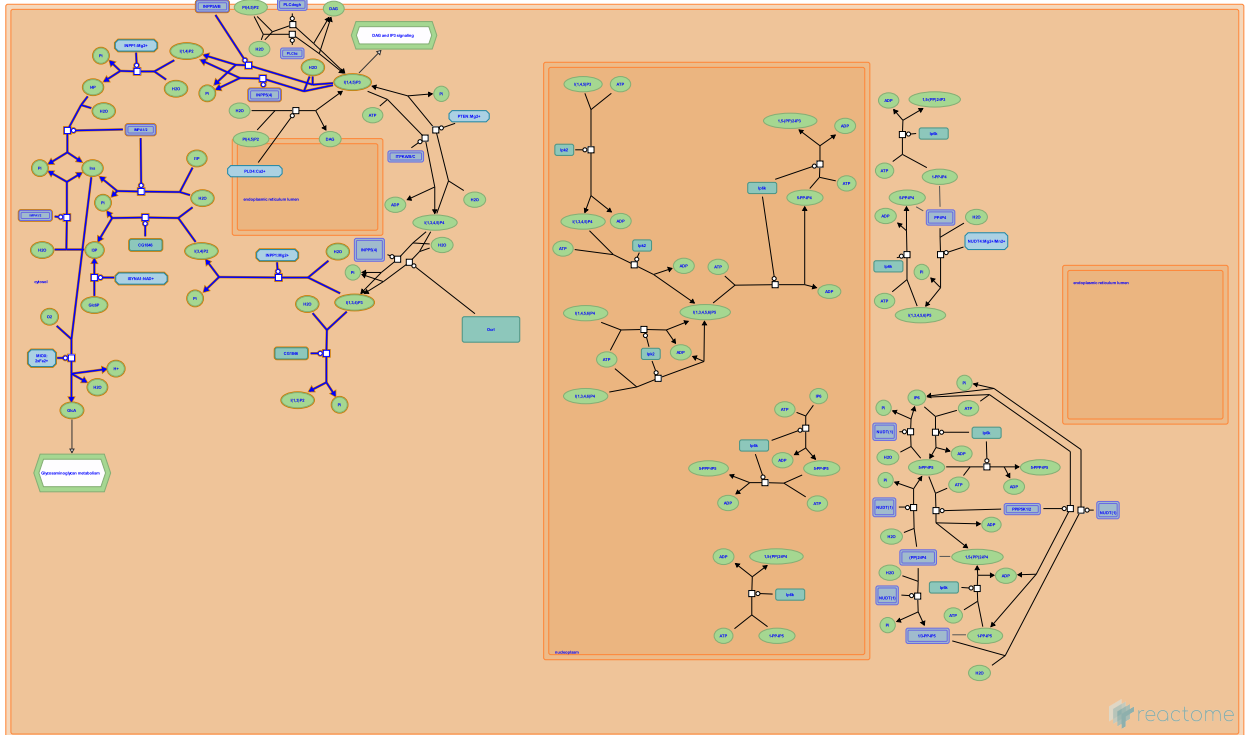


# Synthesis of IP2, IP, and Ins in the cytosol



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This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the [Reactome Textbook](https://reactome.org/textbook/).

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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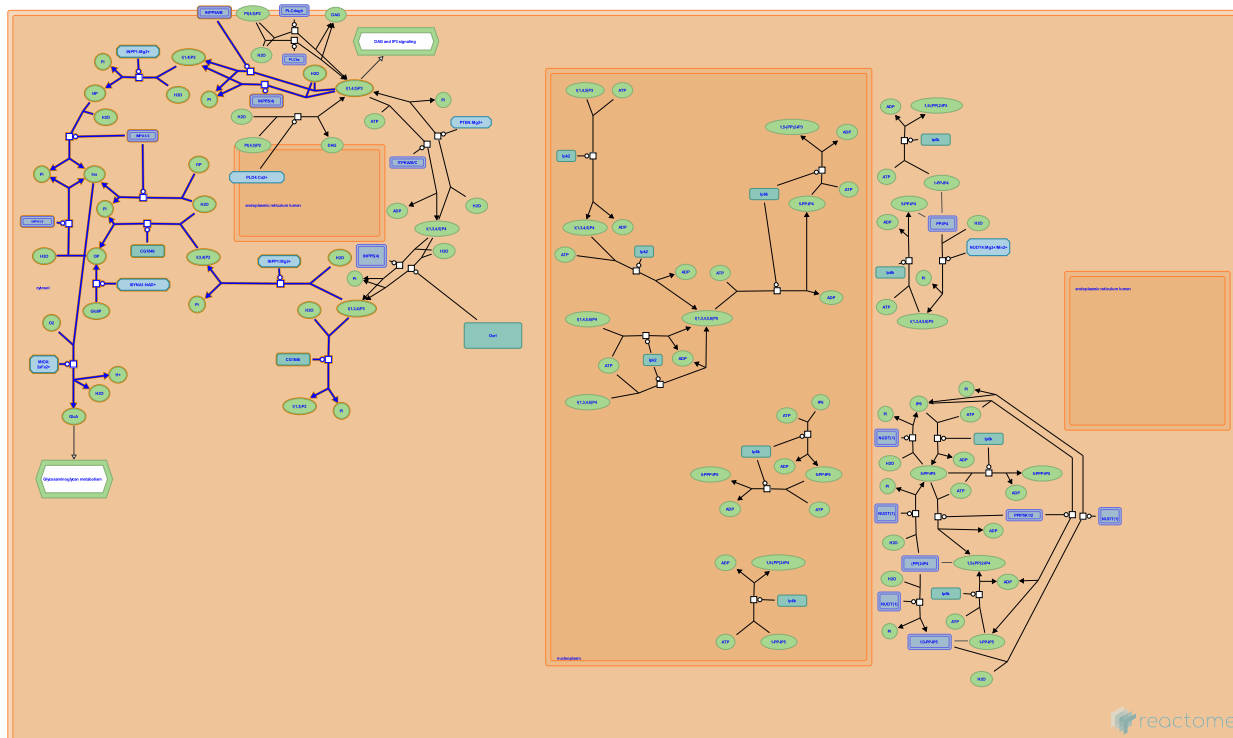
Reactome database release: 88

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

## Synthesis of IP2, IP, and Ins in the cytosol ↗

**Stable identifier:** R-DME-1855183

**Inferred from:** [Synthesis of IP2, IP, and Ins in the cytosol \(Homo sapiens\)](#)



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>

## I(1,4,5)P3 is dephosphorylated to I(1,4)P2 by INPP5(4) in the cytosol ↗

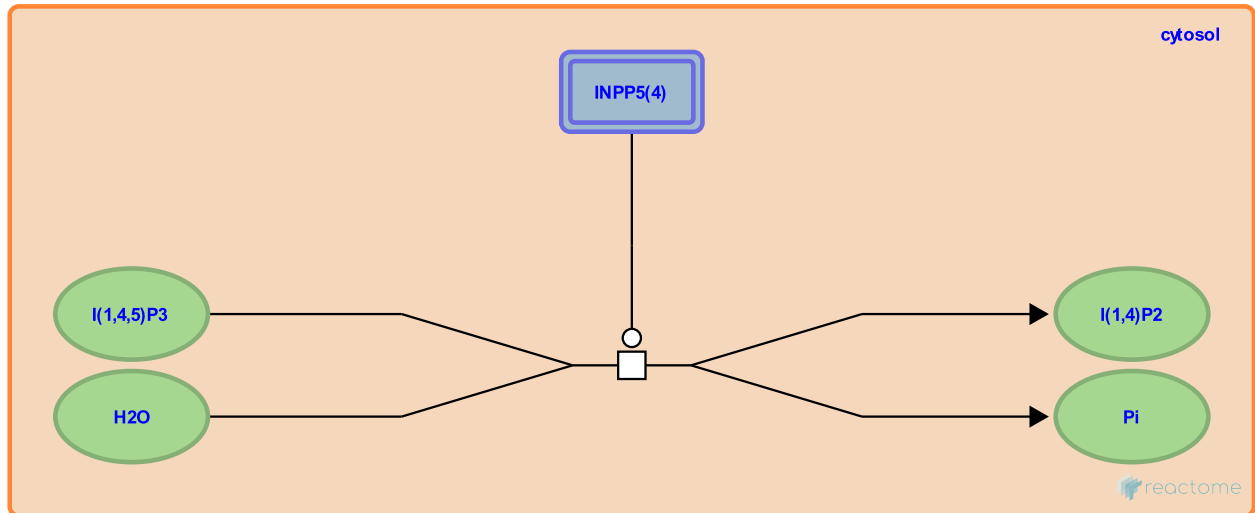
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-1855174

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [I\(1,4,5\)P3 is dephosphorylated to I\(1,4\)P2 by INPP5\(4\) in the cytosol \(Homo sapiens\)](#)



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:** [I\(1,4\)P2 is dephosphorylated to I4P by INPP1 in the cytosol](#)

## I(1,4,5)P3 is dephosphorylated to I(1,4)P2 by INPP5A/B at the plasma membrane [↗](#)

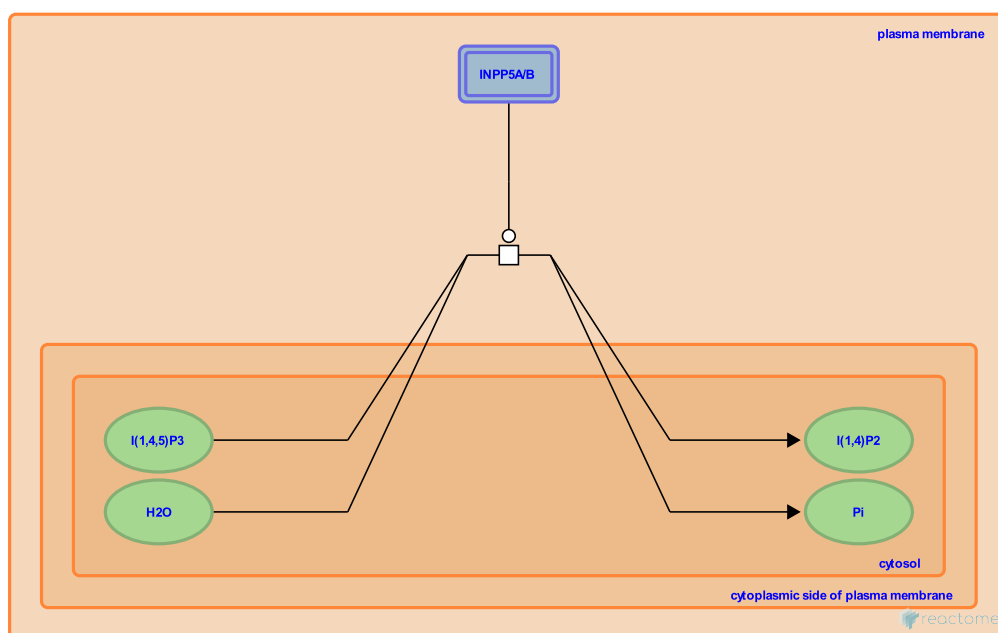
**Location:** Synthesis of IP2, IP, and Ins in the cytosol

**Stable identifier:** R-DME-1855222

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** I(1,4,5)P3 is dephosphorylated to I(1,4)P2 by INPP5A/B at the plasma membrane (Homo sapiens)



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

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

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

**Followed by:** I(1,4)P2 is dephosphorylated to I4P by INPP1 in the cytosol

## I(1,4)P2 is dephosphorylated to I4P by INPP1 in the cytosol ↗

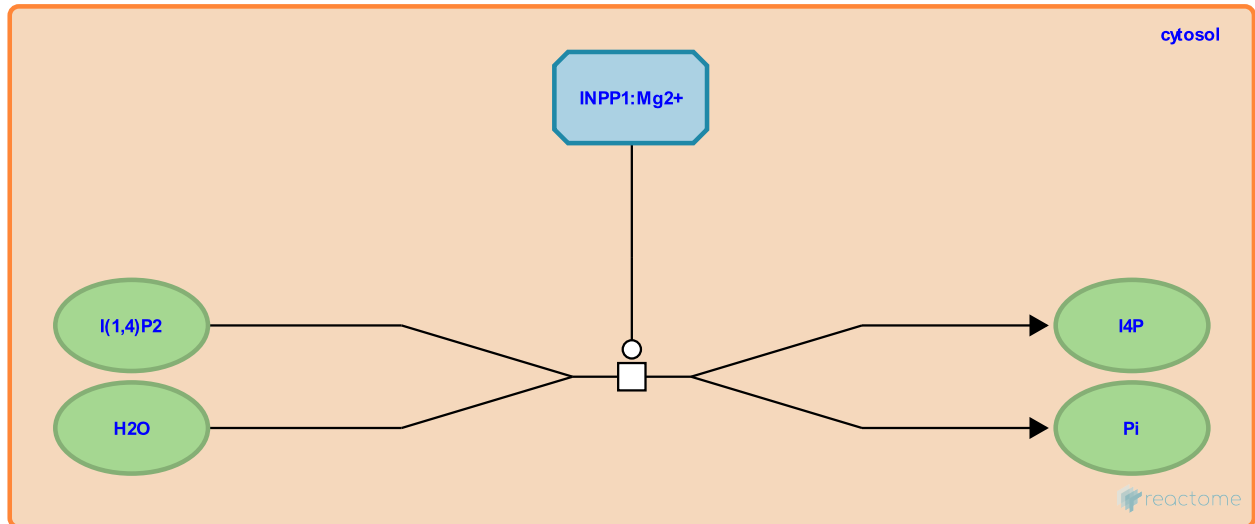
**Location:** Synthesis of IP2, IP, and Ins in the cytosol

**Stable identifier:** R-DME-1855208

**Type:** transition

**Compartments:** cytosol

**Inferred from:** I(1,4)P2 is dephosphorylated to I4P by INPP1 in the cytosol (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:** I(1,4,5)P3 is dephosphorylated to I(1,4)P2 by INPP5(4) in the cytosol, I(1,4,5)P3 is dephosphorylated to I(1,4)P2 by INPP5A/B at the plasma membrane

**Followed by:** I4P is dephosphorylated to Ins by IMPA1/2 in the cytosol

## I4P is dephosphorylated to Ins by IMPA1/2 in the cytosol ↗

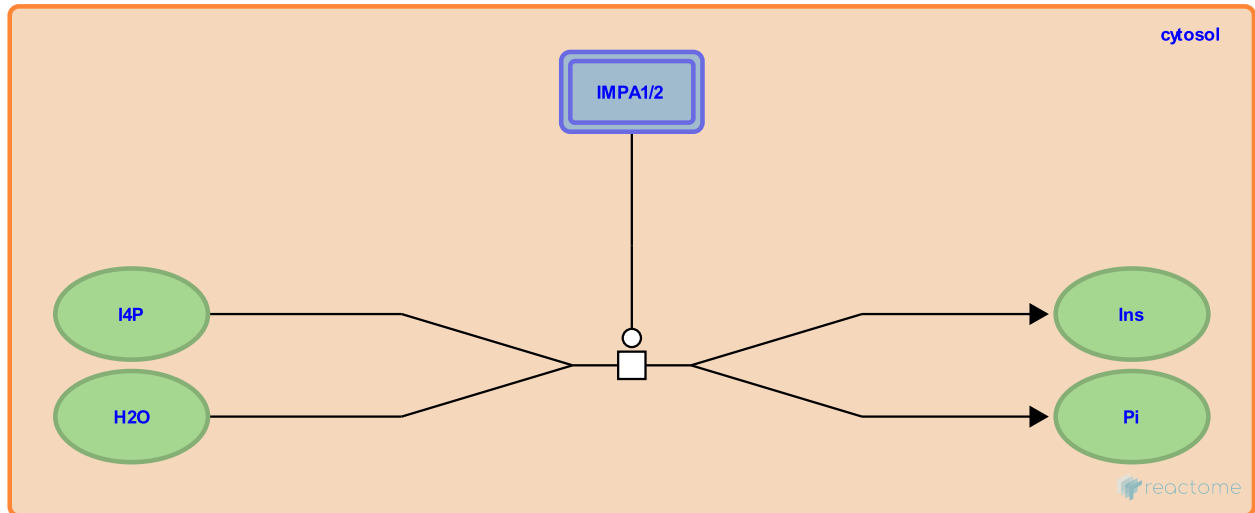
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-1855211

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [I4P is dephosphorylated to Ins by IMPA1/2 in the cytosol \(Homo sapiens\)](#)



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:** [I\(1,4\)P2 is dephosphorylated to I4P by INPP1 in the cytosol](#)

## I1P is dephosphorylated to Ins by IMPA1/2 in the cytosol ↗

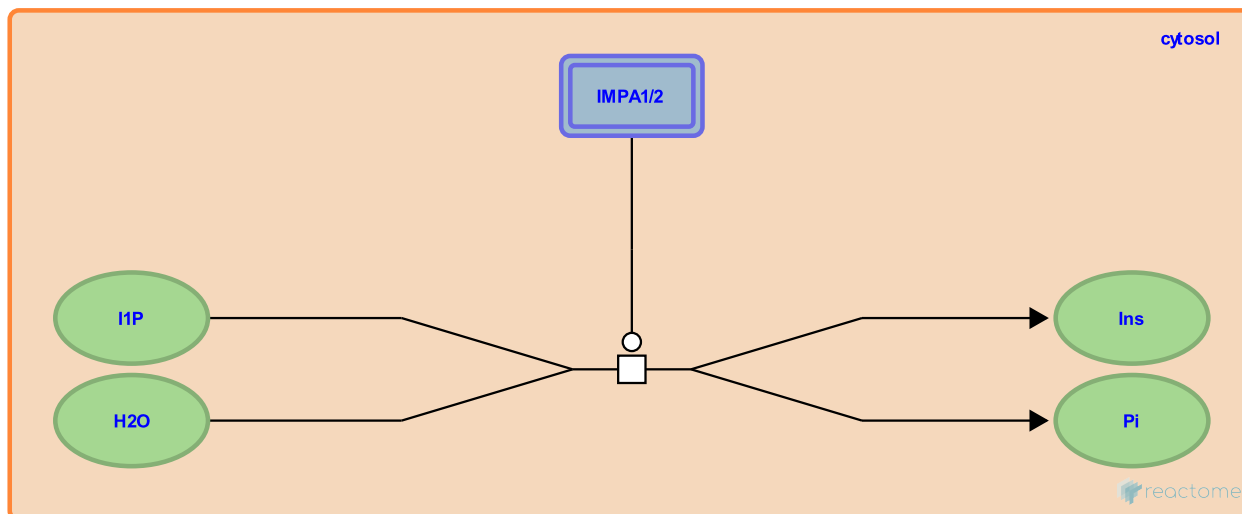
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-1855154

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [I1P is dephosphorylated to Ins by IMPA1/2 in the cytosol \(Homo sapiens\)](#)



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>



## I(1,3,4)P3 is dephosphorylated to I(1,3)P2 by INPP4A/B in the cytosol ↗

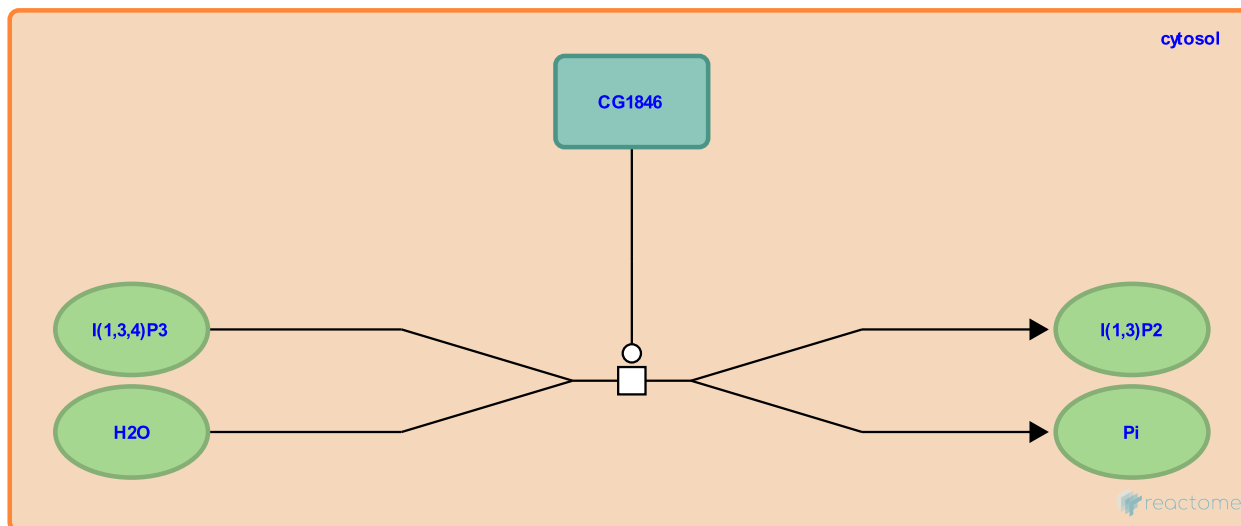
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-1855180

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [I\(1,3,4\)P3 is dephosphorylated to I\(1,3\)P2 by INPP4A/B in the cytosol \(Homo sapiens\)](#)



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>

## I(1,3,4)P3 is dephosphorylated to I(3,4)P2 by INPP1 in the cytosol ↗

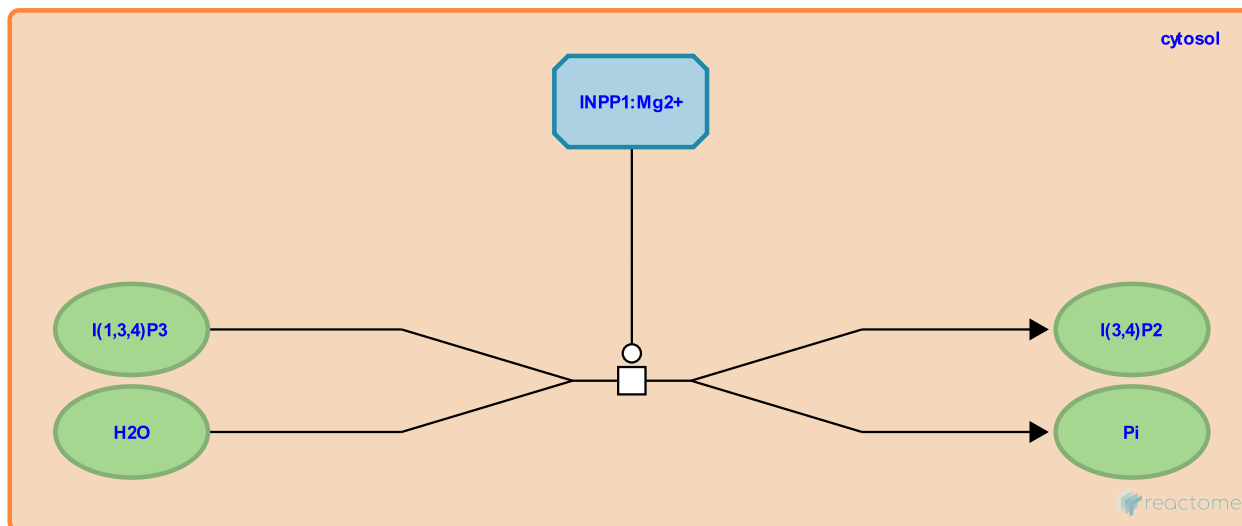
**Location:** Synthesis of IP2, IP, and Ins in the cytosol

**Stable identifier:** R-DME-1855232

**Type:** transition

**Compartments:** cytosol

**Inferred from:** I(1,3,4)P3 is dephosphorylated to I(3,4)P2 by INPP1 in the cytosol (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:** I(3,4)P2 is dephosphorylated to I3P by INPP4A/B in the cytosol

## I(3,4)P2 is dephosphorylated to I3P by INPP4A/B in the cytosol ↗

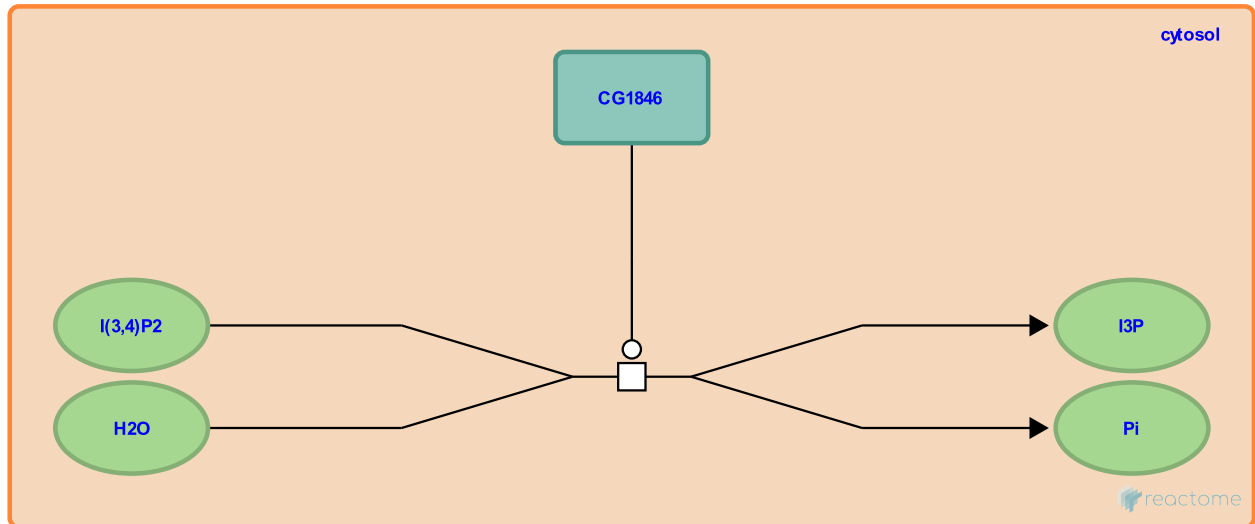
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-1855202

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [I\(3,4\)P2 is dephosphorylated to I3P by INPP4A/B in the cytosol \(Homo sapiens\)](#)



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:** [I\(1,3,4\)P3 is dephosphorylated to I\(3,4\)P2 by INPP1 in the cytosol](#)

**Followed by:** [I3P is dephosphorylated to Ins by IMPA1/2 in the cytosol](#)

## Glc6P is isomerised to I3P by ISYNA1 in the cytosol ↗

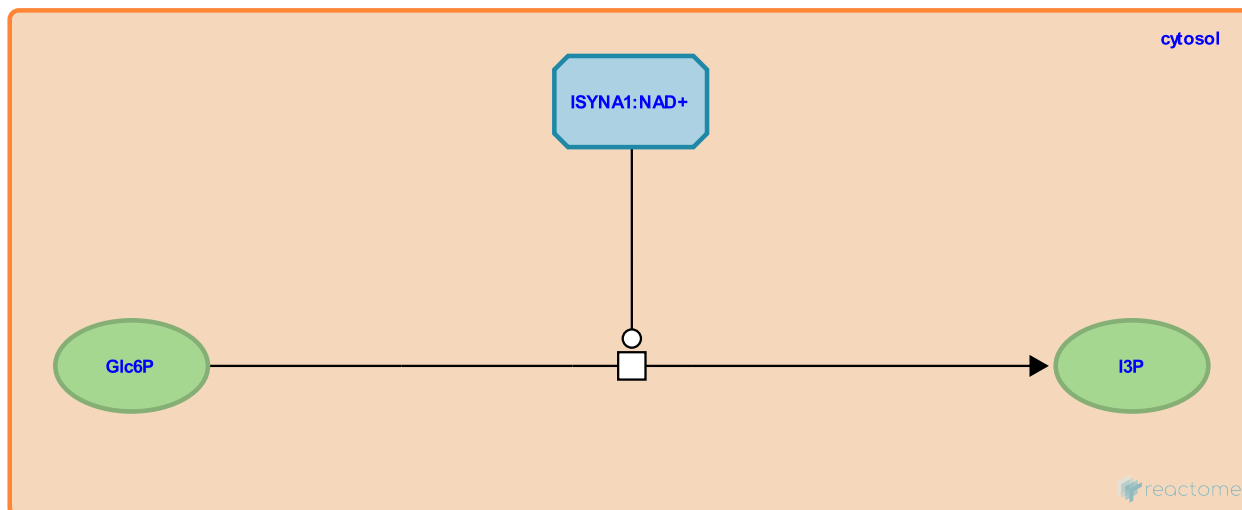
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-1855178

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [Glc6P is isomerised to I3P by ISYNA1 in the cytosol \(Homo sapiens\)](#)



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:** [I3P is dephosphorylated to Ins by IMPA1/2 in the cytosol](#)

## I3P is dephosphorylated to Ins by IMPA1/2 in the cytosol ↗

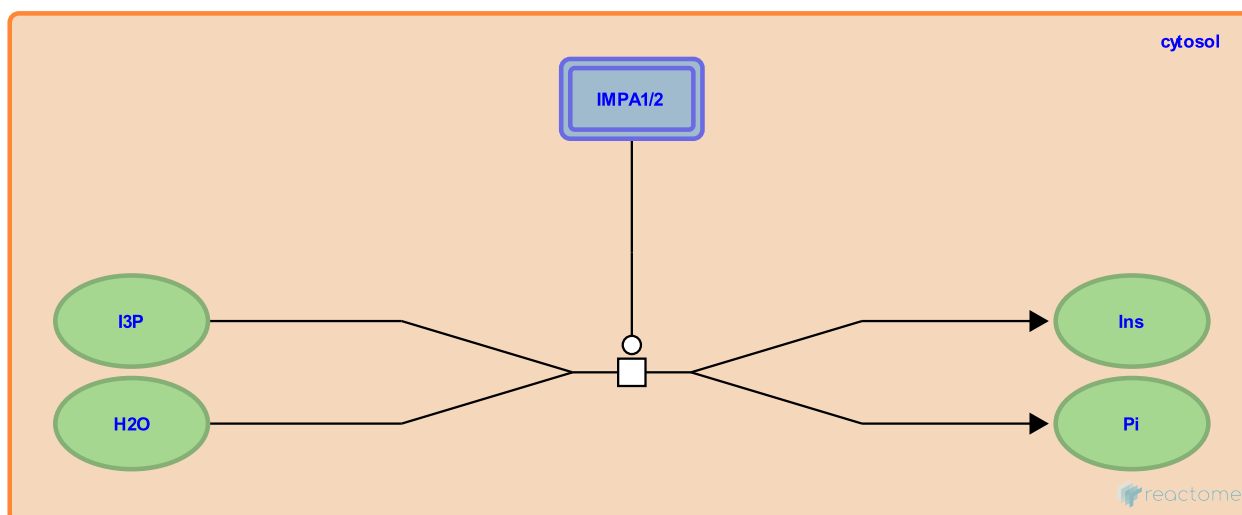
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-1855210

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [I3P is dephosphorylated to Ins by IMPA1/2 in the cytosol \(Homo sapiens\)](#)



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:** [Glc6P is isomerised to I3P by ISYNA1 in the cytosol](#), [I\(3,4\)P2 is dephosphorylated to I3P by INPP4A/B in the cytosol](#)

**Followed by:** [MIOX oxidises Ins to GlcA](#)

## MIOX oxidises Ins to GlcA ↗

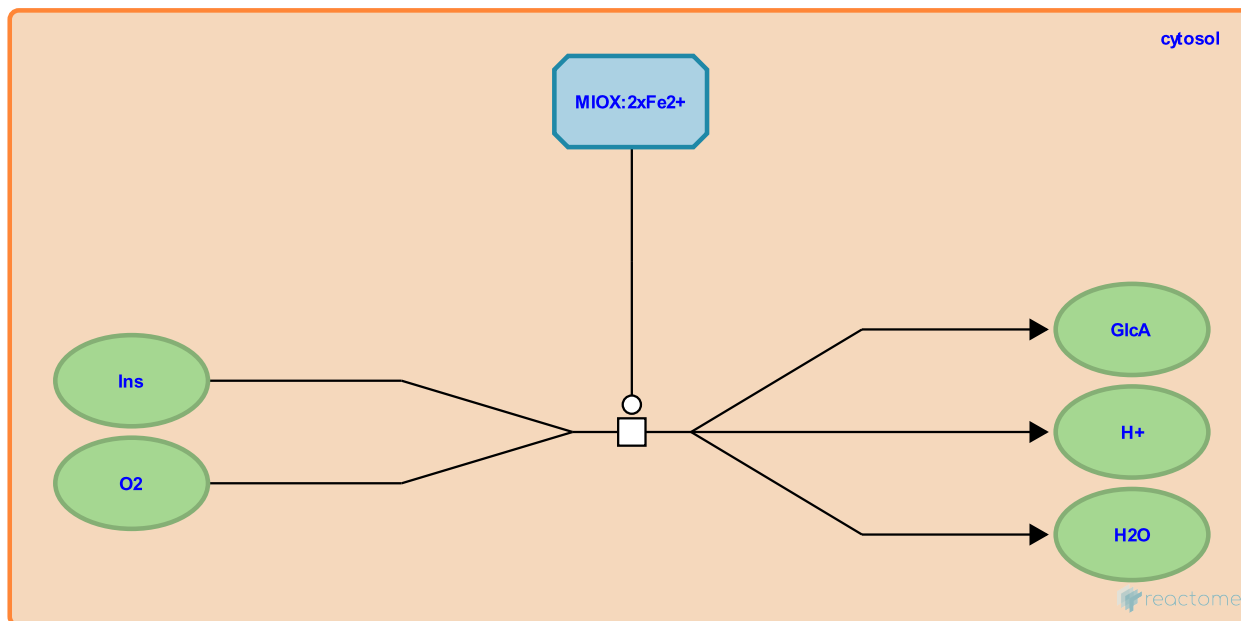
**Location:** [Synthesis of IP2, IP, and Ins in the cytosol](#)

**Stable identifier:** R-DME-5678327

**Type:** transition

**Compartments:** cytosol

**Inferred from:** [MIOX oxidises Ins to GlcA \(Homo sapiens\)](#)



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:** [I3P is dephosphorylated to Ins by IMPA1/2 in the cytosol](#)

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