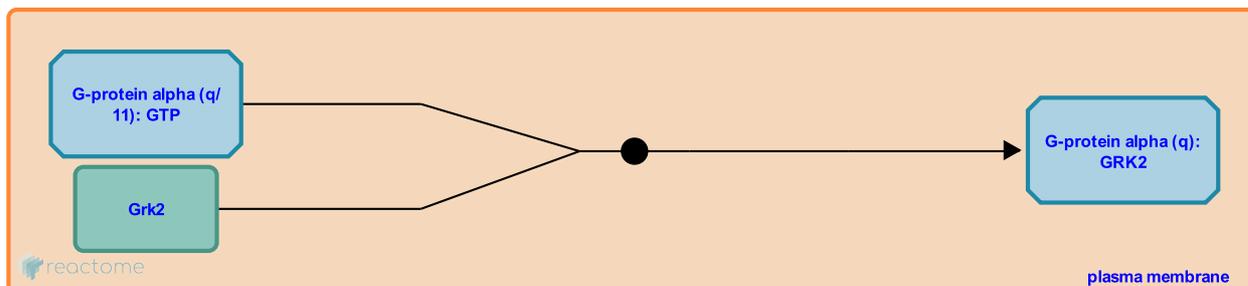
Location: G alpha (q) signalling events

Stable identifier: R-RNO-416516

Type: binding

Compartments: plasma membrane

Inferred from: GRK2 sequesters activated Gq (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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

G alpha (q) binds to Trio family RhoGEFs ↗

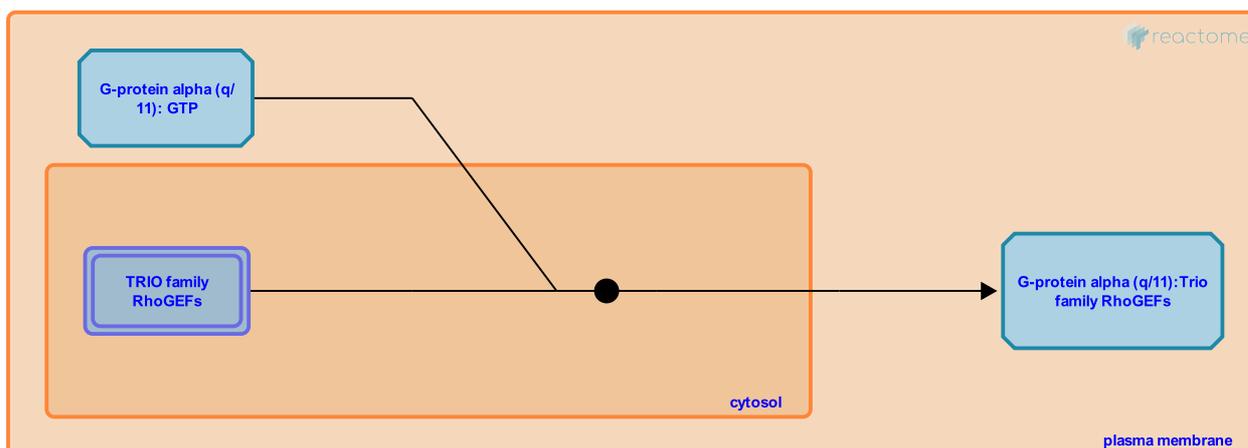
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-400586

Type: binding

Compartments: cytosol, plasma membrane

Inferred from: [G alpha \(q\) binds to Trio family RhoGEFs \(Homo sapiens\)](#)



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

G alpha (q) inhibits PI3K alpha ↗

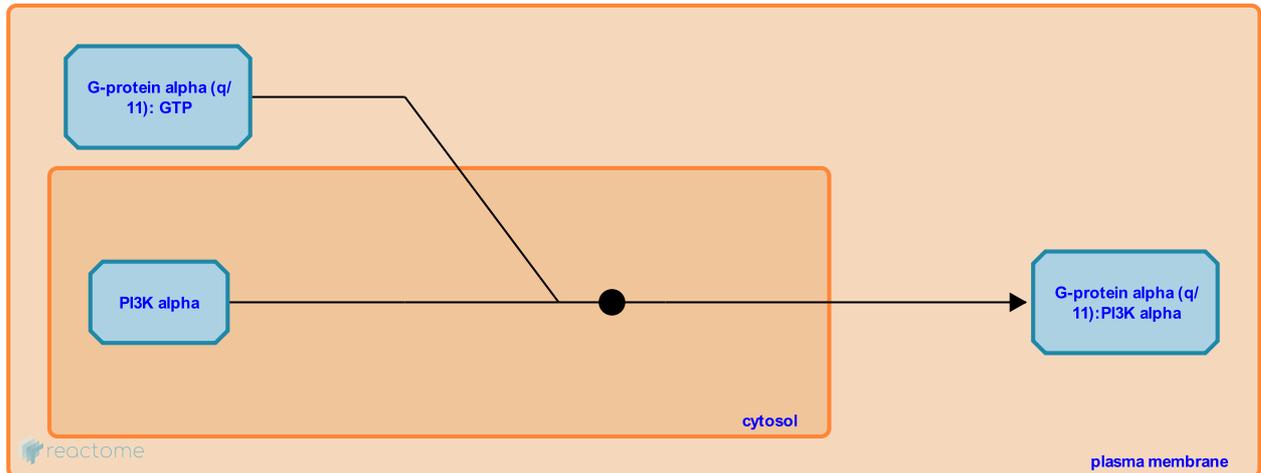
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-416358

Type: binding

Compartments: cytosol, plasma membrane

Inferred from: [G alpha \(q\) inhibits PI3K alpha \(Homo sapiens\)](#)



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

G alpha (q) auto-inactivates by hydrolysing GTP to GDP ↗

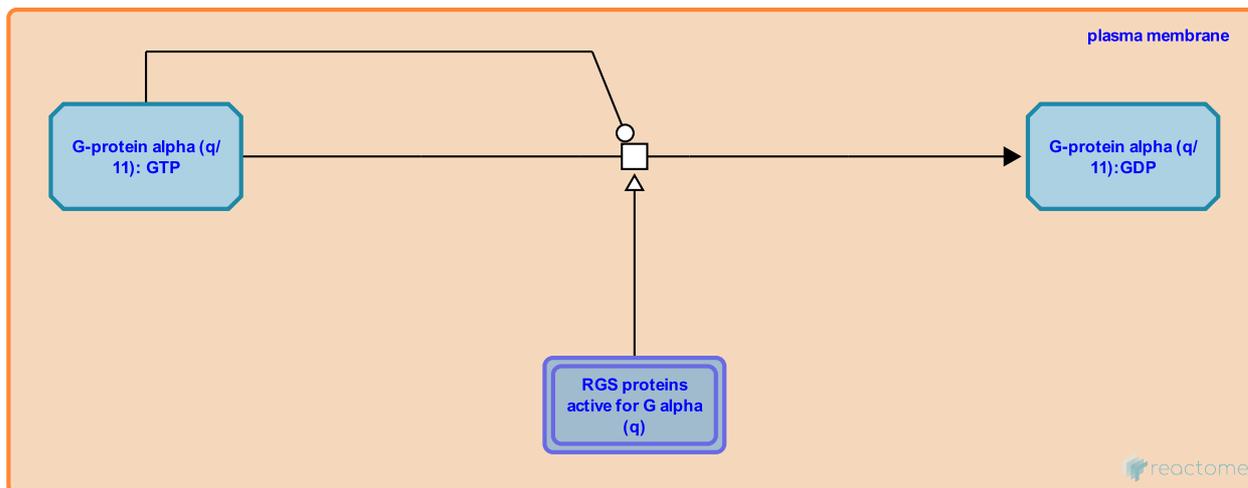
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-418582

Type: transition

Compartments: plasma membrane

Inferred from: [G alpha \(q\) auto-inactivates by hydrolysing GTP to GDP \(Homo sapiens\)](#)



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.

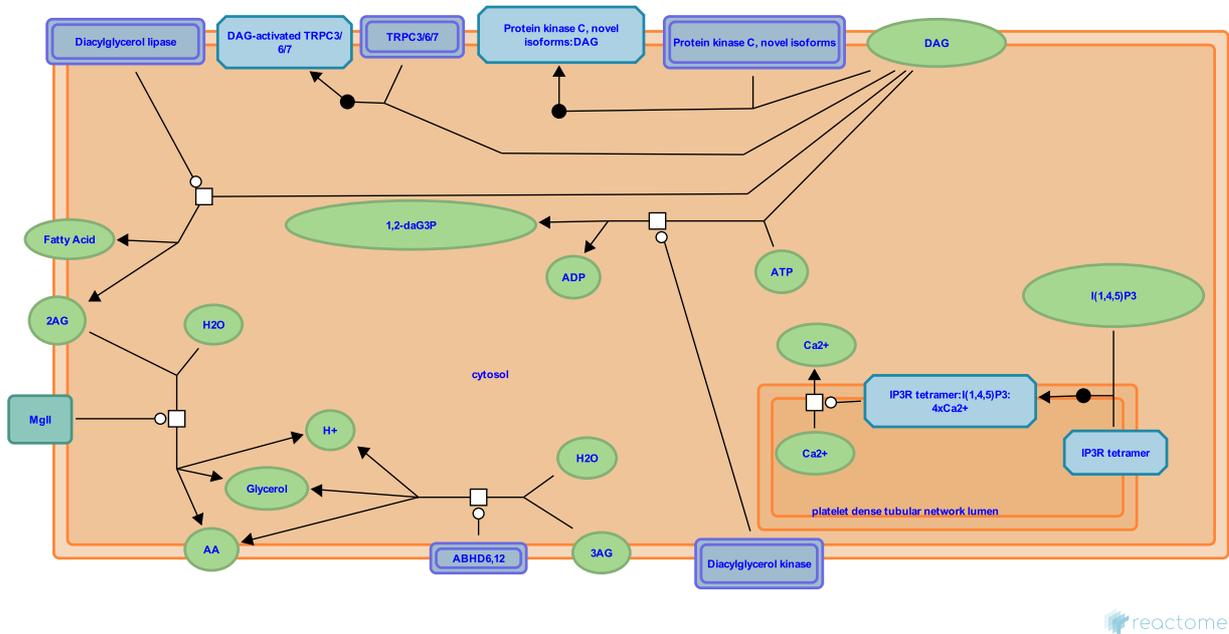
[More details and caveats of the event inference in Reactome.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Effects of PIP2 hydrolysis ↗

Location: G alpha (q) signalling events

Stable identifier: R-RNO-114508

Inferred from: Effects of 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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Active Gq binds BTK ↗

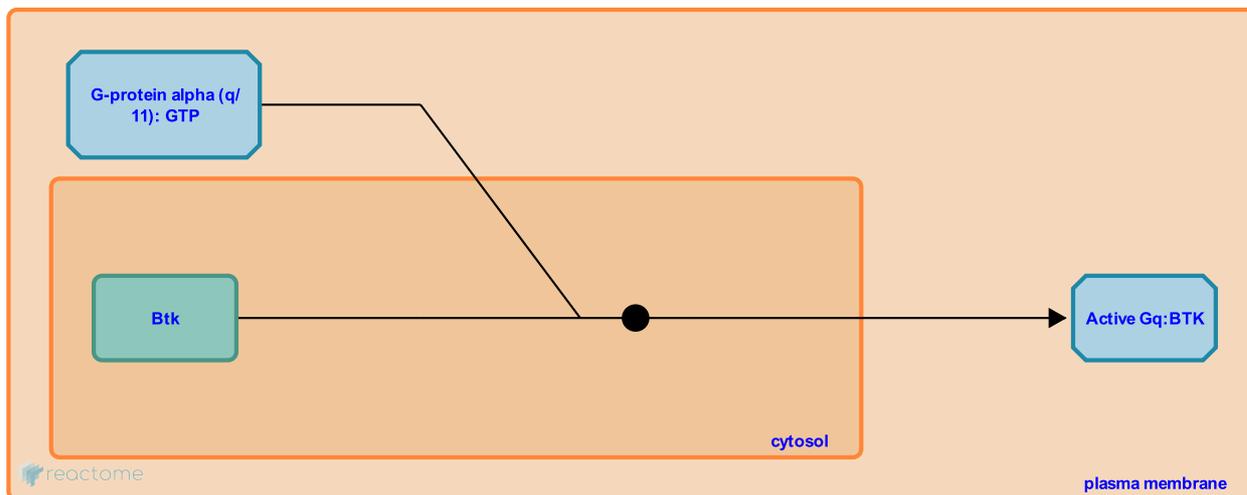
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-8964280

Type: binding

Compartments: cytosol, plasma membrane

Inferred from: [Active Gq binds BTK \(Homo sapiens\)](#)



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

Followed by: [BTK in active Gq-BTK complex is activated](#)

BTK in active Gq-BTK complex is activated ↗

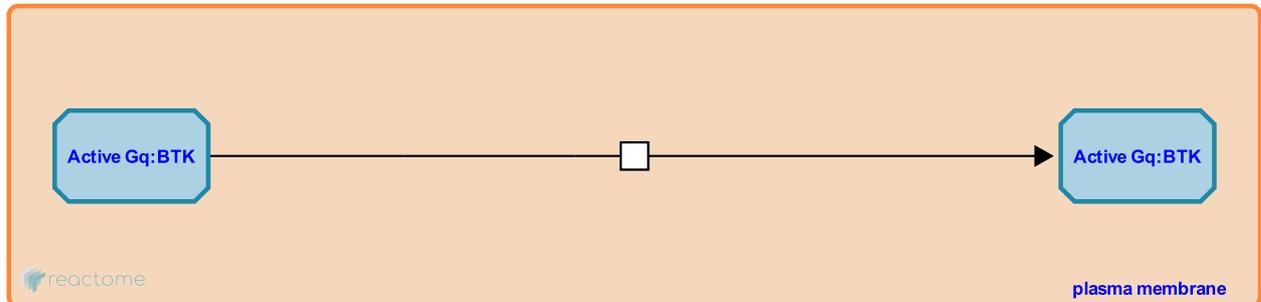
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-8964284

Type: transition

Compartments: plasma membrane

Inferred from: [BTK in active Gq-BTK complex is activated \(Homo sapiens\)](#)



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

Preceded by: [Active Gq binds BTK](#)

Followed by: [Gq-BTK complex dissociates to Active BTK and Gq](#)

Gq-BTK complex dissociates to Active BTK and Gq ↗

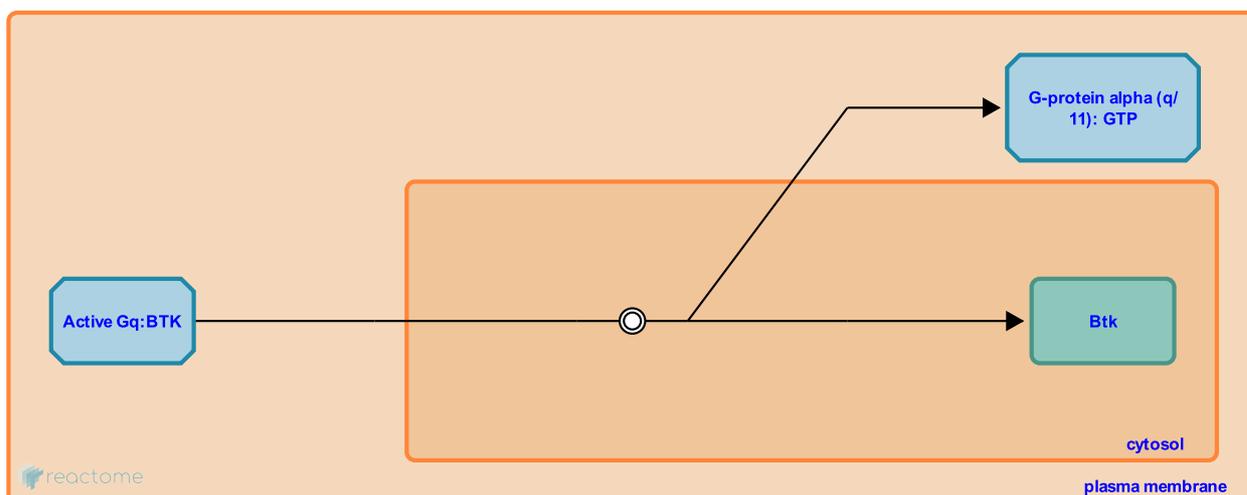
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-8964340

Type: dissociation

Compartments: cytosol

Inferred from: [Gq-BTK complex dissociates to Active BTK and Gq \(Homo sapiens\)](#)



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

Preceded by: [BTK in active Gq-BTK complex is activated](#)

Active G alpha (q) binds RGS proteins ↗

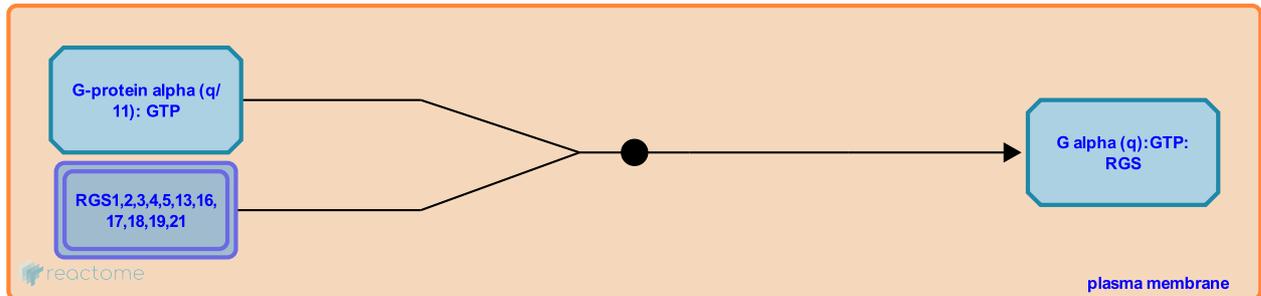
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-8982017

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [Active G alpha \(q\) binds RGS proteins \(Homo sapiens\)](#)



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

Followed by: [G alpha \(q\) in G \(q\):RGS complex is inactivated](#)

G alpha (q) in G (q):RGS complex is inactivated ↗

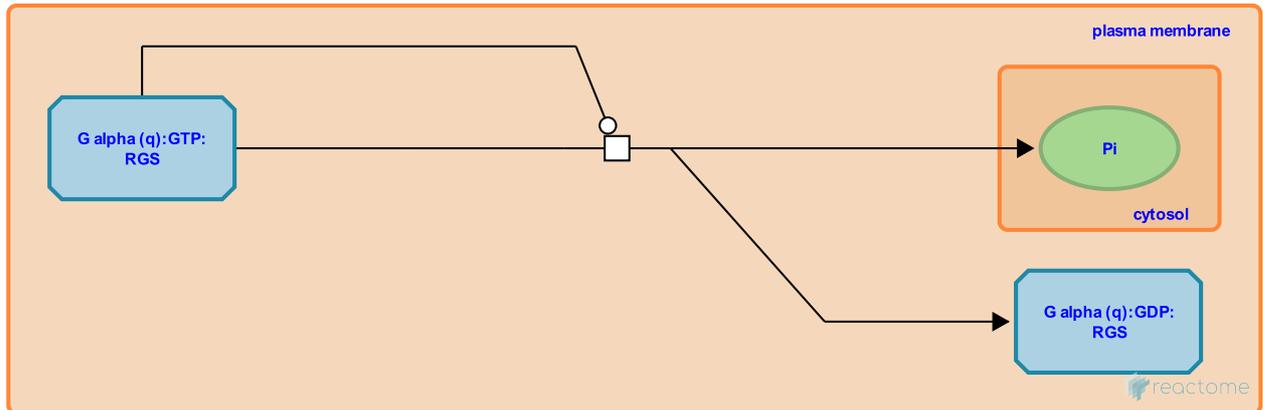
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-8982025

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [G alpha \(q\) in G \(q\):RGS complex is inactivated \(Homo sapiens\)](#)



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

Preceded by: [Active G alpha \(q\) binds RGS proteins](#)

Followed by: [G alpha \(q\):RGS dissociates to inactive G alpha \(q\)](#)

G alpha (q):RGS dissociates to inactive G alpha (q) ↗

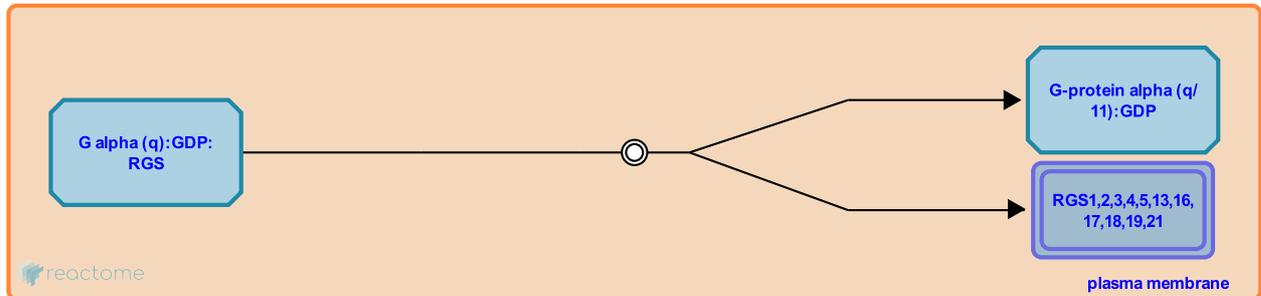
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-8982026

Type: dissociation

Compartments: plasma membrane

Inferred from: [G alpha \(q\):RGS dissociates to inactive G alpha \(q\) \(Homo sapiens\)](#)



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

Preceded by: [G alpha \(q\) in G \(q\):RGS complex is inactivated](#)

PLC-beta hydrolyses PIP2 to DAG and IP3 ↗

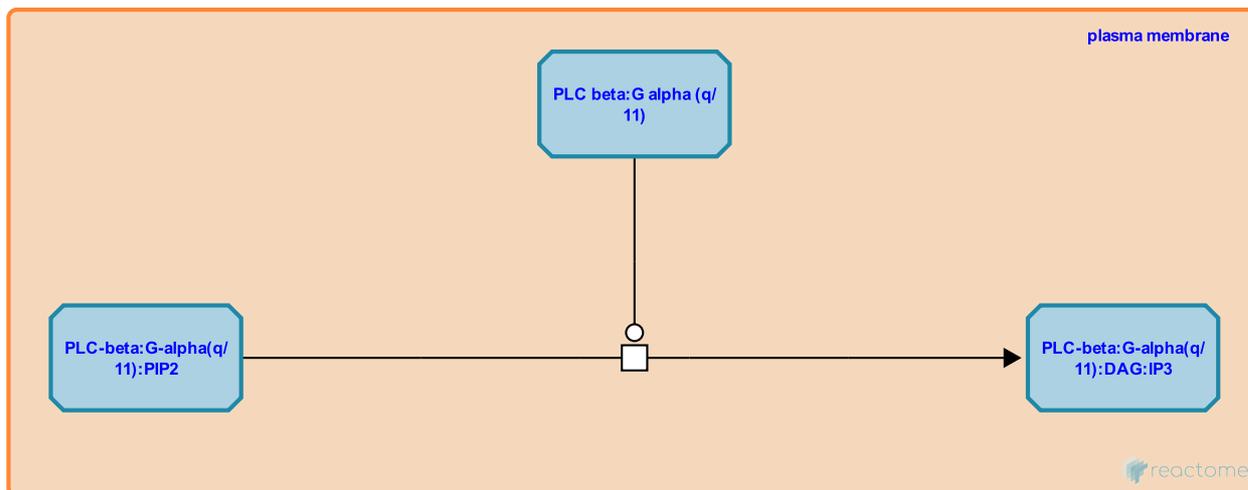
Location: [G alpha \(q\) signalling events](#)

Stable identifier: R-RNO-114688

Type: transition

Compartments: plasma membrane

Inferred from: [PLC-beta hydrolyses PIP2 to DAG and IP3 \(Homo sapiens\)](#)



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.

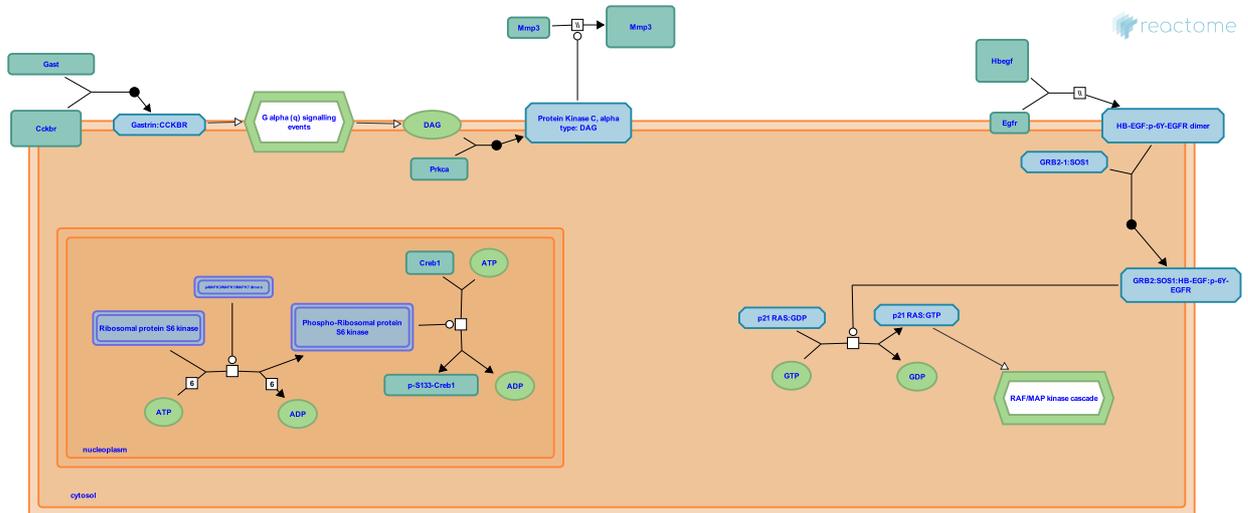
[More details and caveats of the event inference in Reactome.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Gastrin-CREB signalling pathway via PKC and MAPK ↗

Location: G alpha (q) signalling events

Stable identifier: R-RNO-881907

Inferred from: Gastrin-CREB signalling pathway via PKC and MAPK (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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

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