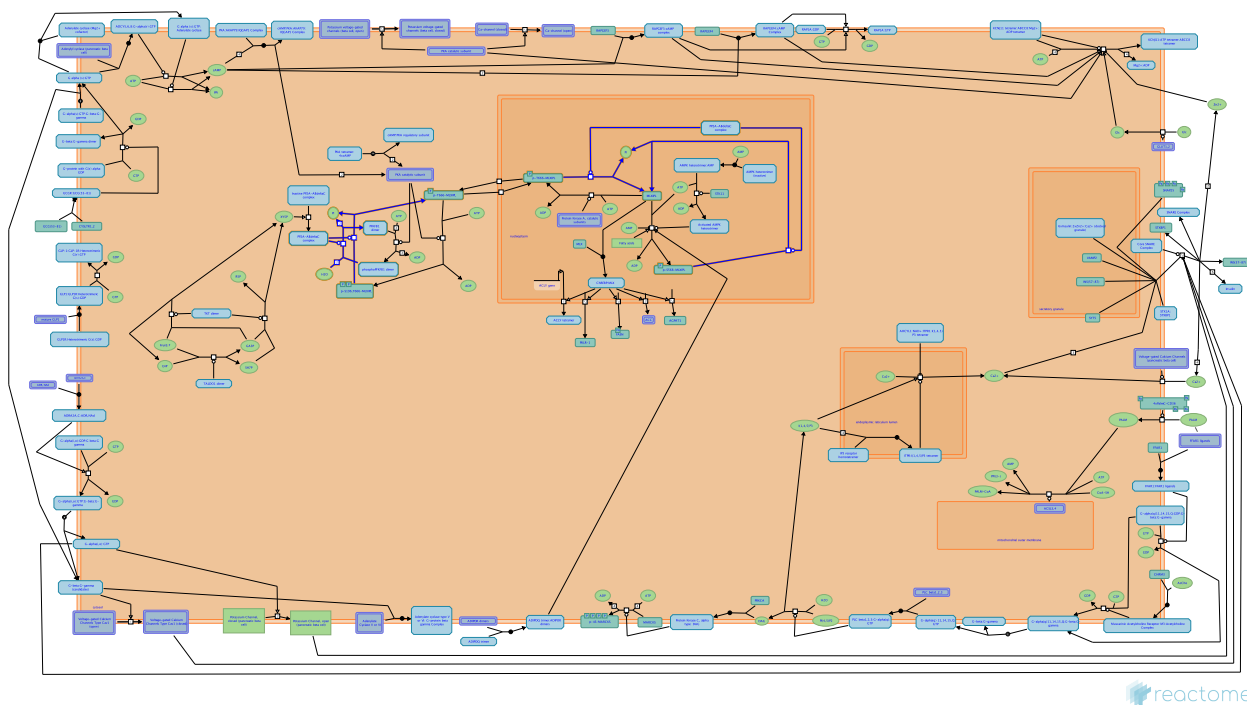


PP2A-mediated dephosphorylation of key metabolic factors



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05/09/2021

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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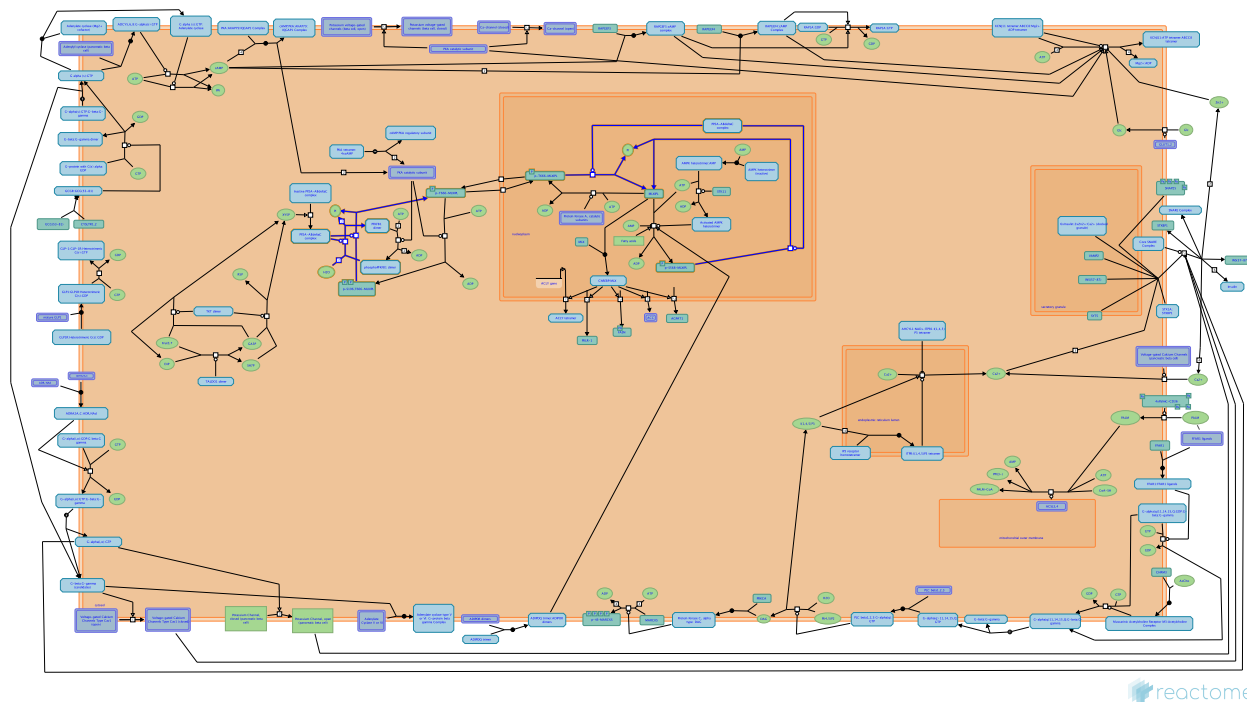
Reactome database release: 77

This document contains 1 pathway and 4 reactions ([see Table of Contents](#))

PP2A-mediated dephosphorylation of key metabolic factors ↗

Stable identifier: R-HSA-163767

Compartments: cytosol, nucleoplasm



A member of the PP2A family of phosphatases dephosphorylates both cytosolic and nuclear forms of ChREBP (Carbohydrate Response Element Binding Protein). In the nucleus, dephosphorylated ChREBP complexes with MLX protein and binds to ChRE sequence elements in chromosomal DNA, activating transcription of genes involved in glycolysis and lipogenesis. The phosphatase is activated by Xylulose-5-phosphate, an intermediate of the pentose phosphate pathway (Kabashima et al. 2003). The rat enzyme has been purified to homogeneity and shown by partial amino acid sequence analysis to differ from previously described PP2A phosphatases (Nishimura and Uyeda 1995) - the human enzyme has not been characterized.

Literature references

Veech, RL. (2003). A humble hexose monophosphate pathway metabolite regulates short- and long-term control of lipogenesis. *Proc Natl Acad Sci U S A*, 100, 5578-80. ↗

Editions

2005-05-13

Authored

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Dephosphorylation of pChREBP (Ser 196) by PP2A ↗

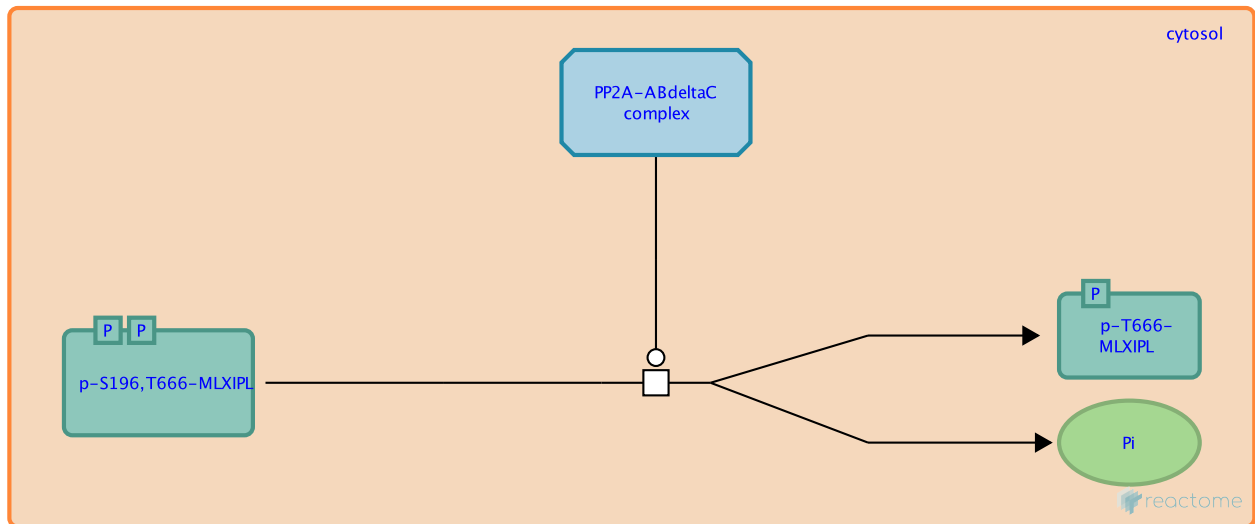
Location: PP2A-mediated dephosphorylation of key metabolic factors

Stable identifier: R-HSA-163689

Type: transition

Compartments: cytosol

Inferred from: Dephosphorylation of prChREBP (Ser 196) by rPP2A (*Rattus norvegicus*)



At the beginning of this reaction, 1 molecule of 'pChREBP (Ser 196, Thr 666)' is present. At the end of this reaction, 1 molecule of 'Orthophosphate', and 1 molecule of 'pChREBP (Thr 666)' are present.

This reaction takes place in the 'cytosol' and is mediated by the 'phosphatidate phosphatase activity' of 'PP2A-ABdeltaC complex'.

Dephosphorylation of pChREBP (Ser 568) by PP2A [↗](#)

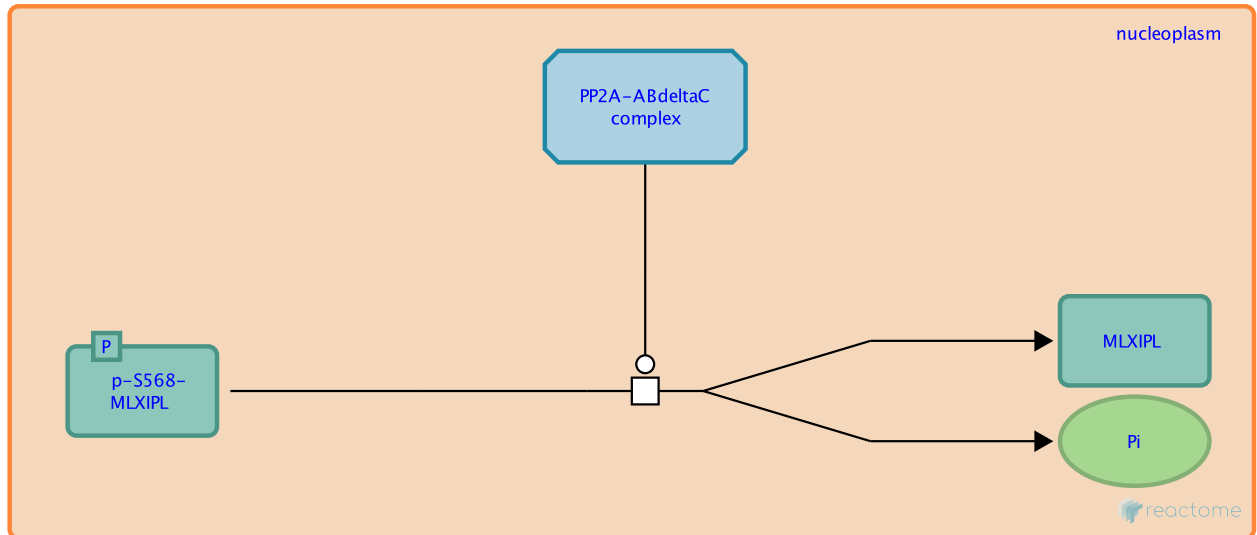
Location: PP2A-mediated dephosphorylation of key metabolic factors

Stable identifier: R-HSA-164056

Type: transition

Compartments: nucleoplasm

Inferred from: [Dephosphorylation of prChREBP \(Ser 568\) by rPP2A complex \(Rattus norvegicus\)](#)



At the beginning of this reaction, 1 molecule of 'pChREBP(Ser 568)' is present. At the end of this reaction, 1 molecule of 'Orthophosphate', and 1 molecule of 'ChREBP protein' are present.

This reaction takes place in the 'nucleus' and is mediated by the 'phosphatidate phosphatase activity' of 'PP2A-ABdeltaC complex'.

Dephosphorylation of pChREBP (Thr 666) by PP2A ↗

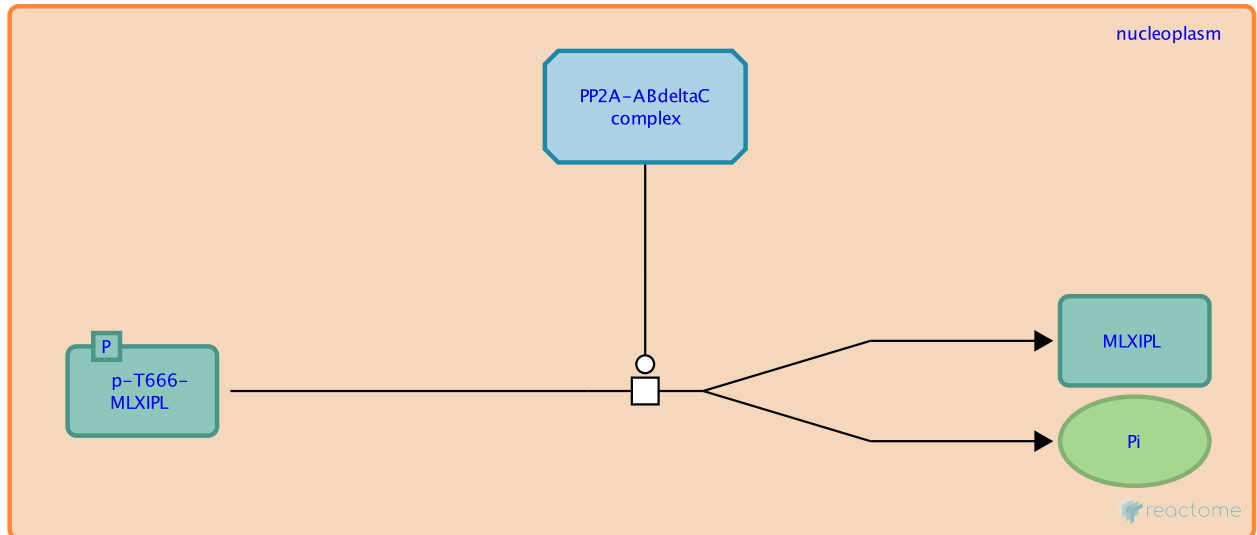
Location: PP2A-mediated dephosphorylation of key metabolic factors

Stable identifier: R-HSA-163688

Type: transition

Compartments: nucleoplasm

Inferred from: Dephosphorylation of prChREBP (Thr 666) by rPP2A (*Rattus norvegicus*)



At the beginning of this reaction, 1 molecule of 'pChREBP (Thr 666)' is present. At the end of this reaction, 1 molecule of 'Orthophosphate', and 1 molecule of 'ChREBP protein' are present.

This reaction takes place in the 'nucleus' and is mediated by the 'phosphatidate phosphatase activity' of 'PP2A-ABdeltaC complex'.

Dephosphorylation of phosphoPFKFB1 by PP2A complex ↗

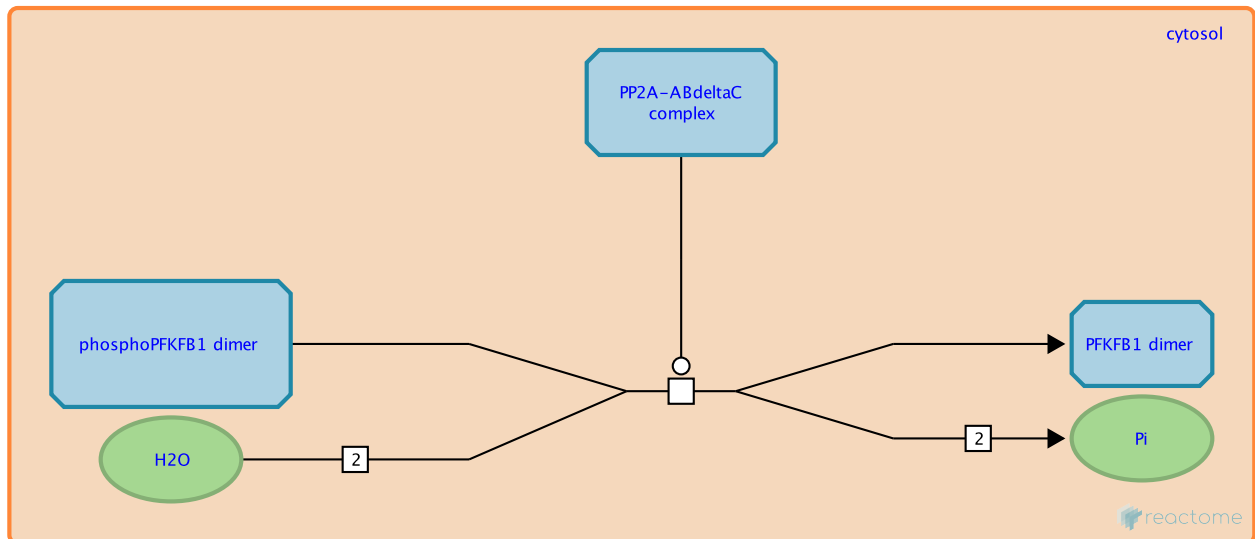
Location: PP2A-mediated dephosphorylation of key metabolic factors

Stable identifier: R-HSA-163750

Type: transition

Compartments: cytosol

Inferred from: Dephosphorylation of PF2K-Pase by rPP2A complex (Rattus norvegicus)



At the beginning of this reaction, 1 molecule of 'pPF2K-Pase complex' is present. At the end of this reaction, 1 molecule of 'Orthophosphate', and 1 molecule of 'PF2K-Pase1 homodimer' are present.

This reaction takes place in the 'cytosol' and is mediated by the 'phosphatidate phosphatase activity' of 'PP2A-ABdeltaC complex'.

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