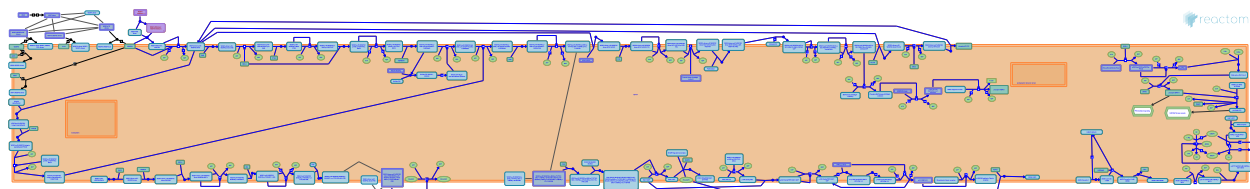


VEGFA-VEGFR2 Pathway



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](#).

04/05/2024

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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- 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

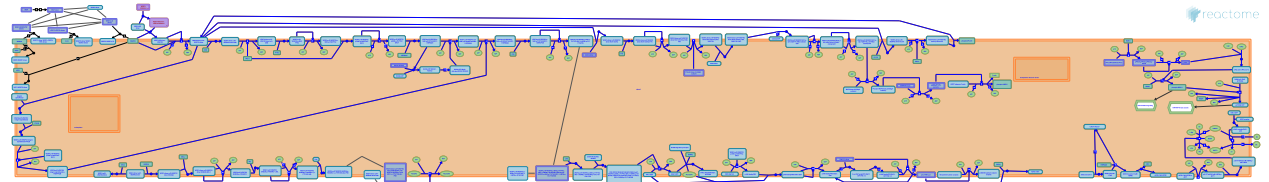
This document contains 3 pathways and 47 reactions ([see Table of Contents](#))

VEGFA-VEGFR2 Pathway ↗

Stable identifier: R-BTA-4420097

Compartments: plasma membrane

Inferred from: [VEGFA-VEGFR2 Pathway \(Homo sapiens\)](#)



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>

VEGFA-165 dimer binds VEGFR2 dimer ↗

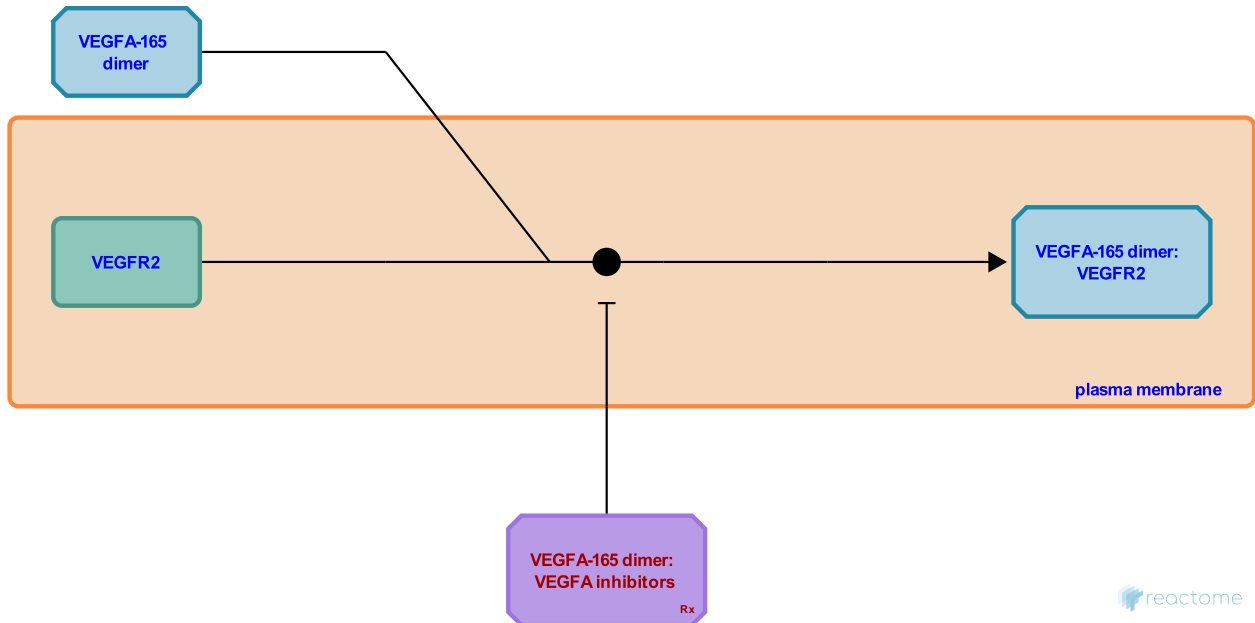
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-9691215

Type: binding

Compartments: plasma membrane, extracellular region

Inferred from: [VEGFA-165 dimer binds VEGFR2 dimer \(Homo sapiens\)](#)



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>

VEGFA-165 dimer binds VEGFA inhibitors [↗](#)

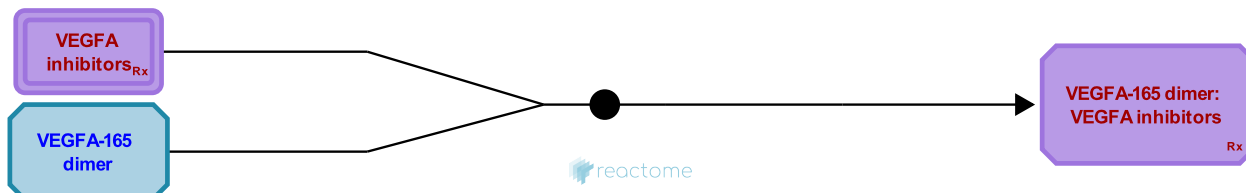
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-9679477

Type: binding

Compartments: extracellular region

Inferred from: [VEGFA-165 dimer binds VEGFA inhibitors \(Homo sapiens\)](#)



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>

VEGFR2 autophosphorylates ↗

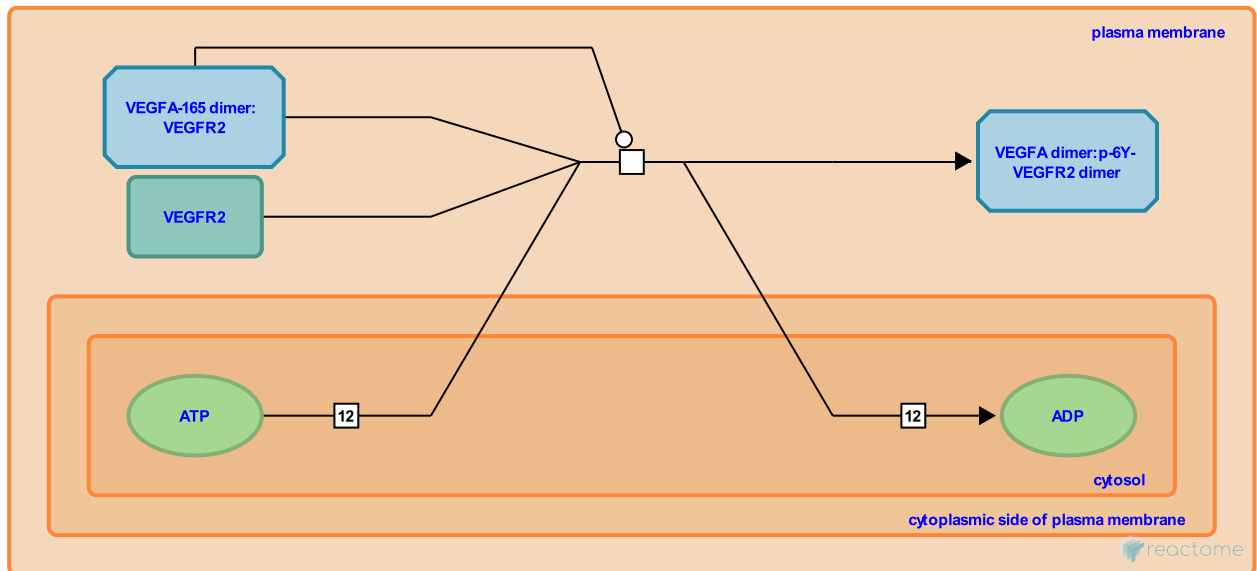
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-4420117

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [VEGFR2 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>

Followed by: [p-6Y-VEGFR2 binds SHC-transforming protein 2](#), [p-6Y-VEGFR2 binds NCK](#), [p-6Y-VEGFR2 binds SH2D2A](#), [p-6Y-VEGFR2 binds SHB](#), [Integrin alphaVbeta3 binds p-6Y-VEGFR2](#)

p-6Y-VEGFR2 binds SHB ↗

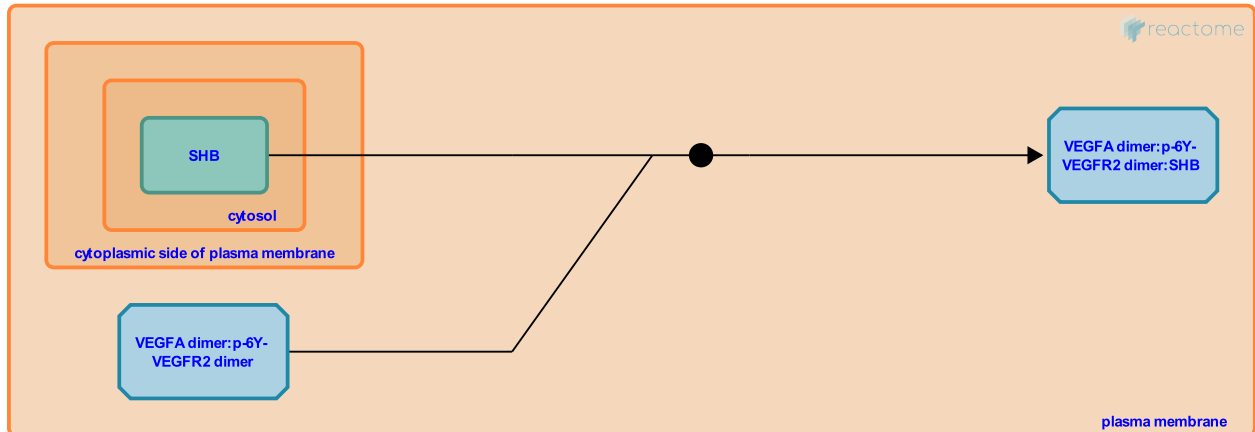
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-4420099

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [p-6Y-VEGFR2 binds SHB \(Homo sapiens\)](#)



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: [VEGFR2 autophosphorylates](#)

Followed by: [SRC-1 phosphorylates SHB](#)

SRC-1 phosphorylates SHB ↗

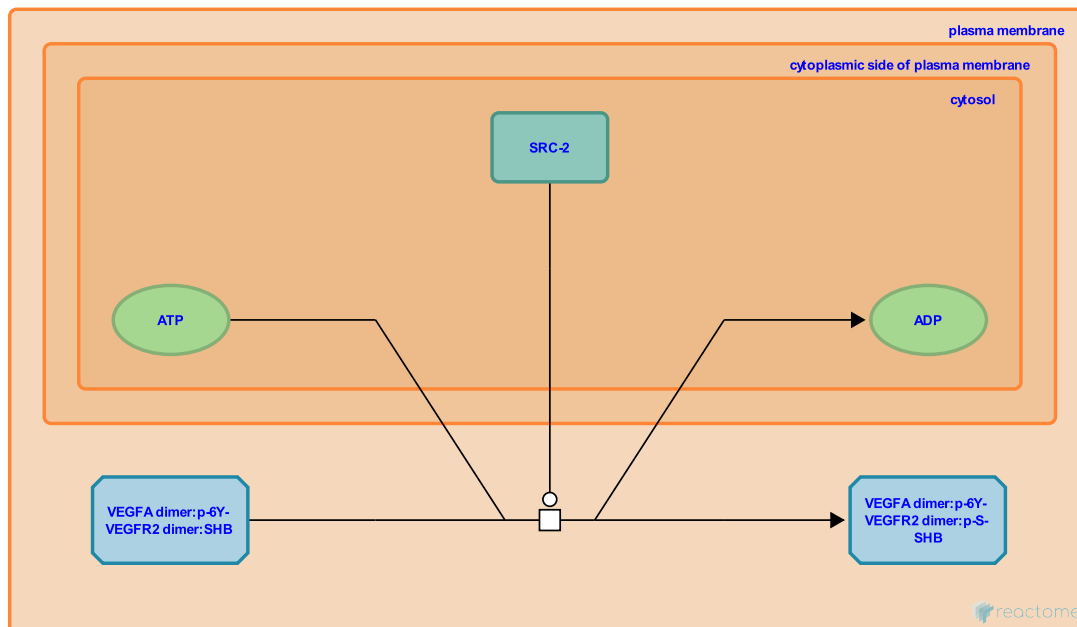
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-4420128

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: SRC-1 phosphorylates SHB (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: p-6Y-VEGFR2 binds SHB

Followed by: PTK2 binds p-S-SHB and is recruited to p-6Y-VEGFR2

PTK2 binds p-S-SHB and is recruited to p-6Y-VEGFR2 ↗

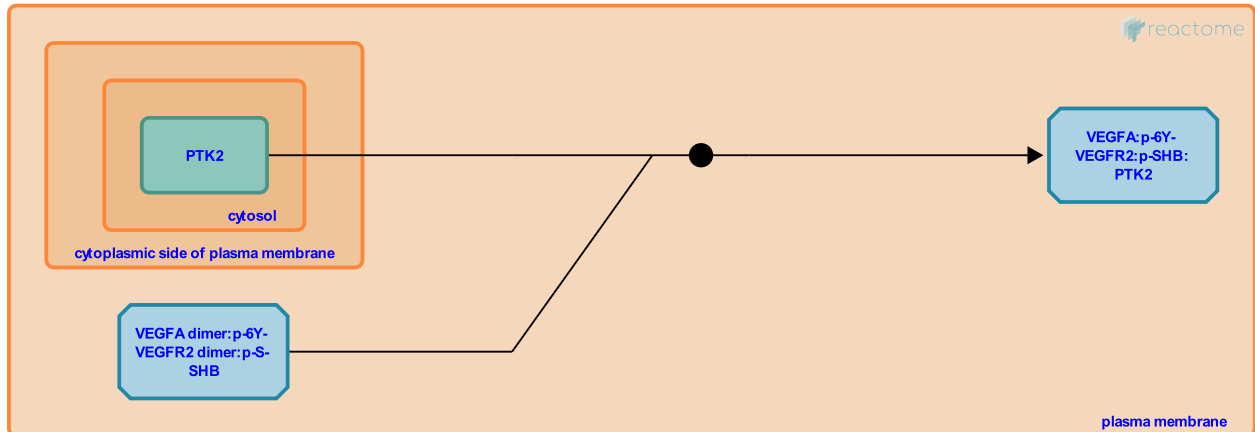
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-4420083

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [PTK2 binds p-S-SHB and is recruited to p-6Y-VEGFR2 \(Homo sapiens\)](#)



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: [SRC-1 phosphorylates SHB](#)

Followed by: [PTK2 autophosphorylates](#)

PTK2 autophosphorylates ↗

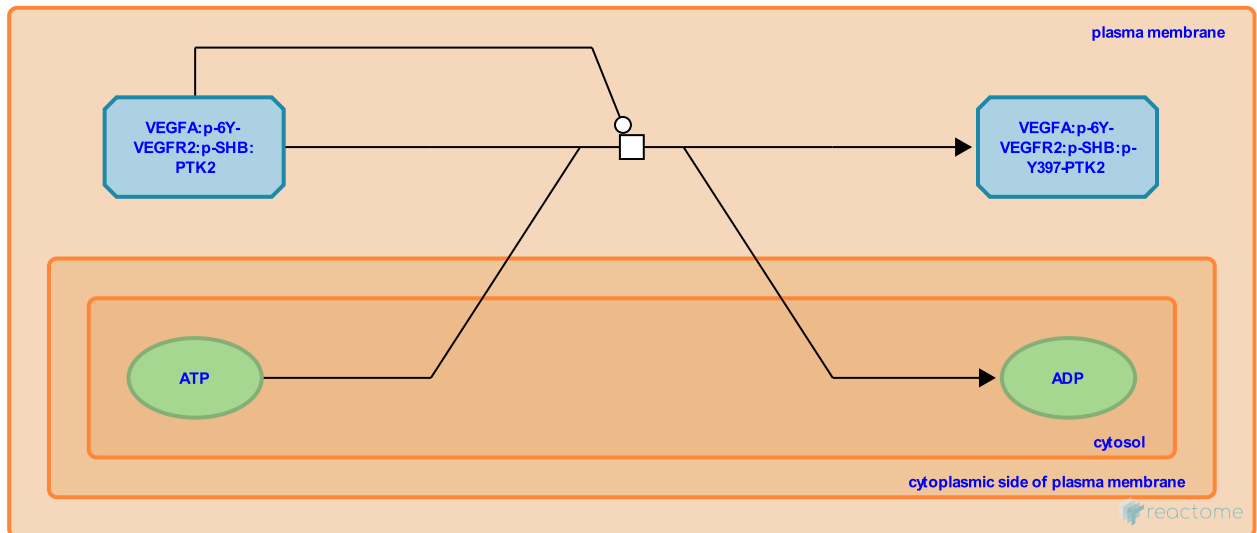
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218642

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [PTK2 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: [PTK2 binds p-S-SHB and is recruited to p-6Y-VEGFR2](#)

Followed by: [SRC-1 binds p-Y397-PTK2](#)

SRC-1 binds p-Y397-PTK2 ↗

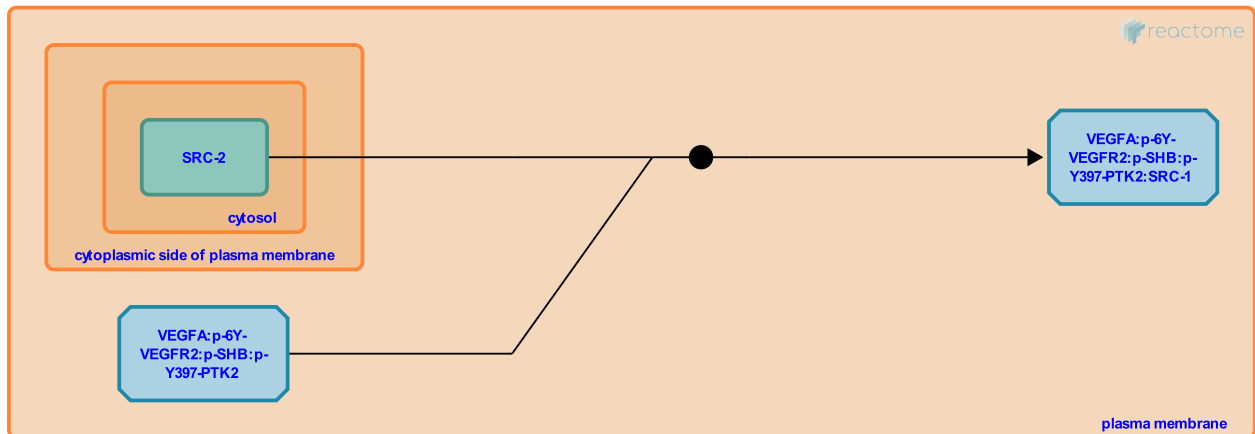
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218645

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [SRC-1 binds p-Y397-PTK2 \(Homo sapiens\)](#)



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: [PTK2 autophosphorylates](#)

Followed by: [SRC-1 phosphorylates p-Y397-PTK2](#)

SRC-1 phosphorylates p-Y397-PTK2 ↗

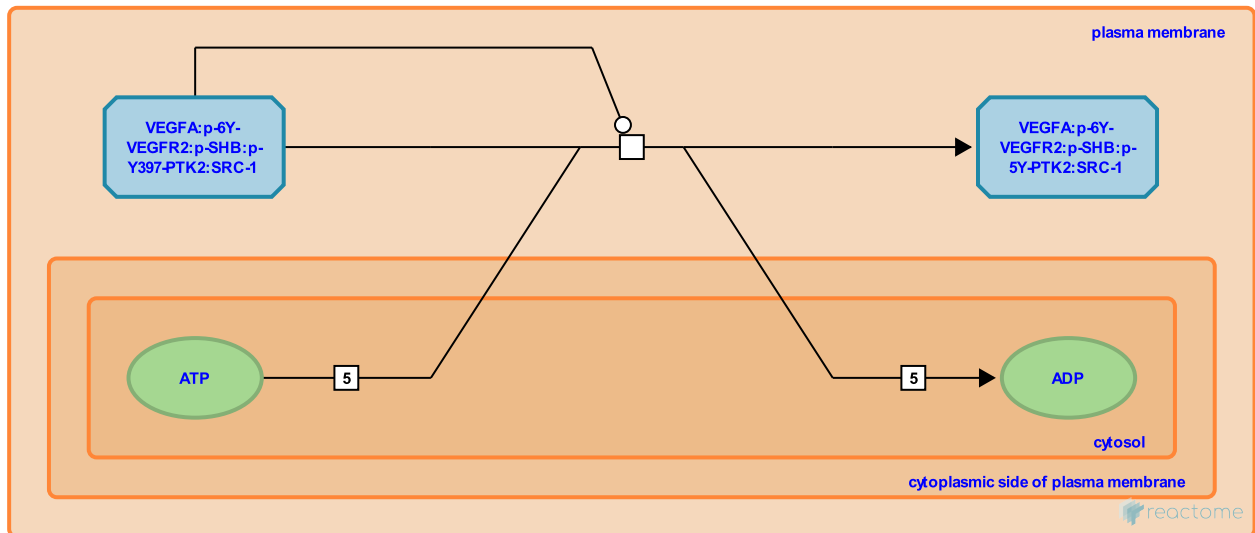
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218640

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [SRC-1 phosphorylates p-Y397-PTK2 \(Homo sapiens\)](#)



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: [SRC-1 binds p-Y397-PTK2](#)

Followed by: [HSP90AA1 binds p-6Y-VEGFR2](#)

Integrin alphaVbeta3 binds p-6Y-VEGFR2 ↗

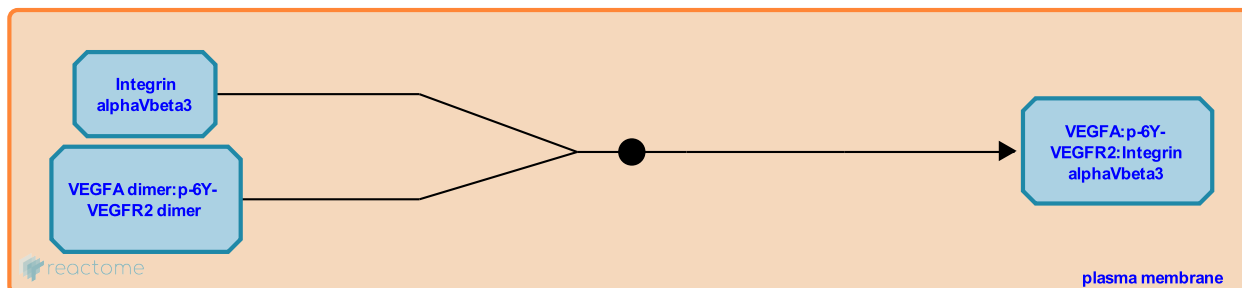
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218818

Type: binding

Compartments: plasma membrane

Inferred from: [Integrin alphaVbeta3 binds p-6Y-VEGFR2 \(Homo sapiens\)](#)



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: [VEGFR2 autophosphorylates](#)

Followed by: [PTK2beta binds alphaVbeta3](#)

HSP90AA1 binds p-6Y-VEGFR2 ↗

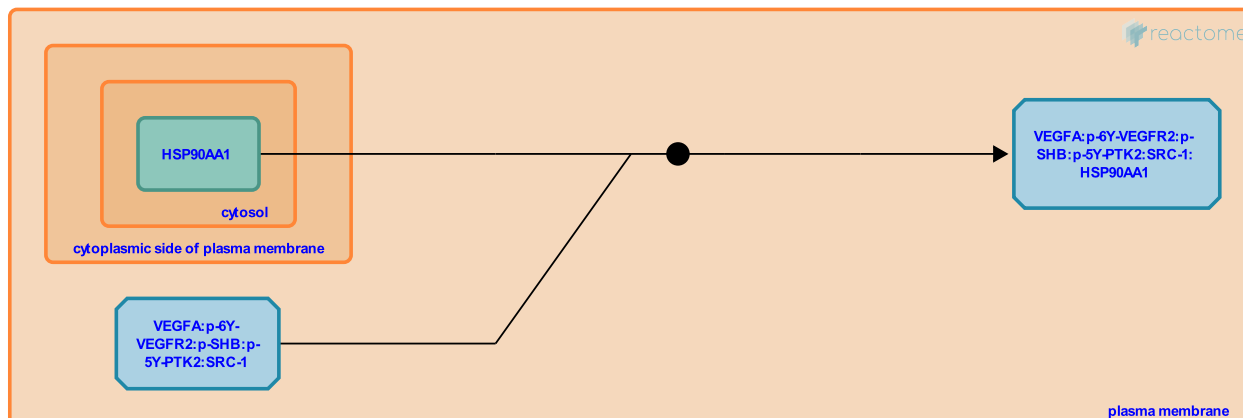
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218643

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: HSP90AA1 binds p-6Y-VEGFR2 (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: SRC-1 phosphorylates p-Y397-PTK2

Followed by: Active ROCK1,ROCK2 phosphorylates p-5Y-PTK2 on S732, RHOA:GTP:Mg2+ binds ROCK1,ROCK2

RHOA:GTP:Mg²⁺ binds ROCK1,ROCK2 ↗

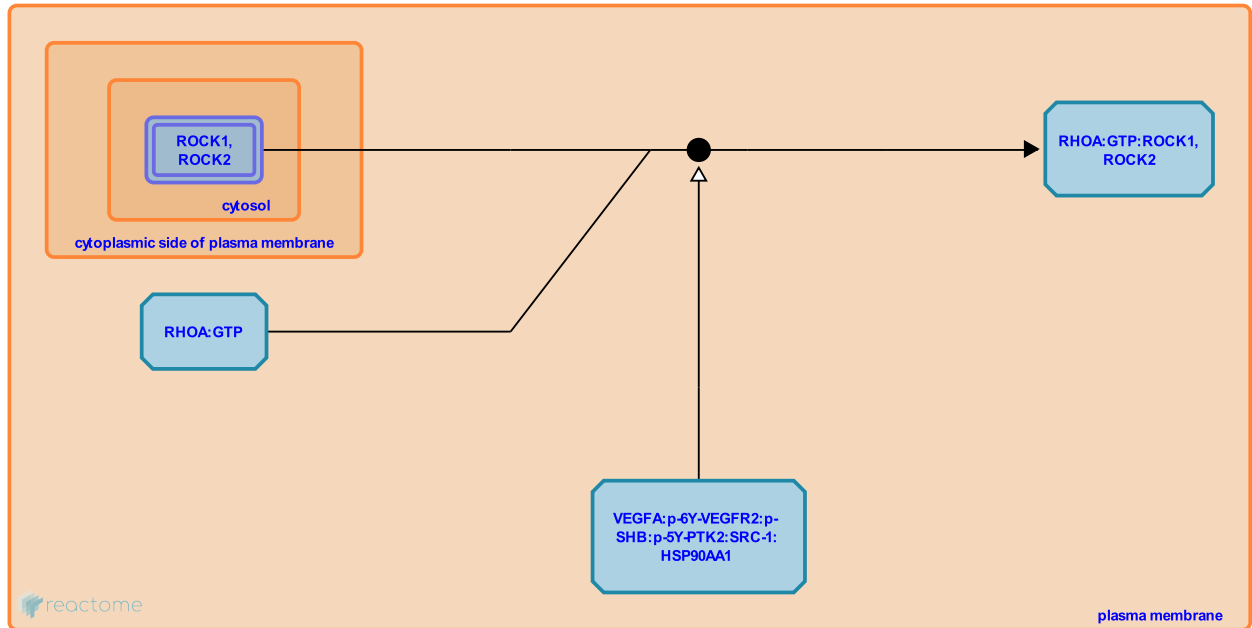
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-3928647

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: RHOA:GTP:Mg²⁺ binds ROCK1,ROCK2 (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: HSP90AA1 binds p-6Y-VEGFR2

Followed by: ROCK1,ROCK2 are activated

ROCK1,ROCK2 are activated ↗

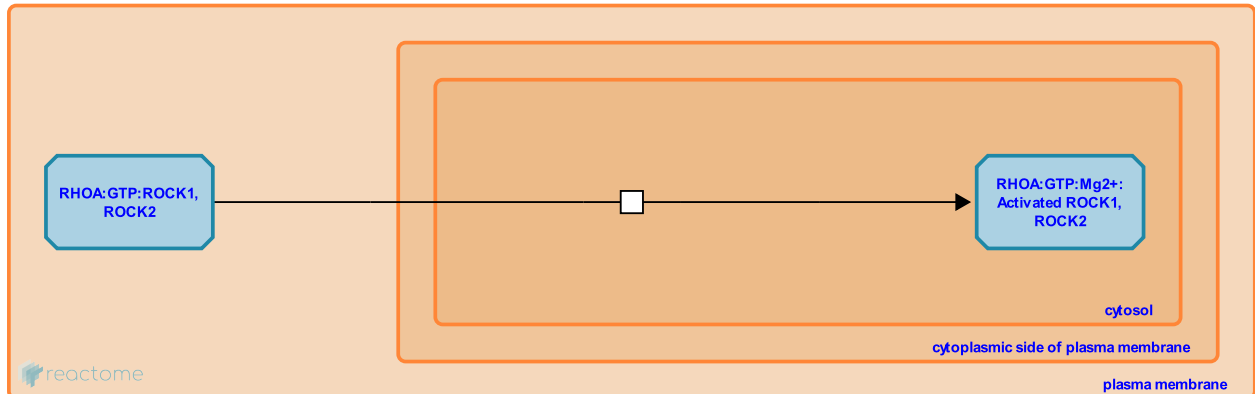
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5228992

Type: transition

Compartments: cytosol

Inferred from: [ROCK1,ROCK2 are 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.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Preceded by: [RHOA:GTP:Mg²⁺ binds ROCK1,ROCK2](#)

Followed by: [Active ROCK1,ROCK2 phosphorylates p-5Y-PTK2 on S732](#)

Active ROCK1,ROCK2 phosphorylates p-5Y-PTK2 on S732 ↗

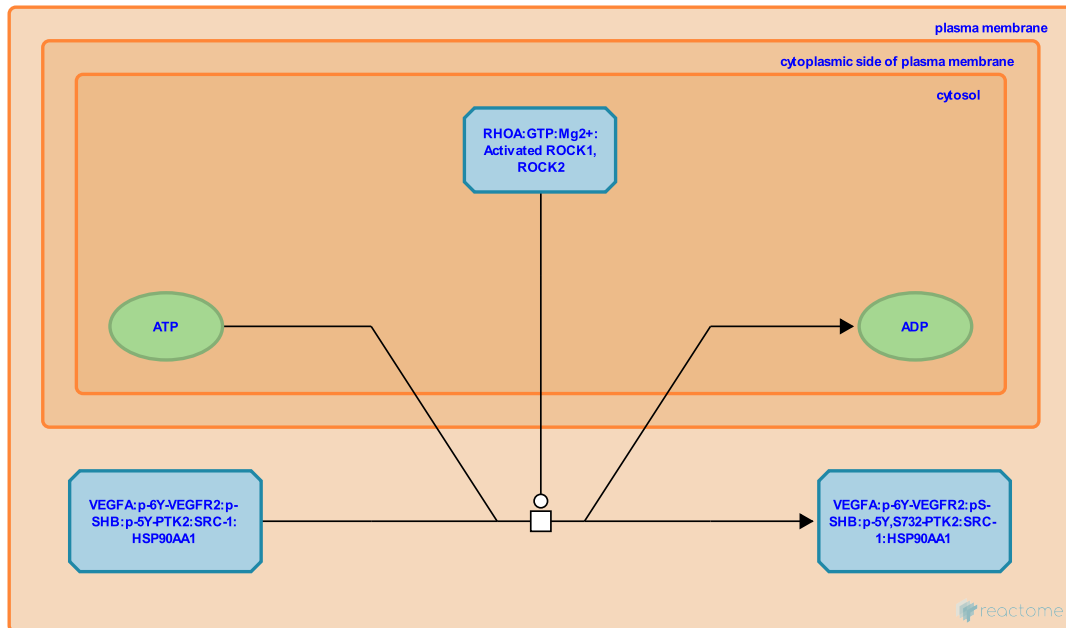
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218826

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: Active ROCK1,ROCK2 phosphorylates p-5Y-PTK2 on S732 (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: ROCK1,ROCK2 are activated, HSP90AA1 binds p-6Y-VEGFR2

Followed by: p-Y402-PTK2B phosphorylates p-5Y,S732-PTK2 on Y407

PTK2beta binds alphaVbeta3 ↗

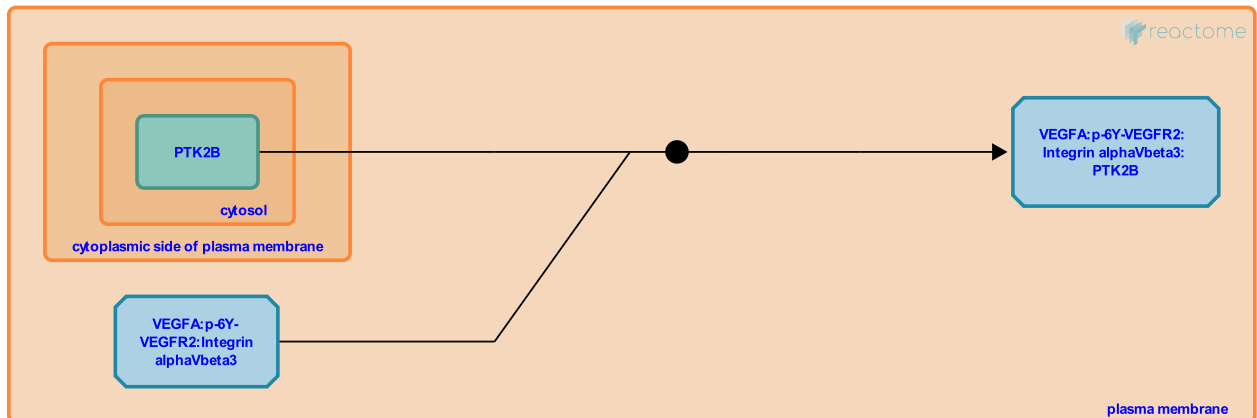
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218836

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [PTK2beta binds alphaVbeta3 \(Homo sapiens\)](#)



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: [Integrin alphaVbeta3 binds p-6Y-VEGFR2](#)

Followed by: [SRC-1 phosphorylates PTK2-beta](#)

SRC-1 phosphorylates PTK2-beta ↗

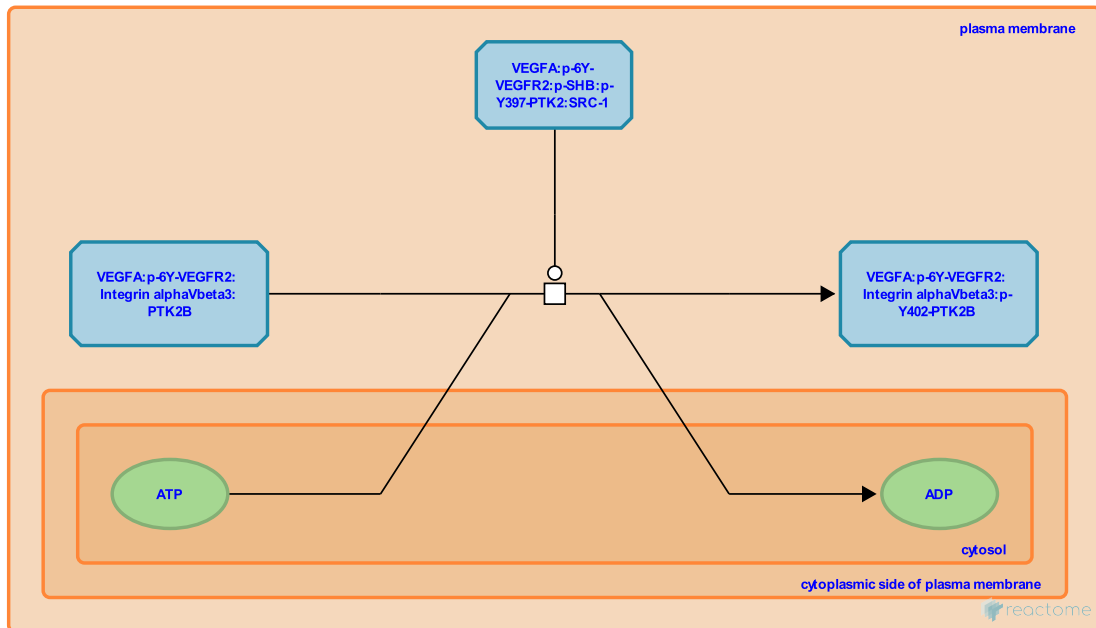
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218830

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: SRC-1 phosphorylates PTK2-beta (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: PTK2beta binds alphaVbeta3

Followed by: p-Y402-PTK2B phosphorylates p-5Y,S732-PTK2 on Y407

p-Y402-PTK2B phosphorylates p-5Y,S732-PTK2 on Y407 ↗

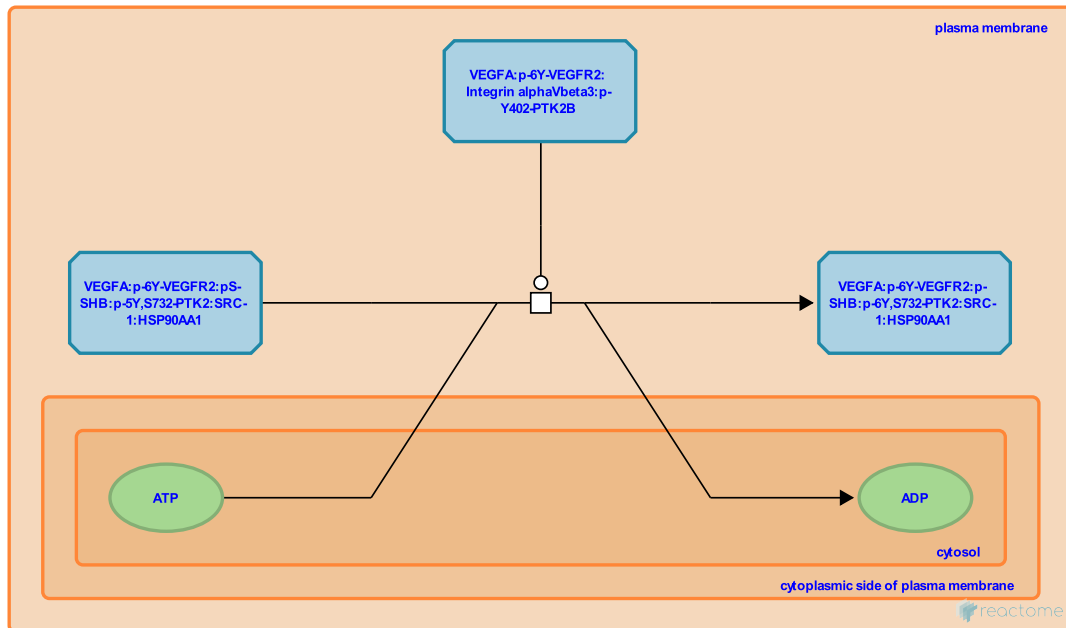
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218851

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: p-Y402-PTK2B phosphorylates p-5Y,S732-PTK2 on Y407 (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: SRC-1 phosphorylates PTK2-beta, Active ROCK1,ROCK2 phosphorylates p-5Y-PTK2 on S732

Followed by: PXN binds p-6Y,S732-PTK2

PXN binds p-6Y,S732-PTK2 ↗

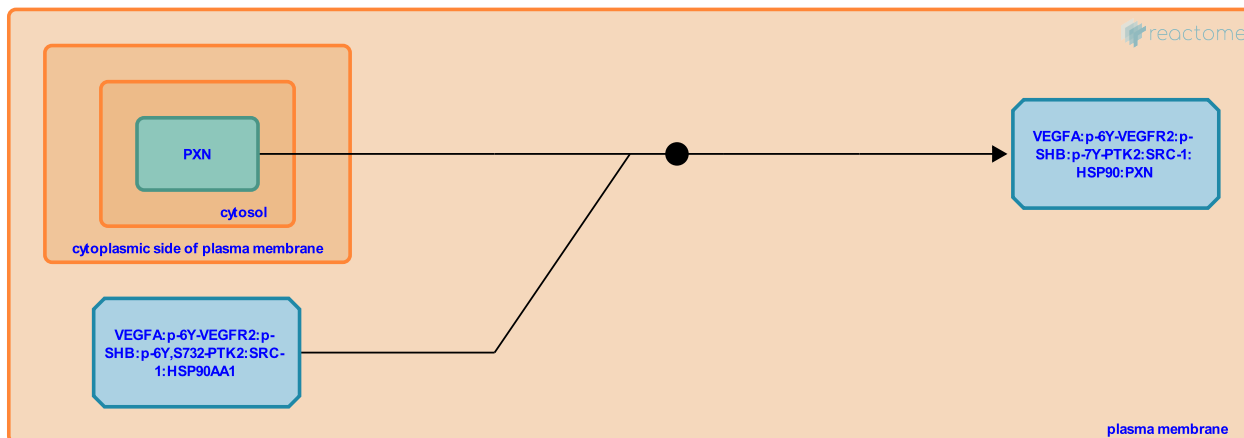
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218838

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: PXN binds p-6Y,S732-PTK2 (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: p-Y402-PTK2B phosphorylates p-5Y,S732-PTK2 on Y407

Followed by: PTK2 and SRC-1 phosphorylate PXN on Y31 and Y118

PTK2 and SRC-1 phosphorylate PXN on Y31 and Y118 ↗

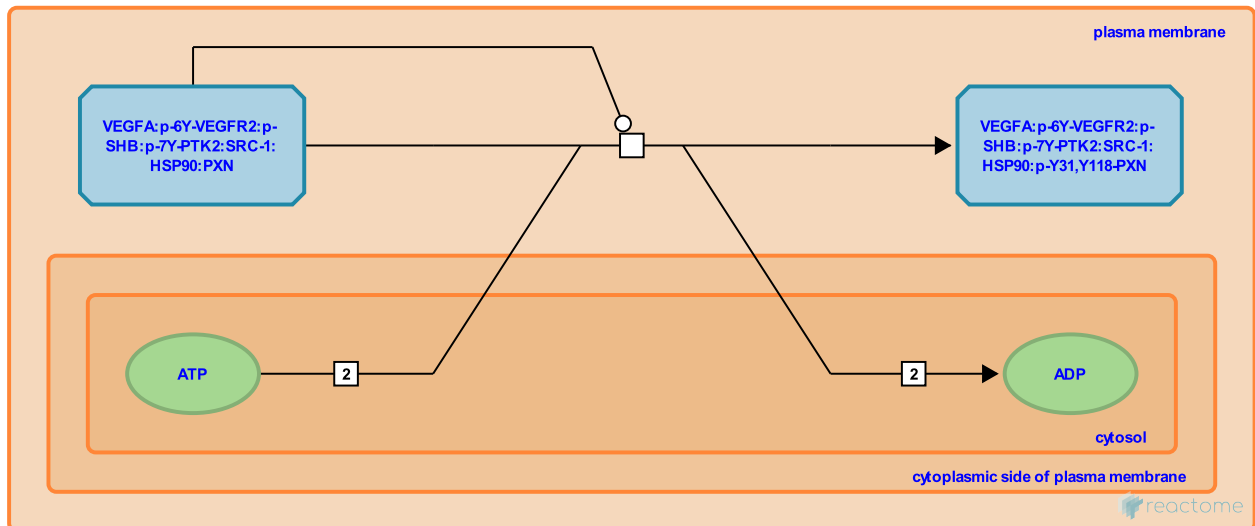
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218809

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [PTK2 and SRC-1 phosphorylate PXN on Y31 and Y118 \(Homo sapiens\)](#)



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: [PXN binds p-6Y,S732-PTK2](#)

Followed by: [CRK binds BCAR1 and or PXN](#)

CRK binds BCAR1 and or PXN ↗

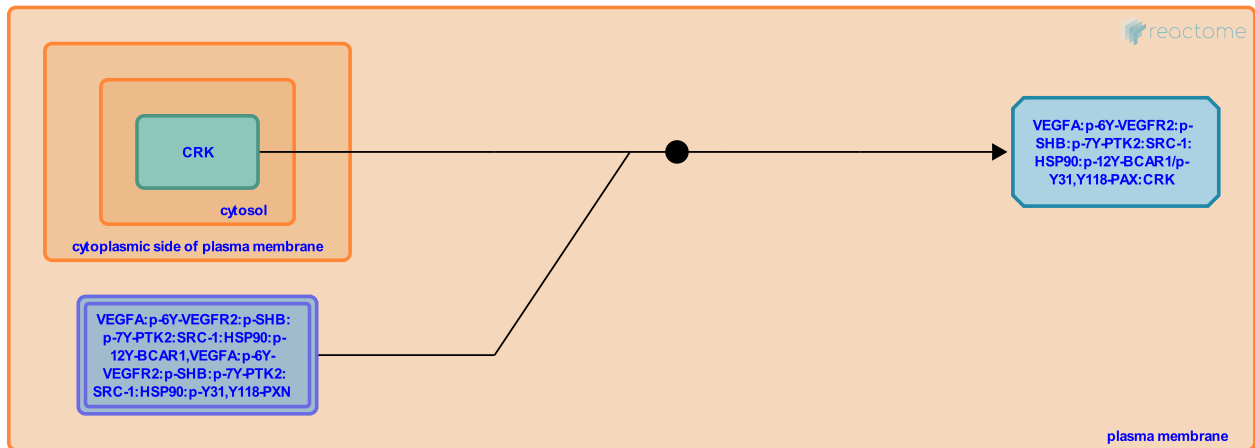
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218822

Type: binding

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: CRK binds BCAR1 and or PXN (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: PTK2 and SRC-1 phosphorylate PXN on Y31 and Y118

Followed by: DOCK180:ELMO binds CRK

DOCK180:ELMO binds CRK ↗

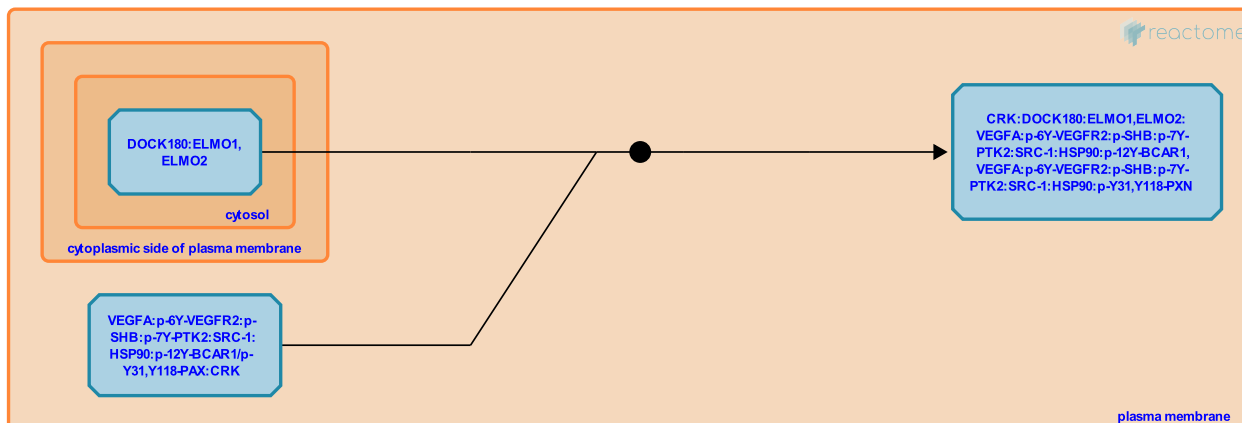
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218811

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: DOCK180:ELMO binds CRK (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: CRK binds BCAR1 and or PXN

Followed by: DOCK180:ELMO exchanges GTP for GDP, activating RAC1

DOCK180:ELMO exchanges GTP for GDP, activating RAC1 ↗

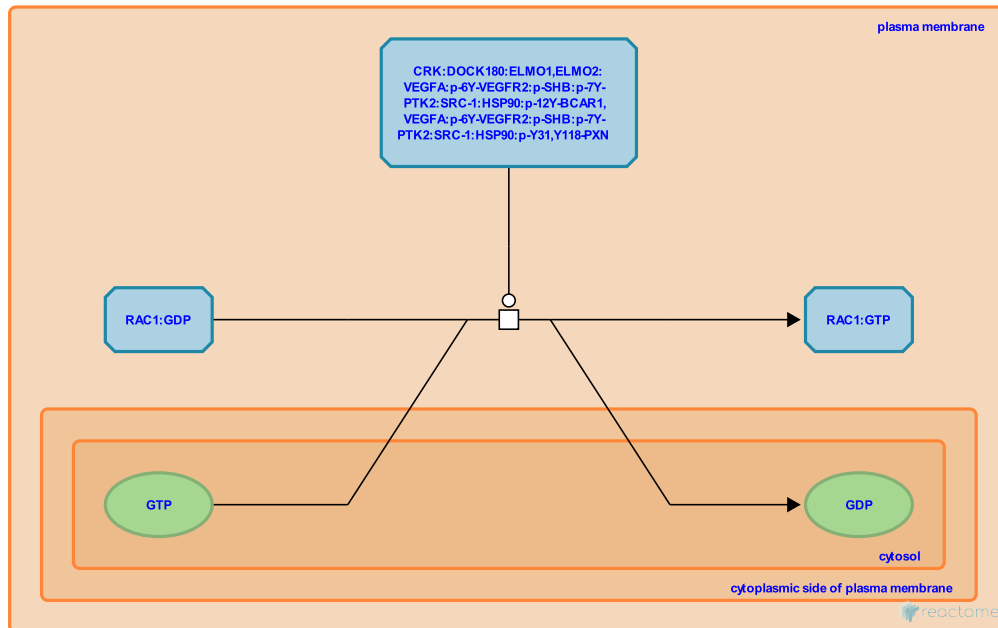
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218839

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: DOCK180:ELMO exchanges GTP for GDP, activating RAC1 (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: DOCK180:ELMO binds CRK

Followed by: RAC1:GTP and PIP3 bind WAVE Regulatory Complex (WRC)

RAC1:GTP and PIP3 bind WAVE Regulatory Complex (WRC) ↗

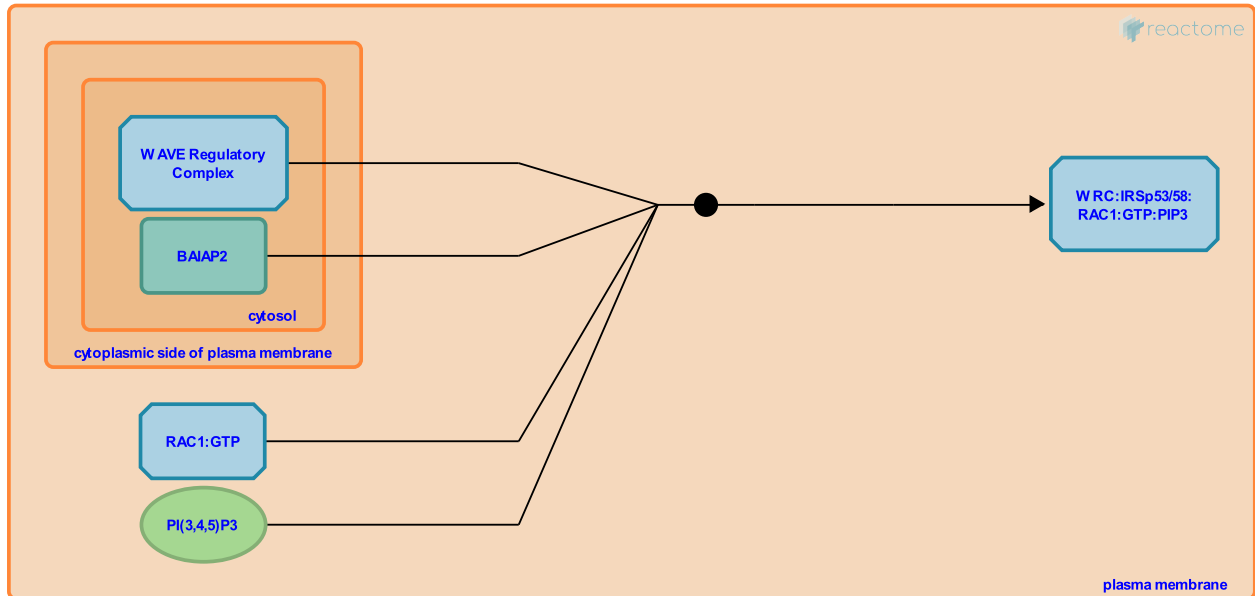
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-2029465

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [RAC1:GTP and PIP3 bind WAVE Regulatory Complex \(WRC\) \(Homo sapiens\)](#)



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: [VAV exchanges GTP for GDP on RAC1, activating it](#), [DOCK180:ELMO exchanges GTP for GDP, activating RAC1](#)

p-6Y-VEGFR2 binds SHC-transforming protein 2 ↗

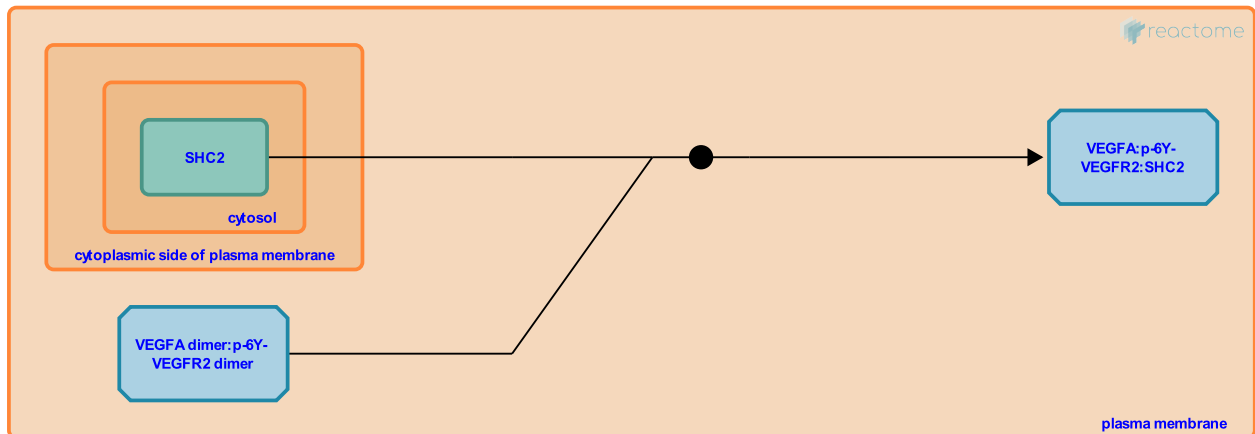
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-4420107

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: p-6Y-VEGFR2 binds SHC-transforming protein 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.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Preceded by: VEGFR2 autophosphorylates

p-6Y-VEGFR2 binds SH2D2A ↗

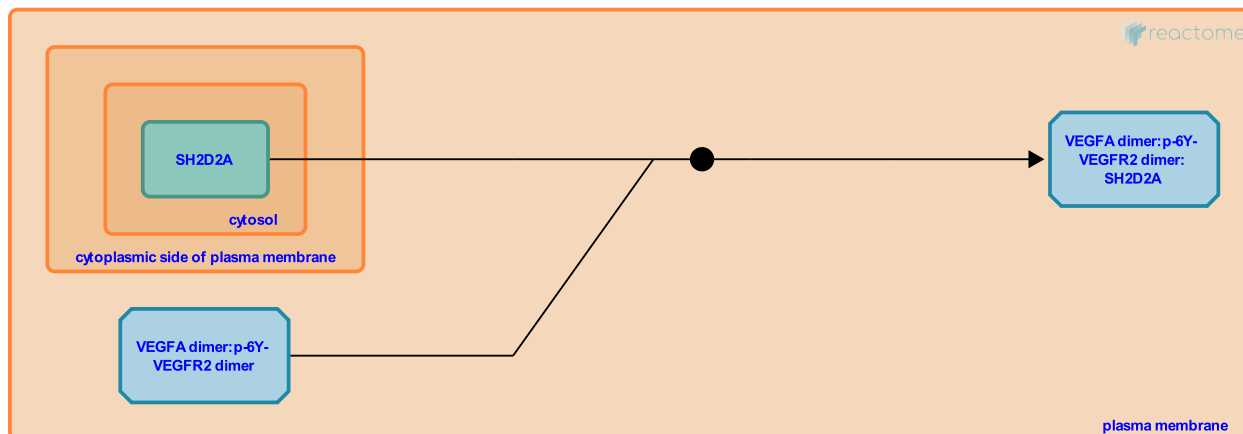
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-4420143

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: p-6Y-VEGFR2 binds SH2D2A (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: VEGFR2 autophosphorylates

Followed by: SRC1-1 binds SH2D2A and is recruited to VEGFR2

SRC1-1 binds SH2D2A and is recruited to VEGFR2 ↗

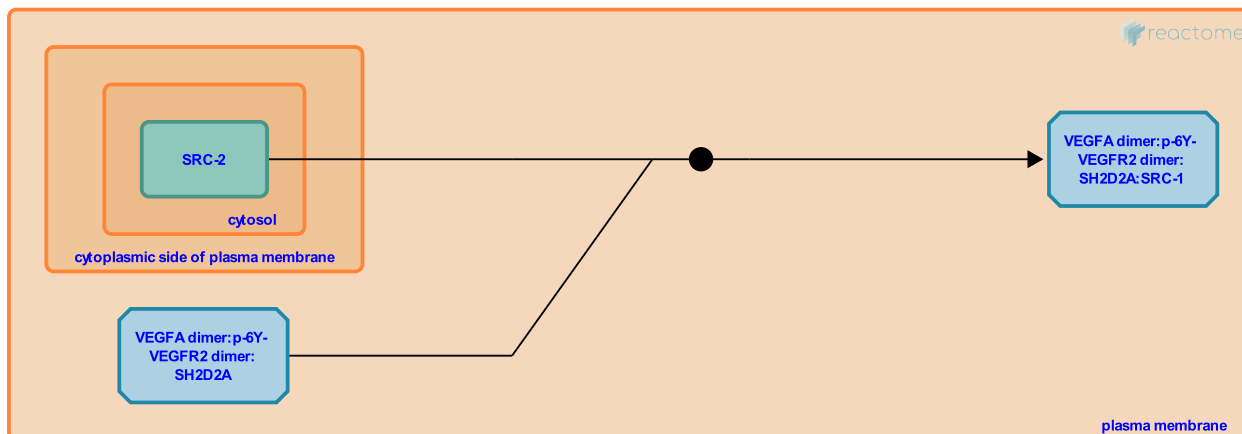
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-4420140

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [SRC1-1 binds SH2D2A and is recruited to VEGFR2 \(Homo sapiens\)](#)



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-6Y-VEGFR2 binds SH2D2A](#)

Followed by: [Phosphorylation of SRC-1](#)

Phosphorylation of SRC-1 ↗

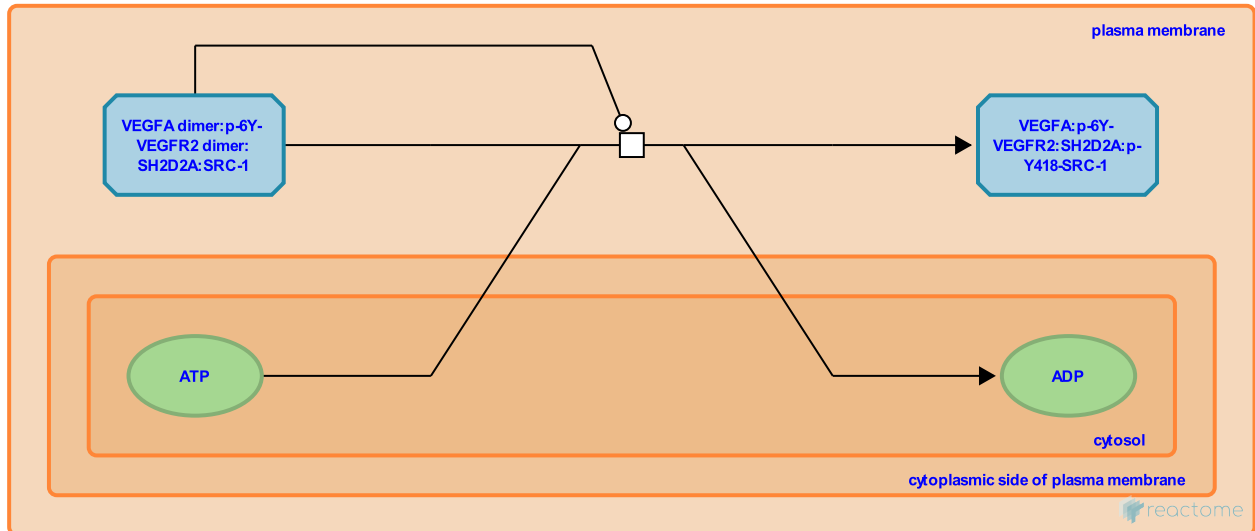
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-4420206

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [Phosphorylation of SRC-1 \(Homo sapiens\)](#)



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: [SRC1-1 binds SH2D2A and is recruited to VEGFR2](#)

Followed by: [AXL binds SRC-1](#)

AXL binds SRC-1 ↗

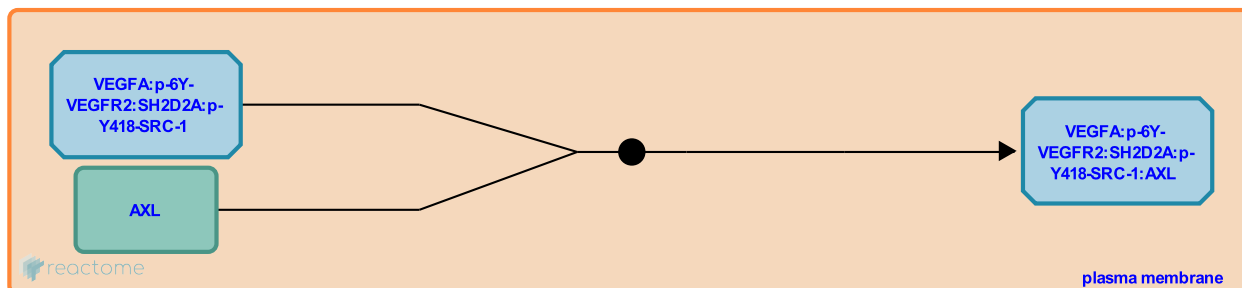
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5357432

Type: binding

Compartments: plasma membrane

Inferred from: [AXL binds SRC-1 \(Homo sapiens\)](#)



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: [Phosphorylation of SRC-1](#)

Followed by: [AXL autophosphorylates on Y779 and Y821](#)

AXL autophosphorylates on Y779 and Y821 ↗

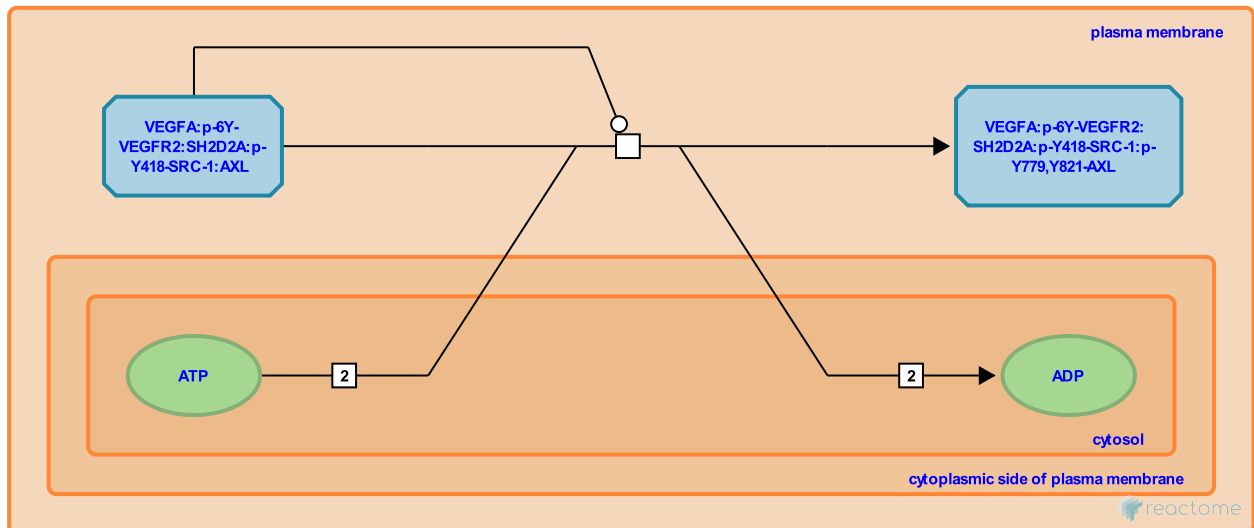
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5357429

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [AXL autophosphorylates on Y779 and Y821 \(Homo sapiens\)](#)



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: [AXL binds SRC-1](#)

Followed by: [p-AXL binds PI3K](#)

p-AXL binds PI3K ↗

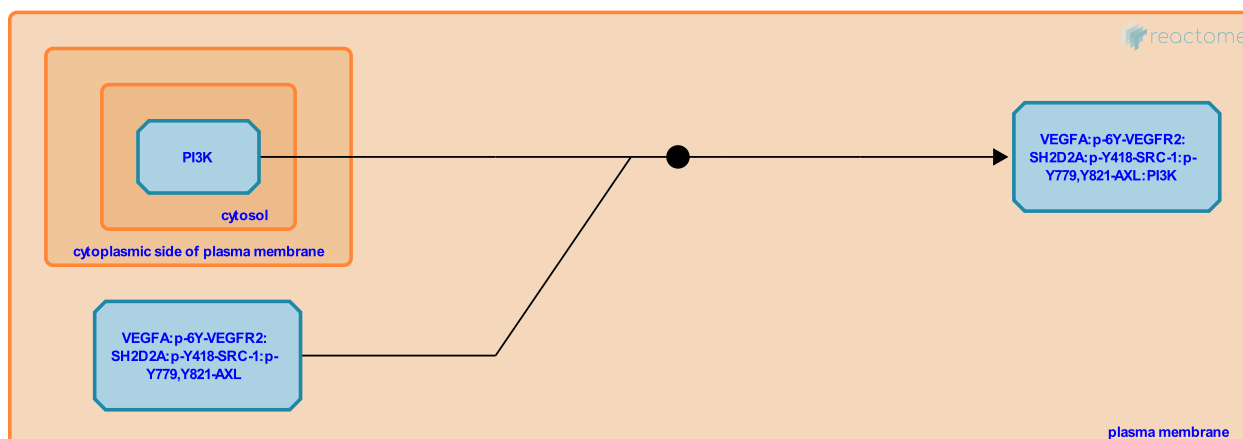
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5357479

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: p-AXL binds PI3K (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: AXL autophosphorylates on Y779 and Y821

Followed by: VEGFA dimer:p-6Y-VEGFR2 dimer:PI3K phosphorylates PIP2 to PIP3

VEGFA dimer:p-6Y-VEGFR2 dimer:PI3K phosphorylates PIP2 to PIP3 ↗

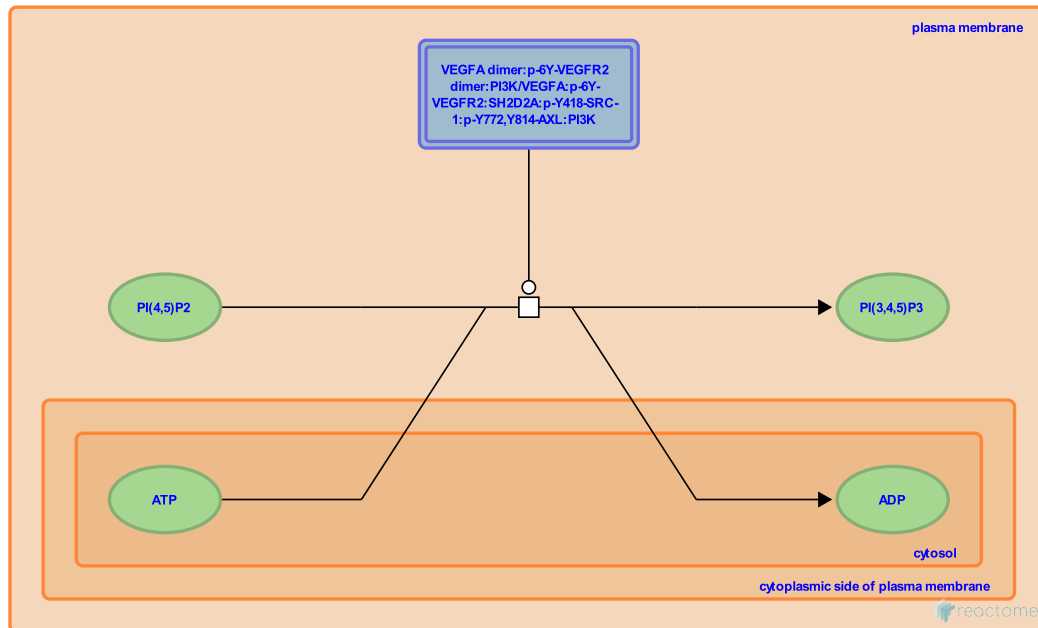
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218819

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [VEGFA dimer:p-6Y-VEGFR2 dimer:PI3K phosphorylates 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>

Preceded by: [p-AXL binds PI3K](#)

Src kinases phosphorylate VAV ↗

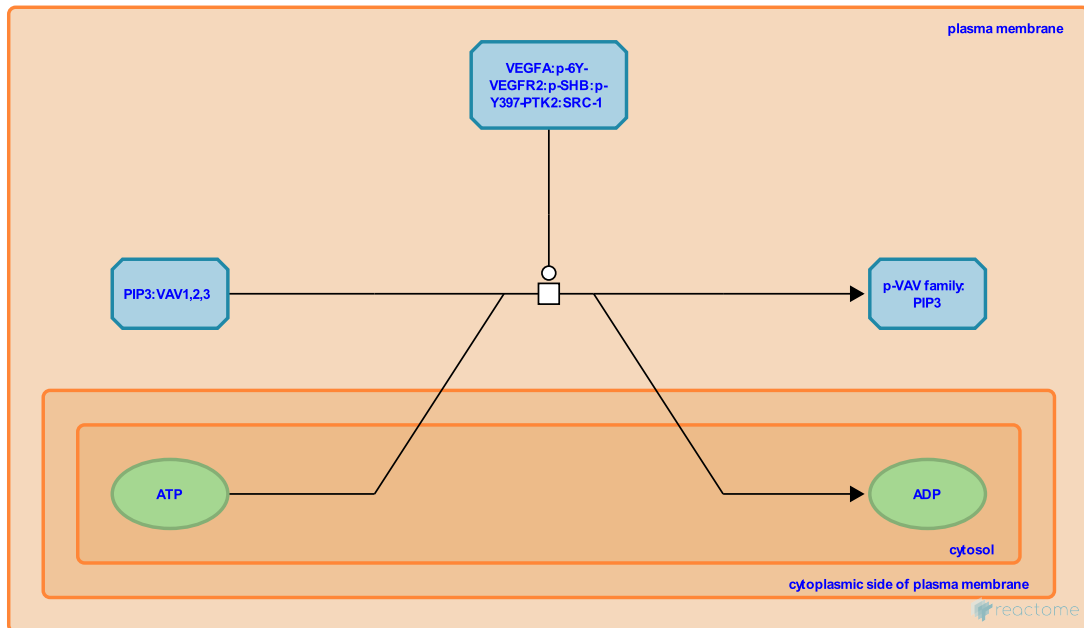
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218820

Type: transition

Compartments: plasma membrane, cytosol

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

Followed by: p-VAV family:PIP3 binds RAC1:GDP

p-VAV family:PIP3 binds RAC1:GDP ↗

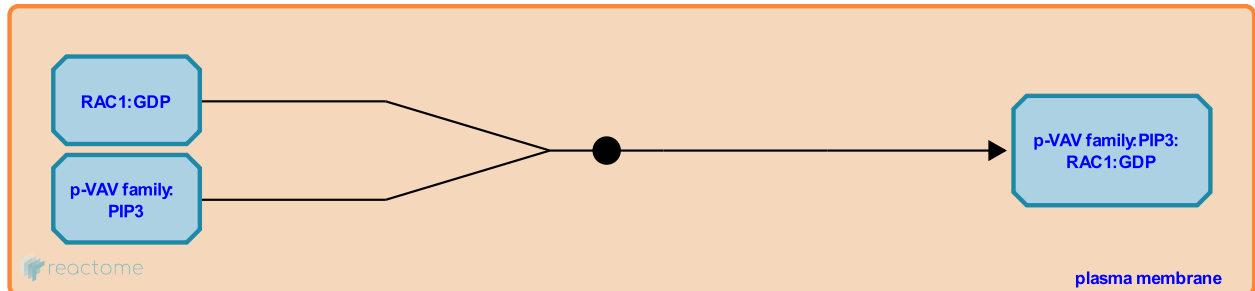
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-8951586

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [p-VAV family:PIP3 binds RAC1: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.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Preceded by: [Src kinases phosphorylate VAV](#)

Followed by: [VAV exchanges GTP for GDP on RAC1, activating it](#)

VAV exchanges GTP for GDP on RAC1, activating it ↗

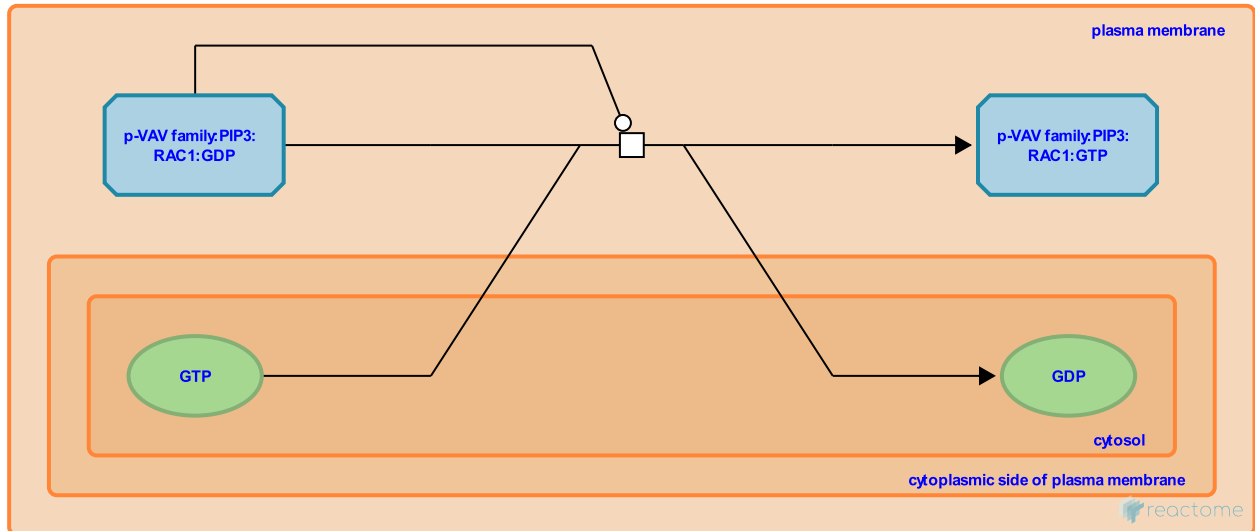
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218850

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: VAV exchanges GTP for GDP on RAC1, activating it (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: p-VAV family:PIP3 binds RAC1:GDP

Followed by: NADPH oxidase 2 (NOX2) complex binds RAC1, RAC1:GTP and PIP3 bind WAVE Regulatory Complex (WRC)

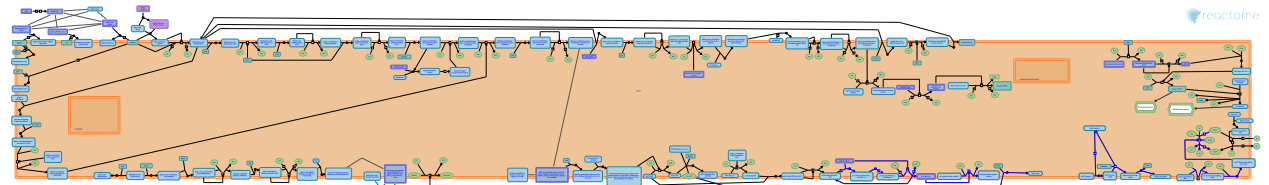
VEGFR2 mediated vascular permeability ↗

Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218920

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [VEGFR2 mediated vascular permeability \(Homo sapiens\)](#)



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>

NADPH oxidase 2 (NOX2) complex binds RAC1 [↗](#)

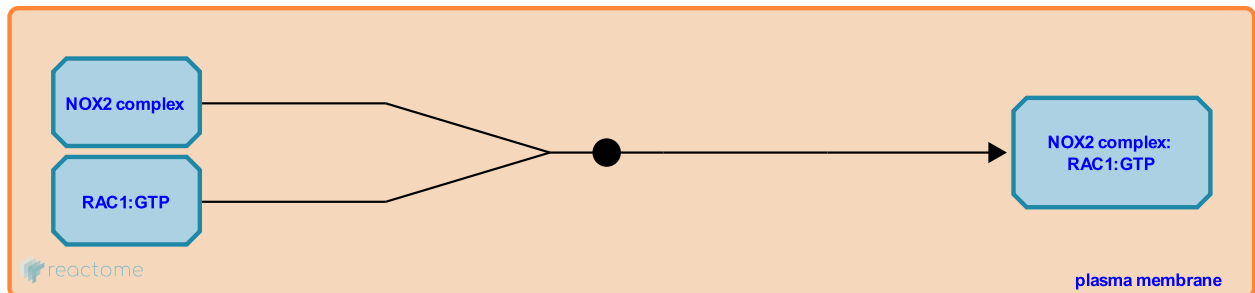
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218827

Type: binding

Compartments: plasma membrane

Inferred from: [NADPH oxidase 2 \(NOX2\) complex binds RAC1 \(Homo sapiens\)](#)



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: [VAV exchanges GTP for GDP on RAC1, activating it](#)

Followed by: [NADPH oxidase 2 generates superoxide from oxygen](#)

NADPH oxidase 2 generates superoxide from oxygen ↗

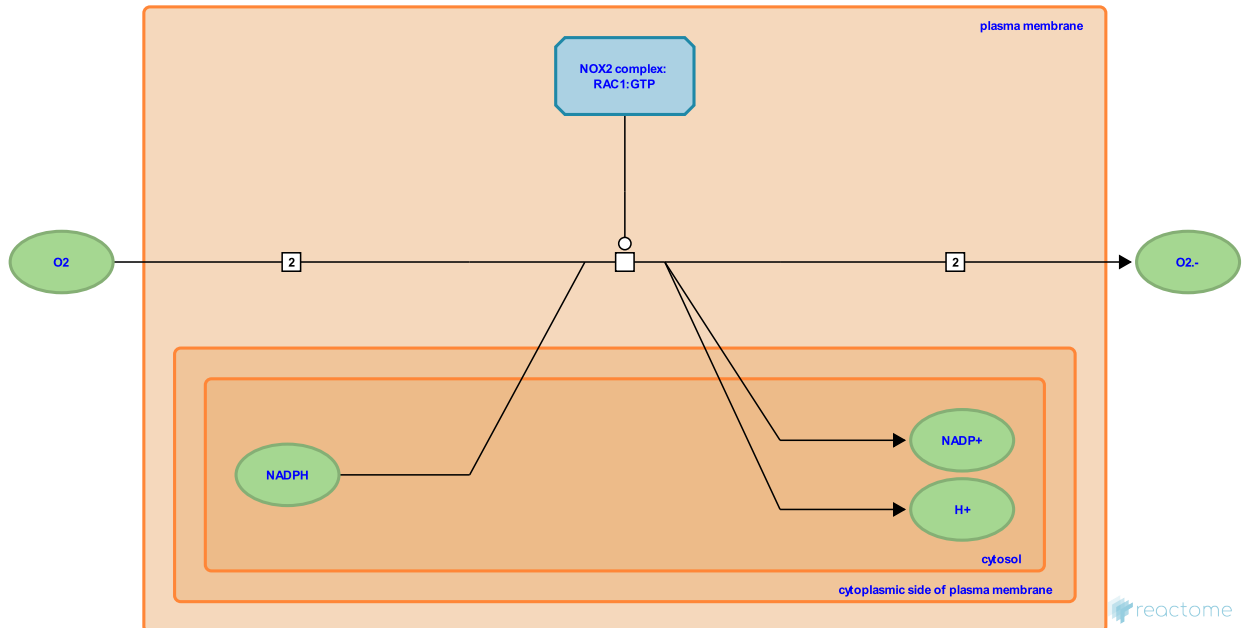
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218841

Type: transition

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: NADPH oxidase 2 generates superoxide from oxygen (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: NADPH oxidase 2 (NOX2) complex binds RAC1

p-6Y-VEGFR2 binds NCK ↗

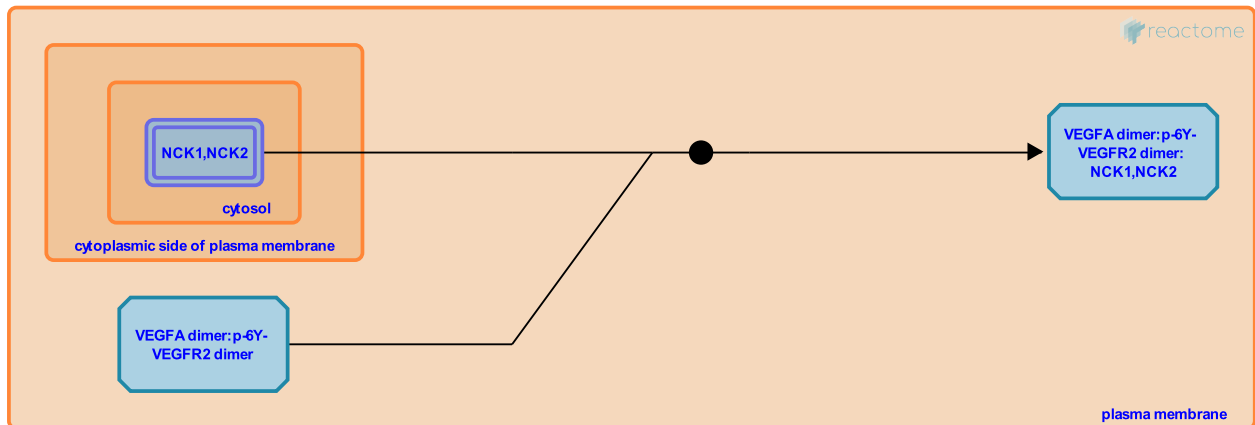
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218815

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: [p-6Y-VEGFR2 binds NCK \(Homo sapiens\)](#)



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: [VEGFR2 autophosphorylates](#)

Followed by: [p-6Y-VEGFR2 binds FYN](#)

p-6Y-VEGFR2 binds FYN ↗

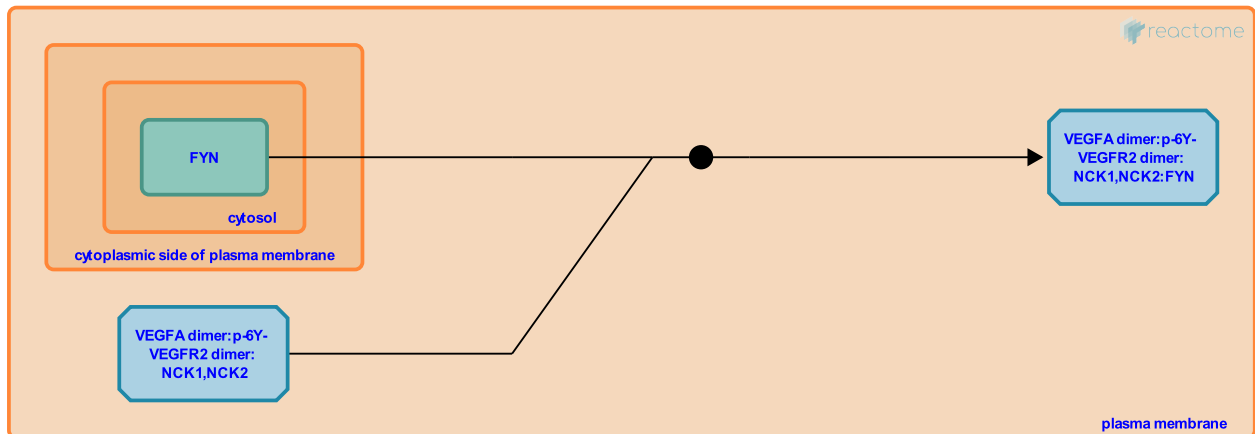
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218824

Type: binding

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [p-6Y-VEGFR2 binds FYN \(Homo sapiens\)](#)



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-6Y-VEGFR2 binds NCK](#)

Followed by: [FYN autophosphorylates](#)

FYN autophosphorylates ↗

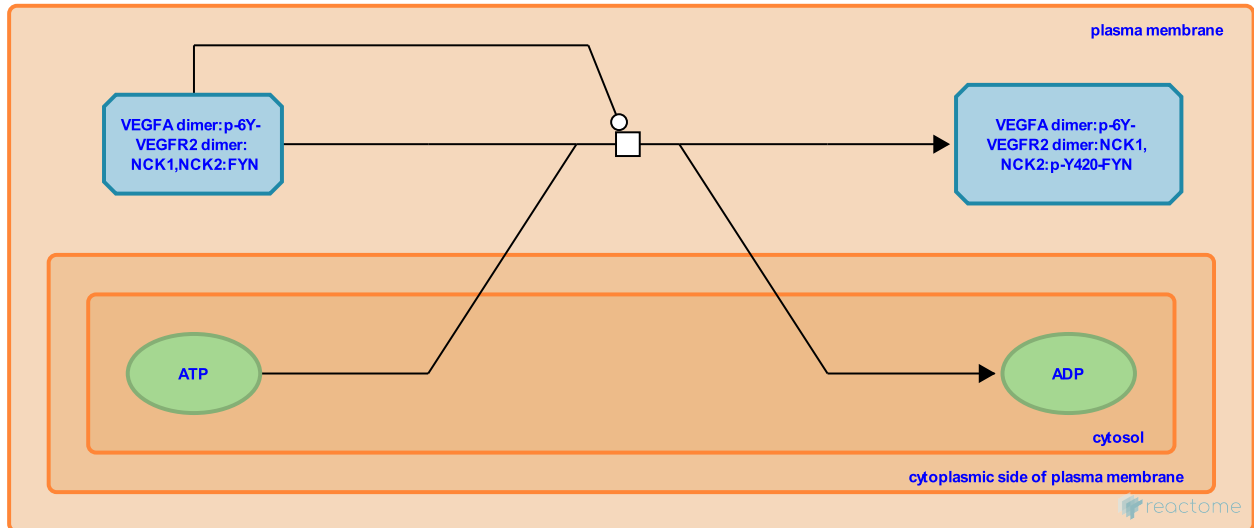
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218806

Type: transition

Compartments: plasma membrane, cytosol

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

Preceded by: p-6Y-VEGFR2 binds FYN

Followed by: p-Y420-FYN is phosphorylated on S21

p-Y420-FYN is phosphorylated on S21 ↗

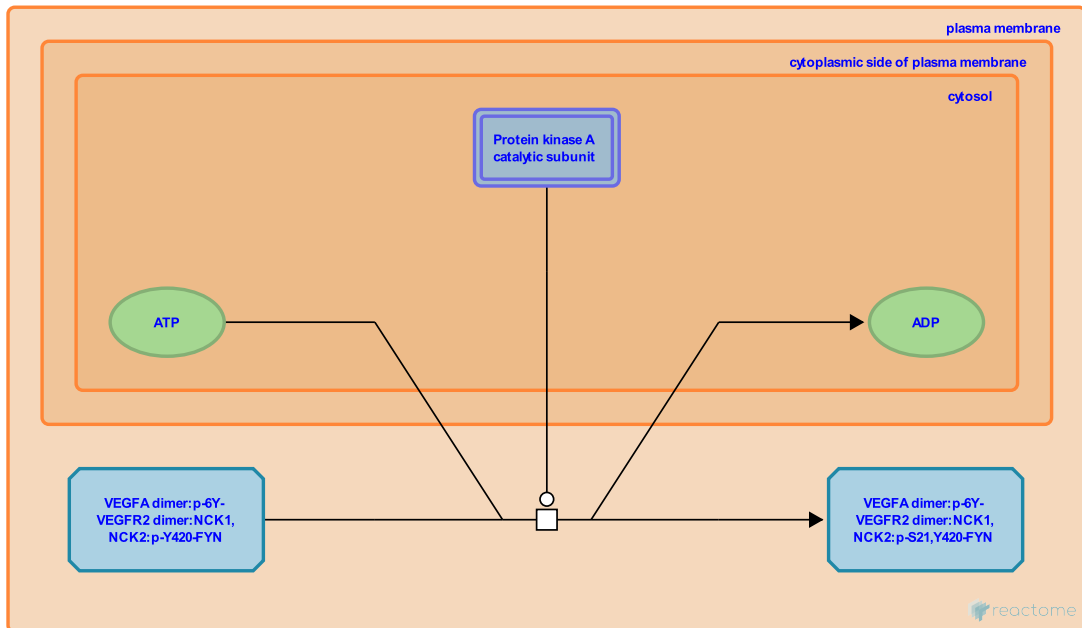
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218854

Type: transition

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: p-Y420-FYN is phosphorylated on S21 (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: FYN autophosphorylates

Followed by: PAK2 binds NCK

PAK2 binds NCK ↗

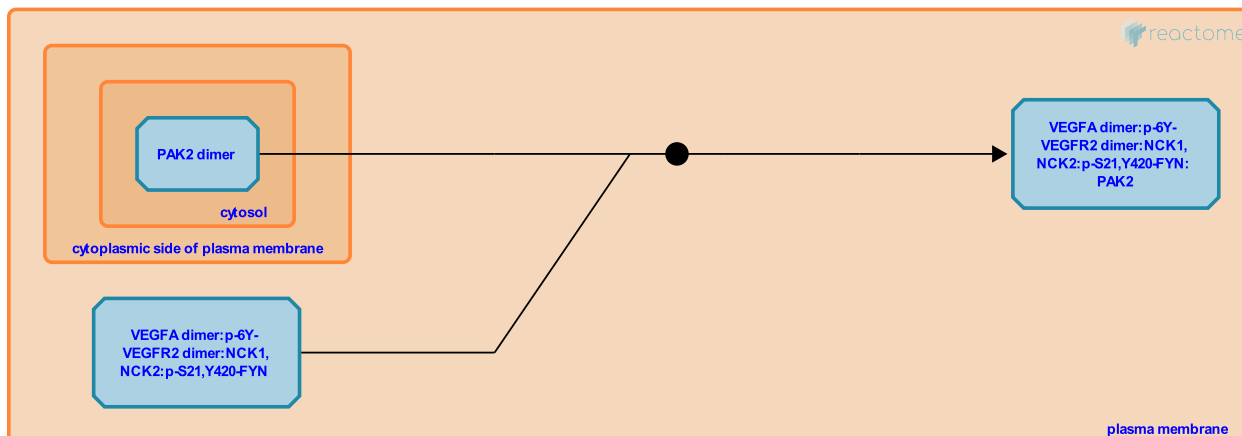
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218847

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: PAK2 binds NCK (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: p-Y420-FYN is phosphorylated on S21

Followed by: CDC42:GTP binds PAK2

CDC42:GTP binds PAK2 ↗

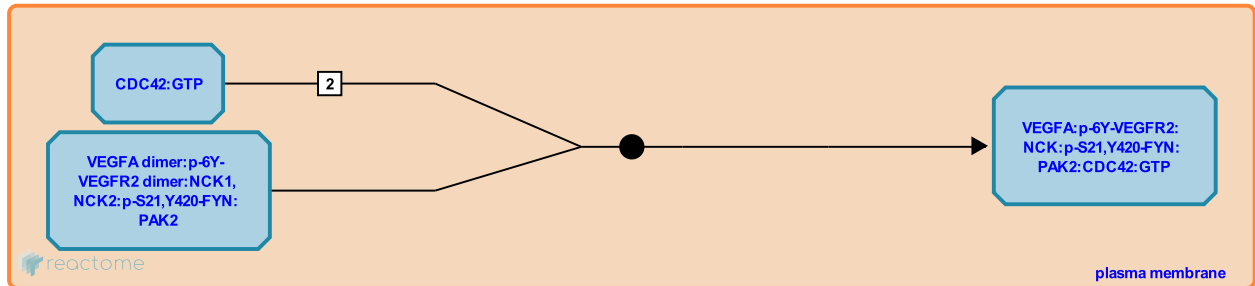
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218832

Type: binding

Compartments: plasma membrane

Inferred from: [CDC42:GTP binds PAK2 \(Homo sapiens\)](#)



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: [PAK2 binds NCK](#)

Followed by: [PAK2 autophosphorylates](#)

PAK2 autophosphorylates ↗

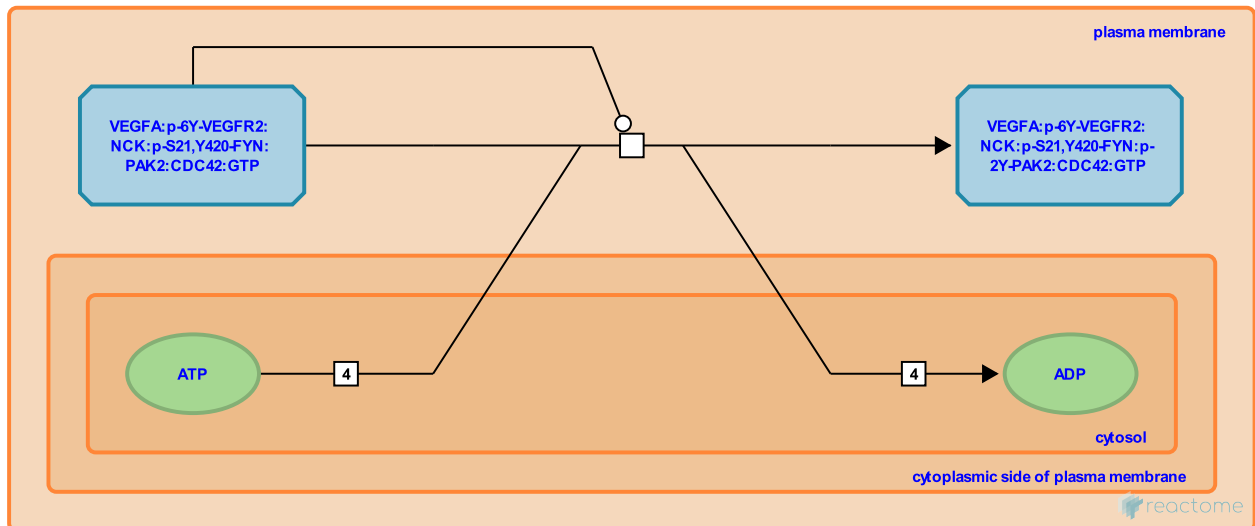
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218814

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: [PAK2 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: [CDC42:GTP binds PAK2](#)

Followed by: [FYN phosphorylates PAK2](#)

FYN phosphorylates PAK2 ↗

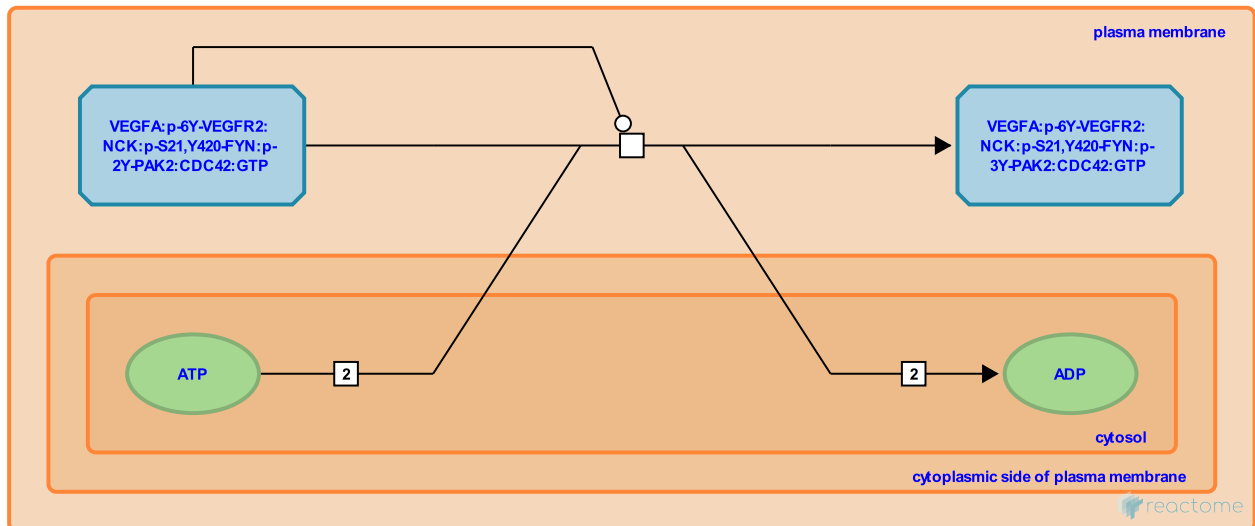
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218812

Type: transition

Compartments: plasma membrane, cytosol

Inferred from: FYN phosphorylates PAK2 (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: PAK2 autophosphorylates

Followed by: p38 MAPK activation by VEGFR

p38 MAPK activation by VEGFR ↗

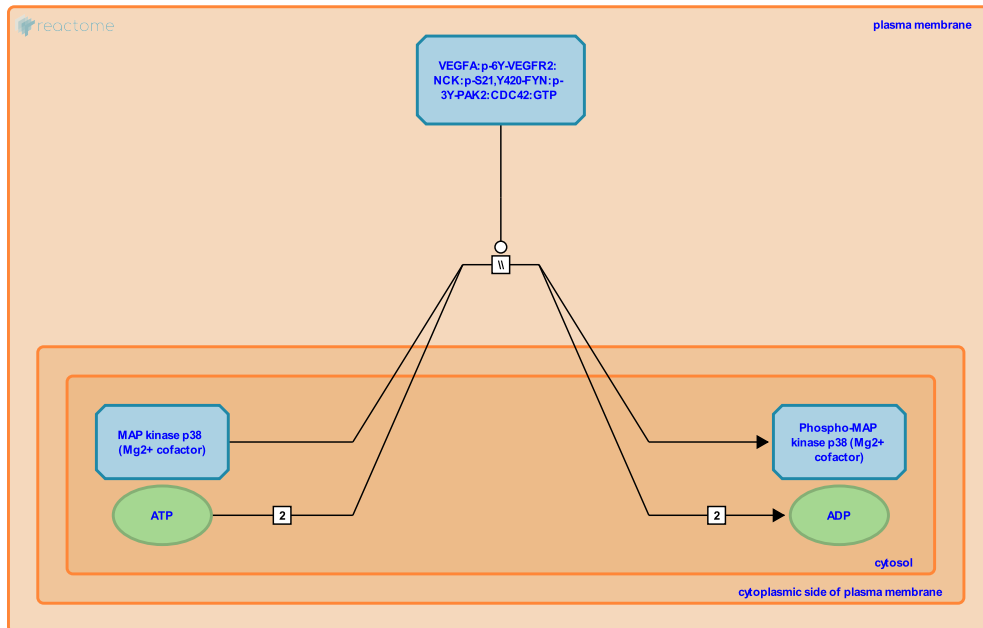
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218804

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: p38 MAPK activation by VEGFR (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: FYN phosphorylates PAK2

Followed by: p38 MAPK phosphorylates MAPKAPK2, MAPKAPK3

p38 MAPK phosphorylates MAPKAPK2, MAPKAPK3 ↗

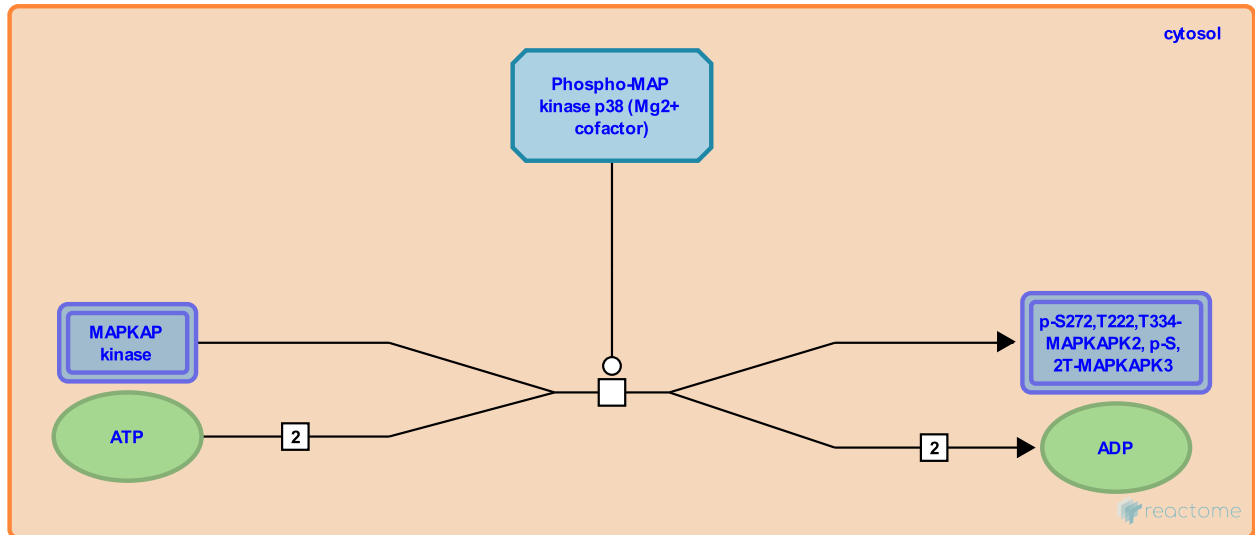
Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-187688

Type: transition

Compartments: cytosol

Inferred from: [p38 MAPK phosphorylates MAPKAPK2, MAPKAPK3 \(Homo sapiens\)](#)



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: [p38 MAPK activation by VEGFR](#)

Followed by: [p-MAPK2/3 phosphorylates HSP27](#)

p-MAPK2/3 phosphorylates HSP27 ↗

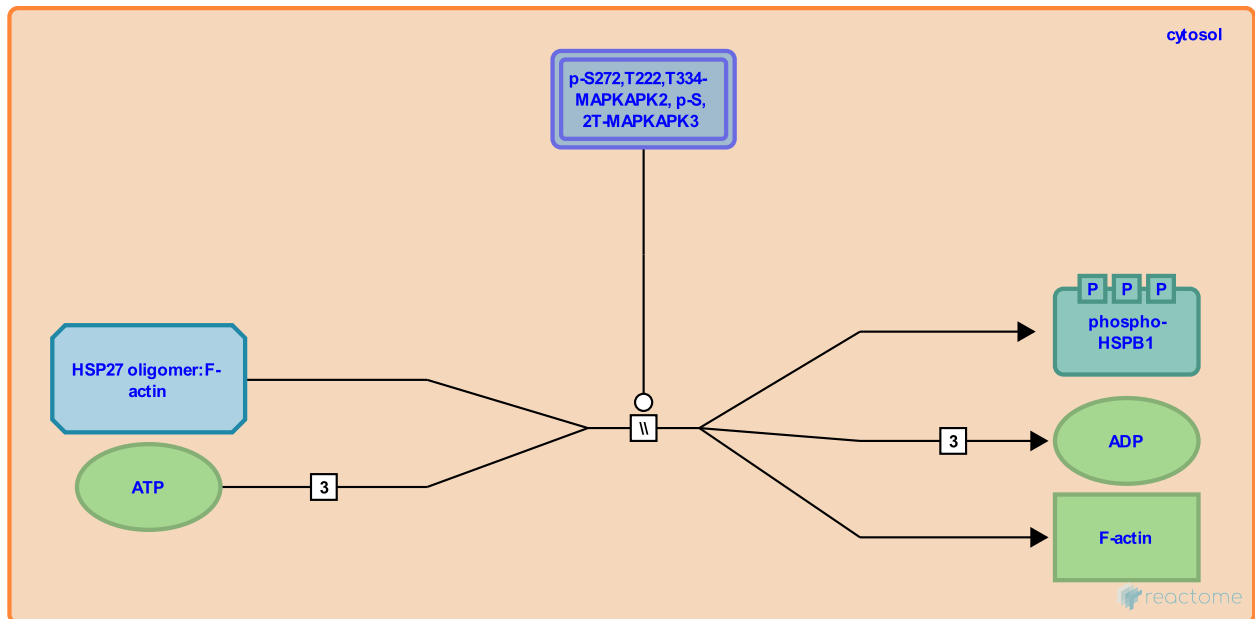
Location: VEGFA-VEGFR2 Pathway

Stable identifier: R-BTA-5218916

Type: omitted

Compartments: cytosol

Inferred from: p-MAPK2/3 phosphorylates HSP27 (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: p38 MAPK phosphorylates MAPKAPK2, MAPKAPK3

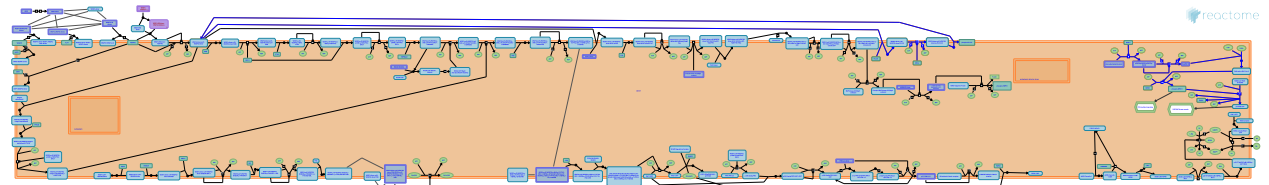
VEGFR2 mediated cell proliferation [↗](#)

Location: [VEGFA-VEGFR2 Pathway](#)

Stable identifier: R-BTA-5218921

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [VEGFR2 mediated cell proliferation \(Homo sapiens\)](#)



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>

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