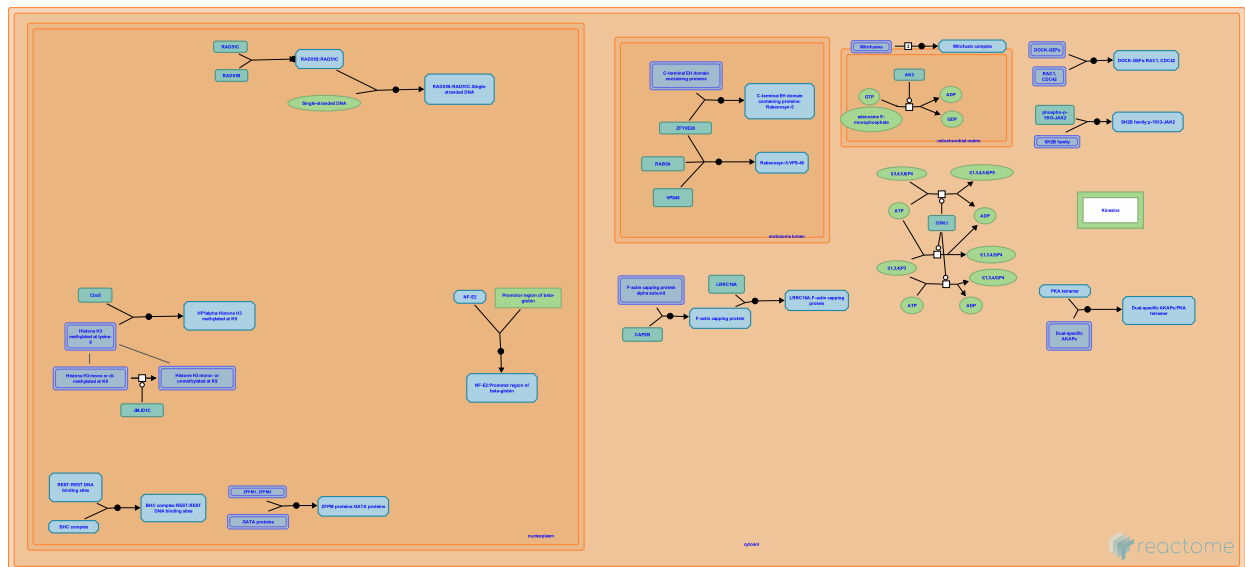


Factors involved in megakaryocyte development and platelet production



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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- 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. [↗](#)

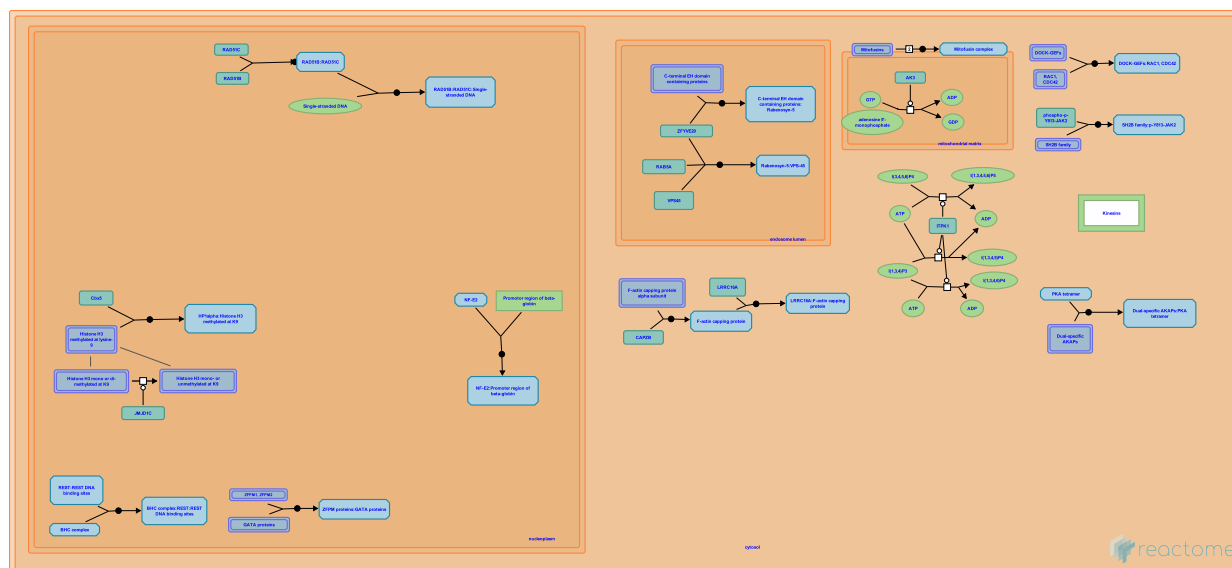
Reactome database release: 69

This document contains 2 pathways and 19 reactions ([see Table of Contents](#))

Factors involved in megakaryocyte development and platelet production ↗

Stable identifier: R-MMU-983231

Inferred from: Factors involved in megakaryocyte development and platelet production (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>

RAD51B binds RAD51C ↗

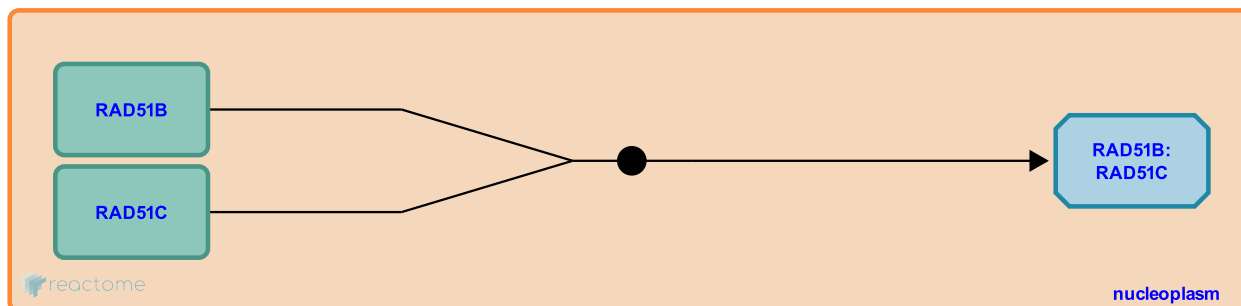
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-983285

Type: binding

Compartments: nucleoplasm

Inferred from: [RAD51B binds RAD51C \(Homo sapiens\)](#)



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: [RAD51B:RAD51C binds single-stranded DNA](#)

RAD51B:RAD51C binds single-stranded DNA ↗

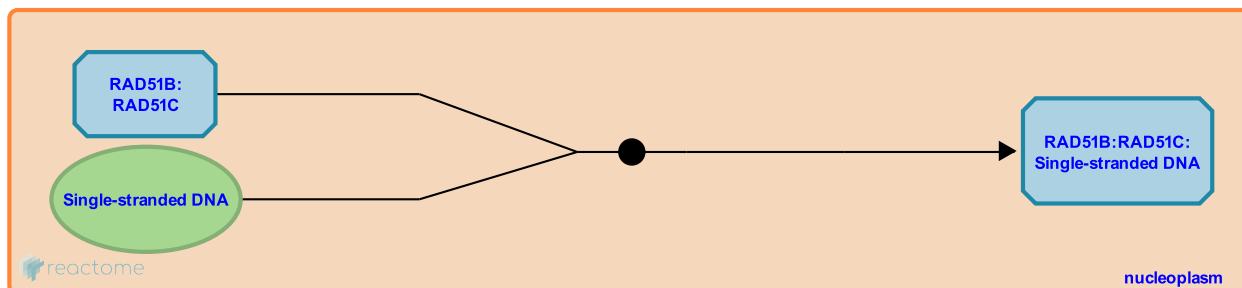
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-983218

Type: binding

Compartments: nucleoplasm

Inferred from: [RAD51B:RAD51C binds single-stranded DNA \(Homo sapiens\)](#)



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: [RAD51B binds RAD51C](#)

Dual-specific AKAPs bind type I and II PKA regulatory subunits ↗

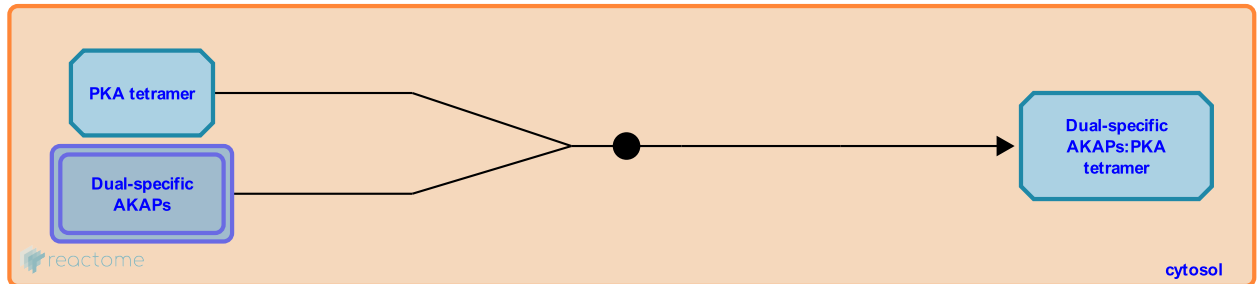
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-992708

Type: binding

Compartments: cytosol

Inferred from: [Dual-specific AKAPs bind type I and II PKA regulatory subunits \(Homo sapiens\)](#)



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>

Mitofusins trans-interact linking mitochondria prior to fusion ↗

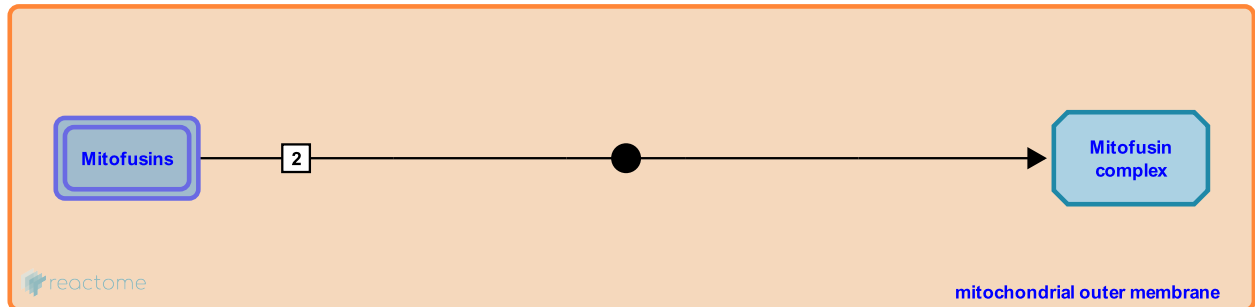
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-992703

Type: binding

Compartments: mitochondrial outer membrane

Inferred from: [Mitofusins trans-interact linking mitochondria prior to fusion \(Homo sapiens\)](#)



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>

HP1 alpha binds Histone H3K9(me)3 [↗](#)

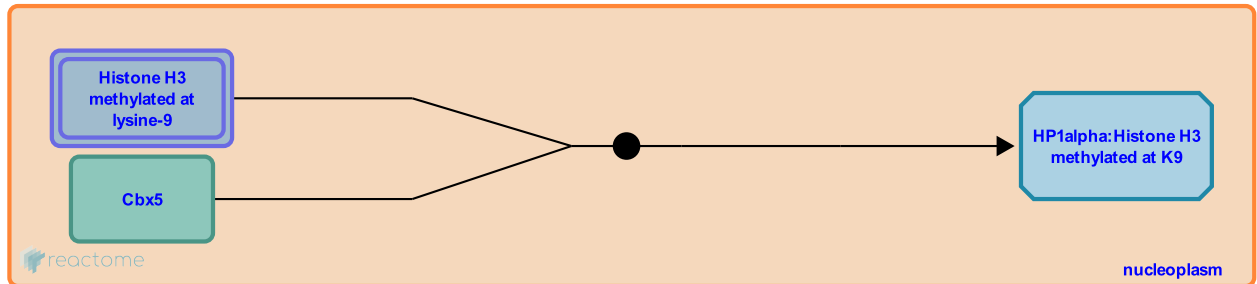
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-994106

Type: binding

Compartments: nucleoplasm

Inferred from: [HP1 alpha binds Histone H3K9\(me\)3 \(Homo sapiens\)](#)



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>

ITPK1 converts Ins-3,4,5,6-P4 to Ins-1,3,4,5,6-P5 ↗

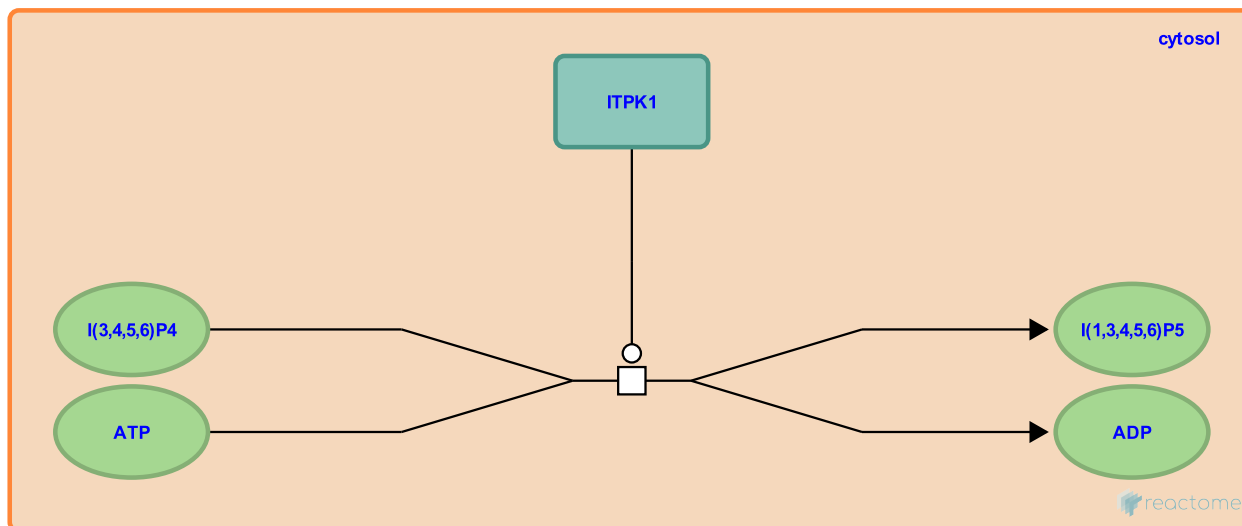
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-994137

Type: transition

Compartments: cytosol

Inferred from: [ITPK1 converts Ins-3,4,5,6-P4 to Ins-1,3,4,5,6-P5 \(Homo sapiens\)](#)



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>

ITPK1 converts Ins-1,3,4-P3 to Ins-1,3,4,5-P4 ↗

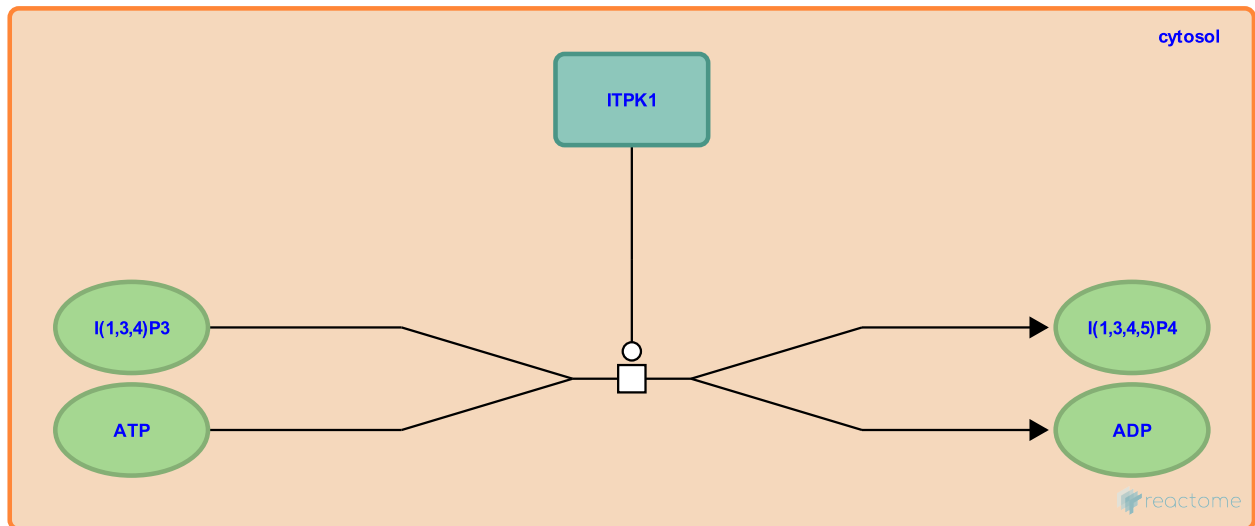
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-994140

Type: transition

Compartments: cytosol

Inferred from: [ITPK1 converts Ins-1,3,4-P3 to Ins-1,3,4,5-P4 \(Homo sapiens\)](#)



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>

ITPK1 converts Ins-1,3,4-P3 to Ins-1,3,4,6-P4 ↗

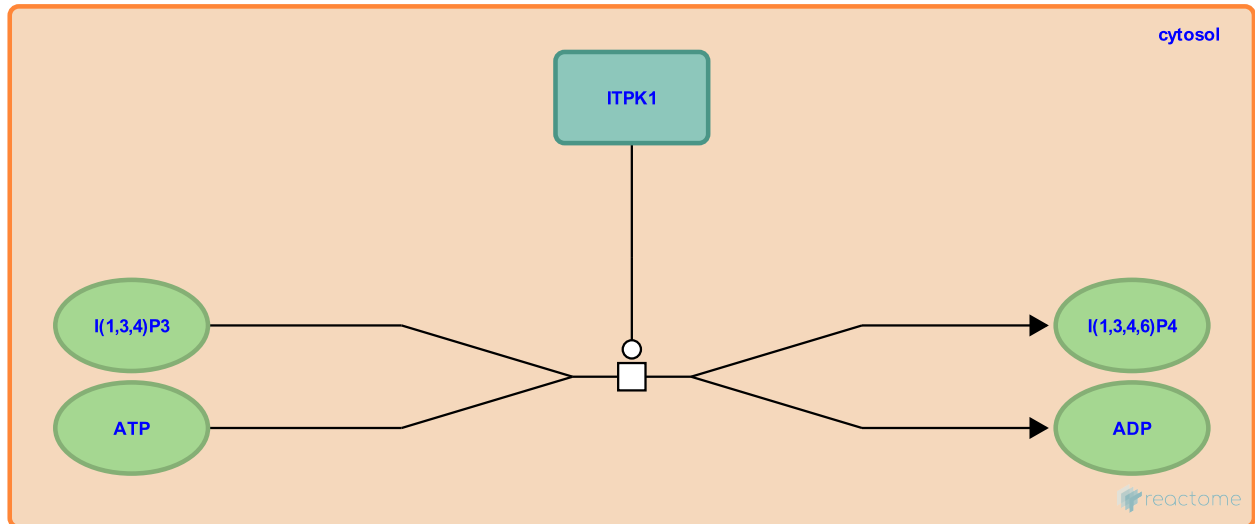
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-2267372

Type: transition

Compartments: cytosol

Inferred from: [ITPK1 converts Ins-1,3,4-P3 to Ins-1,3,4,6-P4 \(Homo sapiens\)](#)



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>

LRRC16A binds F-actin capping protein ↗

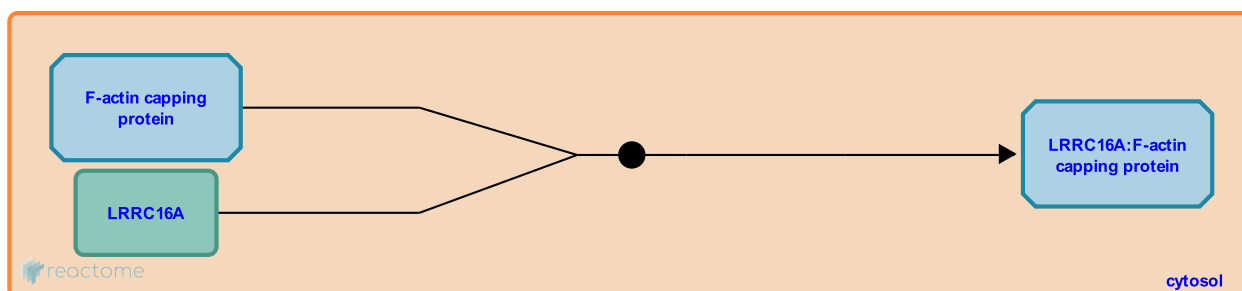
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-994148

Type: binding

Compartments: cytosol

Inferred from: [LRRC16A binds F-actin capping protein \(Homo sapiens\)](#)



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: [F-actin capping protein is a heterodimer](#)

F-actin capping protein is a heterodimer ↗

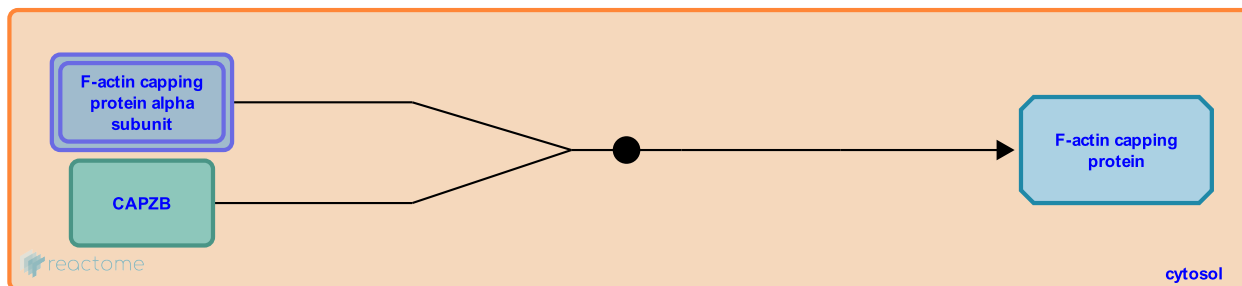
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-879459

Type: binding

Compartments: cytosol

Inferred from: [F-actin capping protein is a heterodimer \(Homo sapiens\)](#)



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: [LRRC16A binds F-actin capping protein](#)

REST recruits the BHC complex ↗

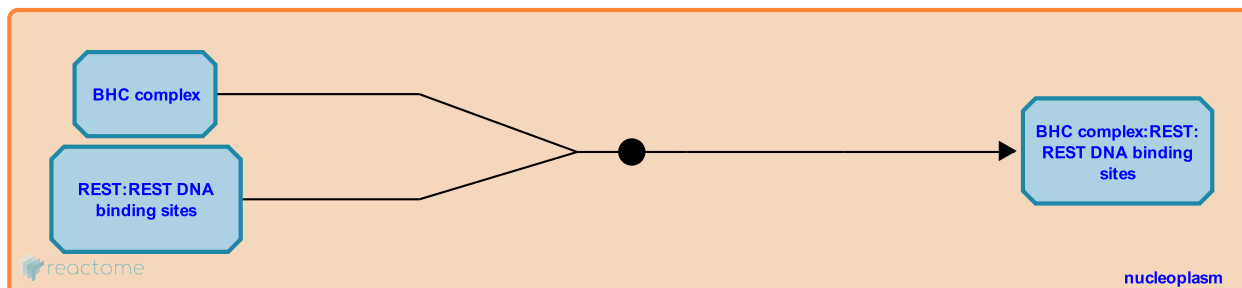
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-996727

Type: binding

Compartments: nucleoplasm

Inferred from: [REST recruits the BHC complex \(Homo sapiens\)](#)



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>

ZFPM proteins bind GATA proteins ↗

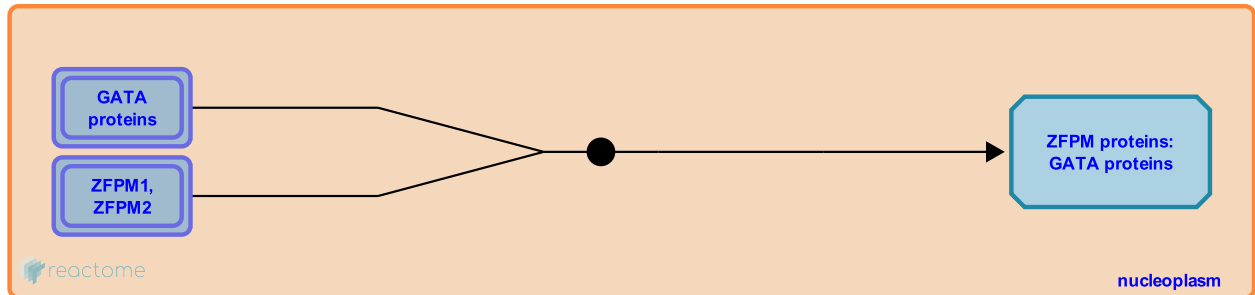
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-996755

Type: binding

Compartments: nucleoplasm

Inferred from: [ZFPM proteins bind GATA 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>

JMJD1C demethylates H3K9 mono- and di-methylation ↗

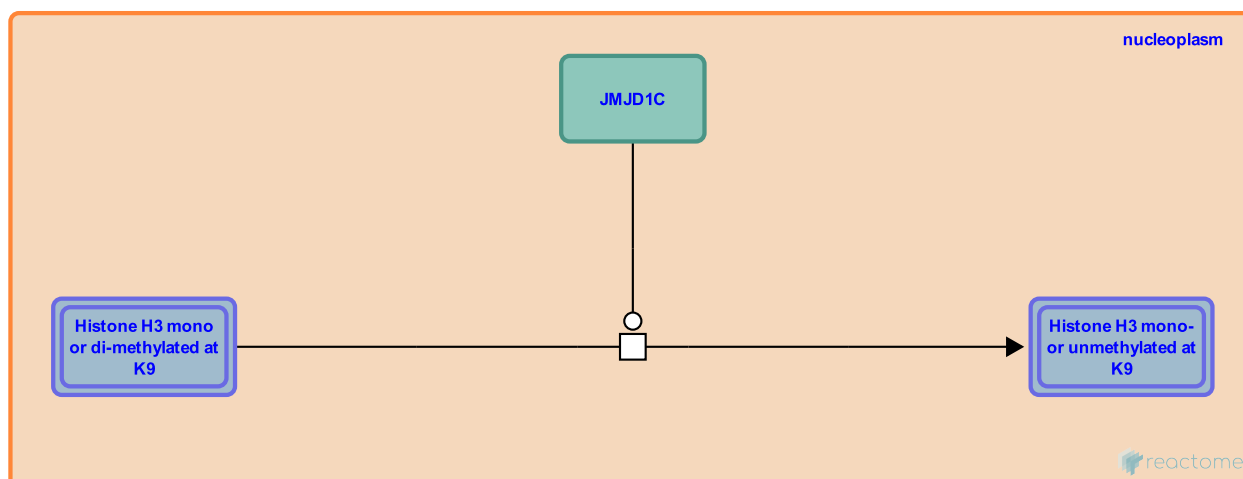
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-997263

Type: transition

Compartments: nucleoplasm

Inferred from: [JMJD1C demethylates H3K9 mono- and di-methylation \(Homo sapiens\)](#)



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>

SH2B proteins bind JAK2 ↗

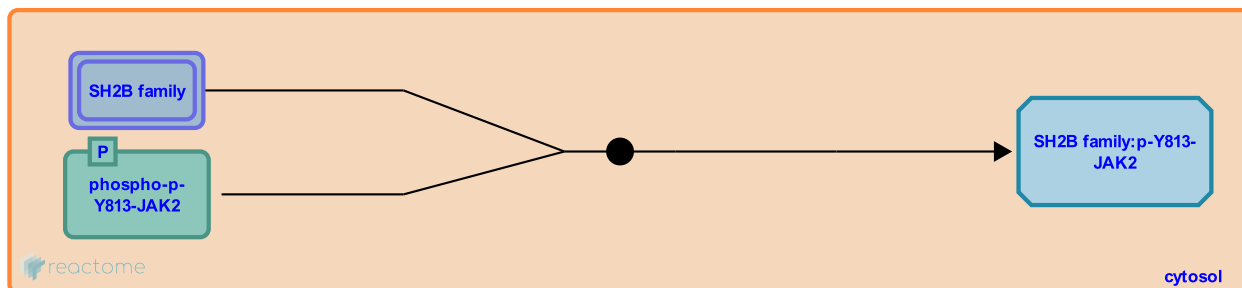
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-997237

Type: binding

Compartments: cytosol

Inferred from: [SH2B proteins bind JAK2 \(Homo sapiens\)](#)



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>

Adenylate Kinase 3 is a GTP-AMP phosphotransferase ↗

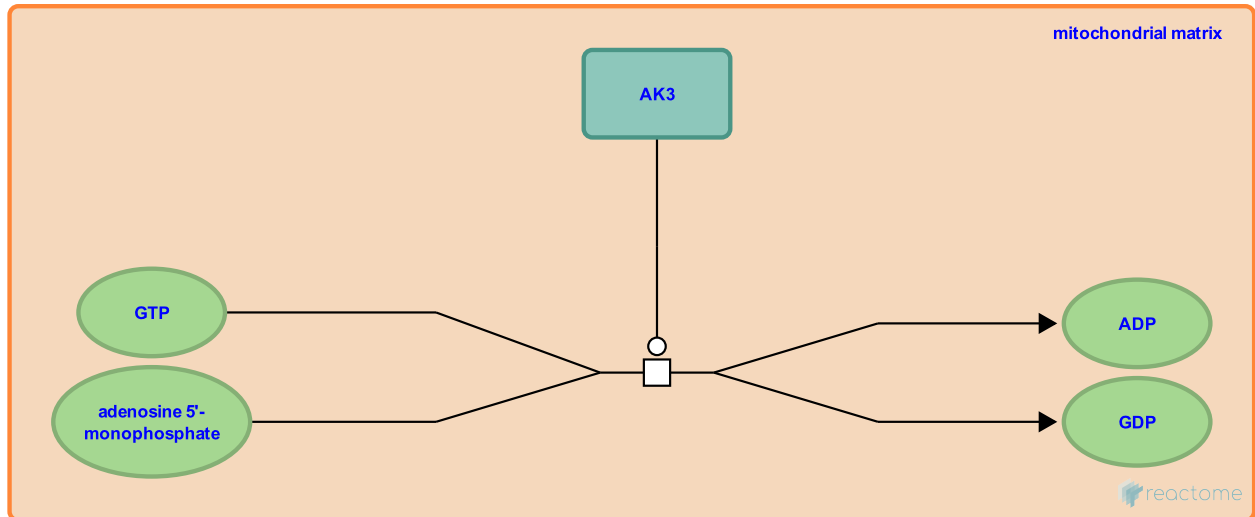
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-1008248

Type: transition

Compartments: mitochondrial matrix

Inferred from: [Adenylate Kinase 3 is a GTP-AMP phosphotransferase \(Homo sapiens\)](#)



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>

NFE2 binds the beta globin locus control region ↗

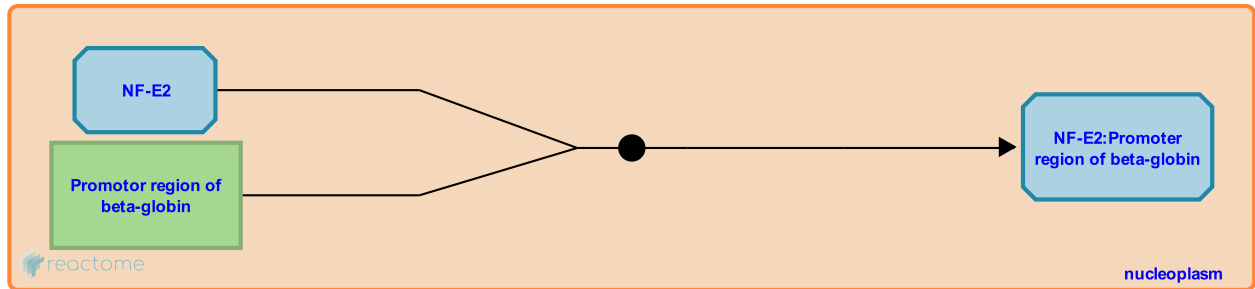
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-1008200

Type: binding

Compartments: nucleoplasm

Inferred from: [NFE2 binds the beta globin locus control region \(Homo sapiens\)](#)



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>

EHD proteins interact with Rabenosyn-5 ↗

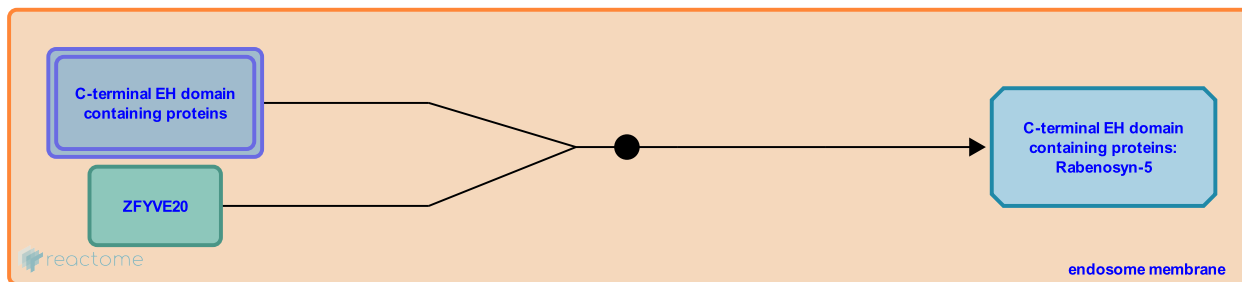
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-1011576

Type: binding

Compartments: endosome membrane

Inferred from: [EHD proteins interact with Rabenosyn-5 \(Homo sapiens\)](#)



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: [Rabenosyn-5 connects Rab5 to VPS-45](#)

Rabenosyn-5 connects Rab5 to VPS-45 ↗

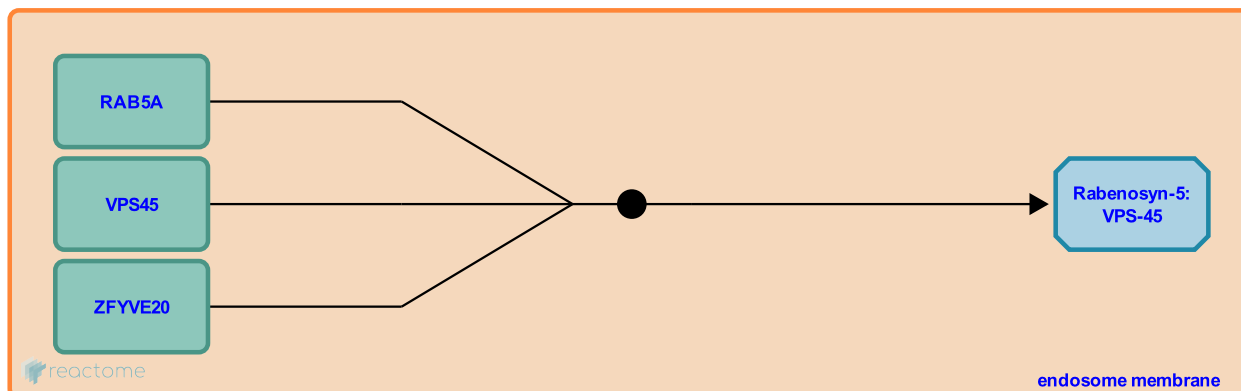
Location: [Factors involved in megakaryocyte development and platelet production](#)

Stable identifier: R-MMU-1011600

Type: binding

Compartments: endosome membrane

Inferred from: [Rabenosyn-5 connects Rab5 to VPS-45 \(Homo sapiens\)](#)



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: [EHD proteins interact with Rabenosyn-5](#)

DOCKs bind to RhoGEFs ↗

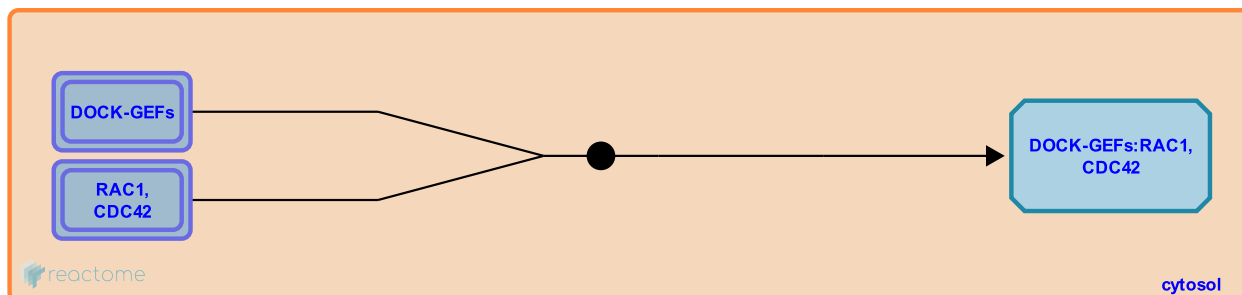
Location: Factors involved in megakaryocyte development and platelet production

Stable identifier: R-MMU-1011598

Type: binding

Compartments: cytosol

Inferred from: [DOCKs bind to 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>

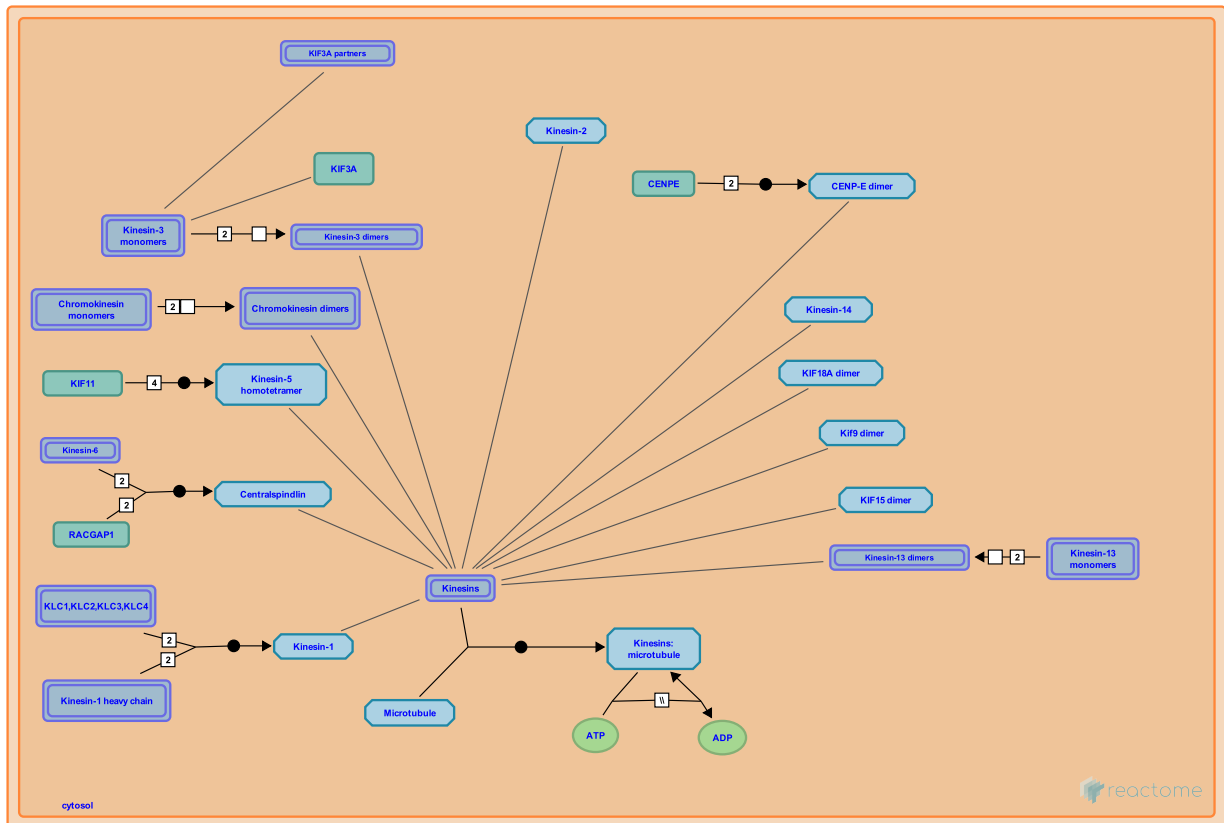
Kinesins ↗

Location: Factors involved in megakaryocyte development and platelet production

Stable identifier: R-MMU-983189

Compartments: cytosol

Inferred from: Kinesins (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>

Table of Contents

Introduction	1
☰ Factors involved in megakaryocyte development and platelet production	2
↪ RAD51B binds RAD51C	3
↪ RAD51B:RAD51C binds single-stranded DNA	4
↪ Dual-specific AKAPs bind type I and II PKA regulatory subunits	5
↪ Mitofusins trans-interact linking mitochondria prior to fusion	6
↪ HP1 alpha binds Histone H3K9(me)3	7
↪ ITPK1 converts Ins-3,4,5,6-P4 to Ins-1,3,4,5,6-P5	8
↪ ITPK1 converts Ins-1,3,4-P3 to Ins-1,3,4,5-P4	9
↪ ITPK1 converts Ins-1,3,4-P3 to Ins-1,3,4,6-P4	10
↪ LRRC16A binds F-actin capping protein	11
↪ F-actin capping protein is a heterodimer	12
↪ REST recruits the BHC complex	13
↪ ZFPM proteins bind GATA proteins	14
↪ JMJD1C demethylates H3K9 mono- and di-methylation	15
↪ SH2B proteins bind JAK2	16
↪ Adenylate Kinase 3 is a GTP-AMP phosphotransferase	17
↪ NFE2 binds the beta globin locus control region	18
↪ EHD proteins interact with Rabenosyn-5	19
↪ Rabenosyn-5 connects Rab5 to VPS-45	20
↪ DOCKs bind to RhoGEFs	21
☰ Kinesins	22
Table of Contents	23