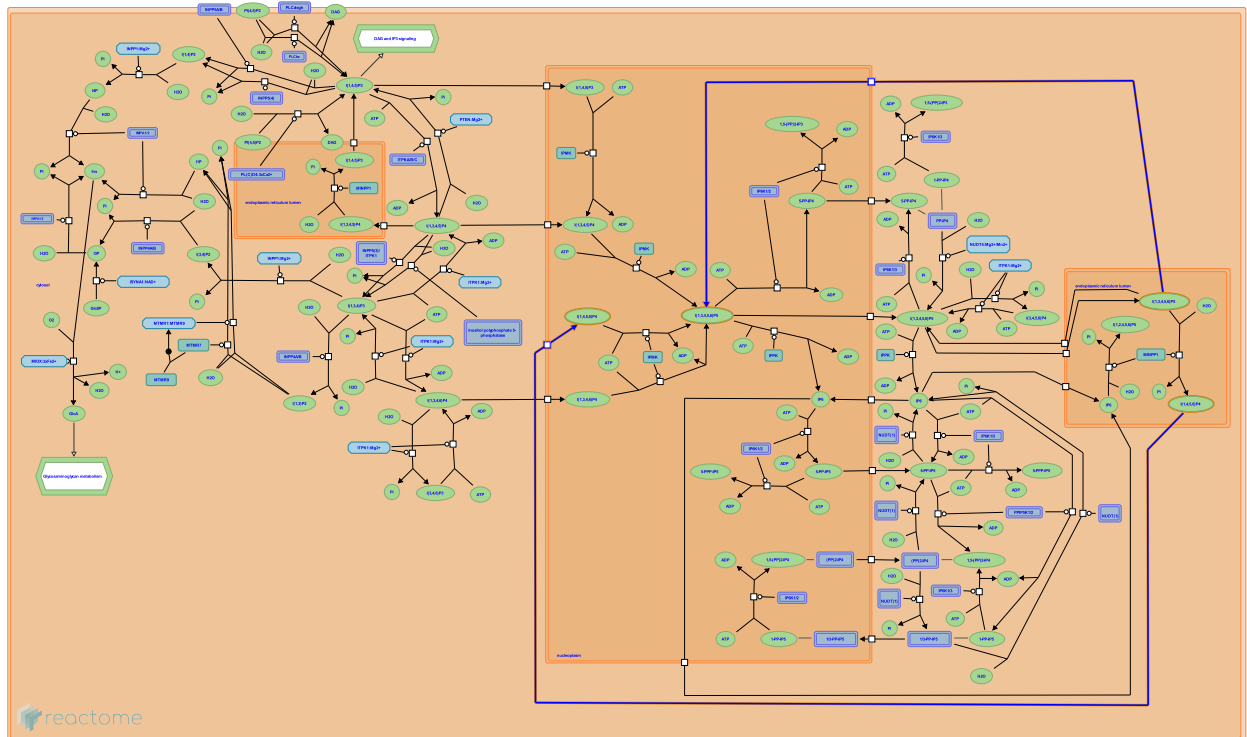


IPs transport between ER lumen and nucleus



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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/).

01/05/2024

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

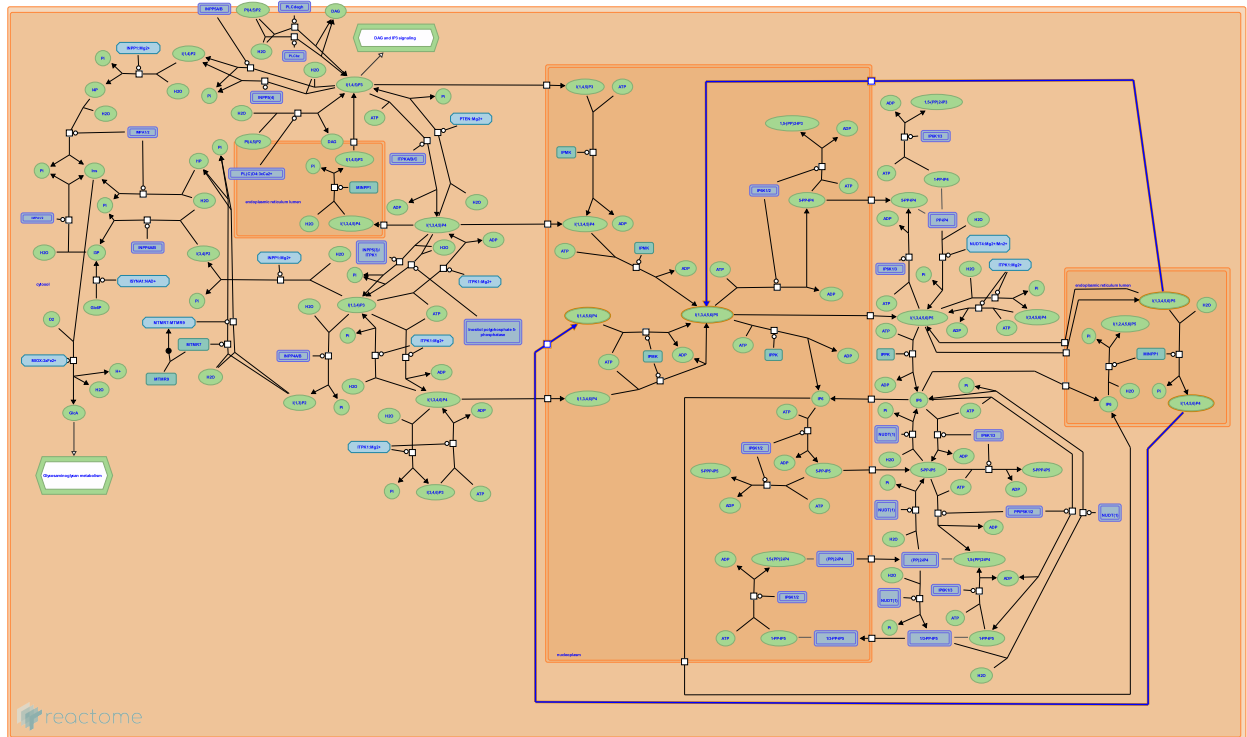
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Reactome database release: 88

This document contains 1 pathway and 2 reactions ([see Table of Contents](#))

IPs transport between ER lumen and nucleus ↗

Stable identifier: R-HSA-1855156



Inositol phosphates IP4 and IP5 are exported from the endoplasmic reticulum (ER) lumen to the nucleus (Caffrey et al. 1999, Chi et al. 1999, Nalaskowski et al. 2002, Verbsky et al. 2002, Brehm et al. 2007, Choi et al. 2007). The molecular details of these transport processes remain uncertain.

Literature references

Nalaskowski, MM., Windhorst, S., Schenk, TM., Kobras, M., Brehm, MA., Mayr, GW. et al. (2007). Intracellular localization of human Ins(1,3,4,5,6)P5 2-kinase. *Biochem J*, 408, 335-45. ↗

Chi, H., Reynolds, PR., O'keefe, RJ., Romano, PR., Rosier, RN., Wang, J. et al. (1999). Multiple inositol polyphosphate phosphatase: evolution as a distinct group within the histidine phosphatase family and chromosomal localization of the human and mouse genes to chromosomes 10q23 and 19. *Genomics*, 56, 324-36. ↗

Hidaka, K., Matsuda, M., Caffrey, JJ., Hirata, M., Shears, SB. (1999). The human and rat forms of multiple inositol polyphosphate phosphatase: functional homology with a histidine acid phosphatase up-regulated during endochondral ossification. *FEBS Lett*, 442, 99-104. ↗

Cho, J., Williams, J., Falck, JR., Choi, JH., Shears, SB. (2007). Purification, sequencing, and molecular identification of a mammalian PP-InsP5 kinase that is activated when cells are exposed to hyperosmotic stress. *J Biol Chem*, 282, 30763-75. ↗

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Editions

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|------------|------------------|----------------|
| 2011-10-28 | Authored, Edited | Williams, MG. |
| 2012-11-07 | Reviewed | Wundenberg, T. |

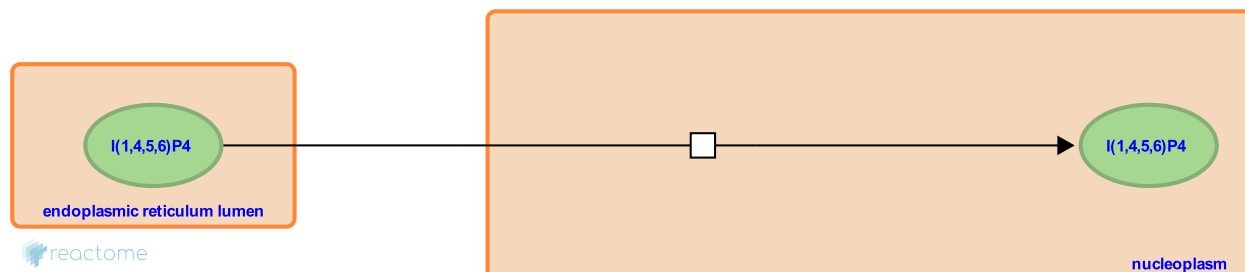
I(1,4,5,6)P4 transports from the ER lumen to the nucleus ↗

Location: IPs transport between ER lumen and nucleus

Stable identifier: R-HSA-1855189

Type: transition

Compartments: nucleoplasm, endoplasmic reticulum lumen



Inositol 1,4,5,6-tetrakisphosphate (I(1,4,5,6)P4) translocates from the endoplasmic reticulum (ER) lumen to the nucleus (Caffrey et al. 1999, Chi et al. 1999, Nalaskowski et al. 2002).

Literature references

Chi, H., Reynolds, PR., O'keefe, RJ., Romano, PR., Rosier, RN., Wang, J. et al. (1999). Multiple inositol polyphosphate phosphatase: evolution as a distinct group within the histidine phosphatase family and chromosomal localization of the human and mouse genes to chromosomes 10q23 and 19. *Genomics*, 56, 324-36. ↗

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Editions

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|------------|------------------|----------------|
| 2011-10-28 | Authored, Edited | Williams, MG. |
| 2012-11-07 | Reviewed | Wundenberg, T. |

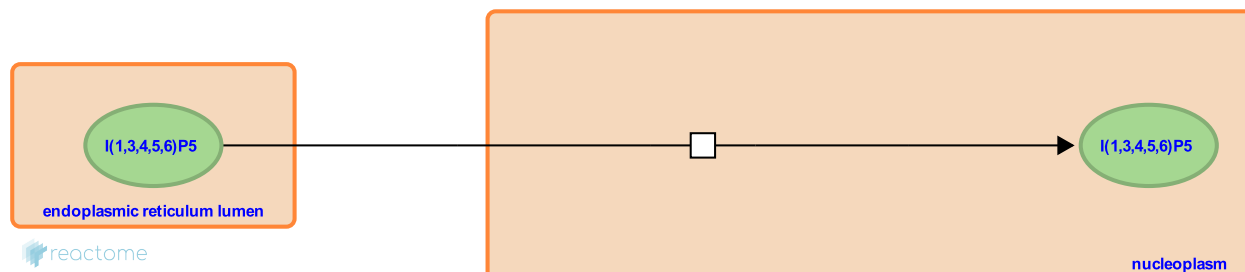
I(1,3,4,5,6)P5 transports from the ER lumen to the nucleus ↗

Location: IPs transport between ER lumen and nucleus

Stable identifier: R-HSA-1855160

Type: transition

Compartments: nucleoplasm, endoplasmic reticulum lumen



Inositol 1,3,4,5,6-pentakisphosphate (I(1,3,4,5,6)P5) translocates from the endoplasmic reticulum (ER) lumen to the nucleus (Verbsky et al. 2002, Brehm et al. 2007, Choi et al. 2007).

Literature references

Nalaskowski, MM., Windhorst, S., Schenk, TM., Kobras, M., Brehm, MA., Mayr, GW. et al. (2007). Intracellular localization of human Ins(1,3,4,5,6)P5 2-kinase. *Biochem J*, 408, 335-45. ↗

Cho, J., Williams, J., Falck, JR., Choi, JH., Shears, SB. (2007). Purification, sequencing, and molecular identification of a mammalian PP-InsP5 kinase that is activated when cells are exposed to hyperosmotic stress. *J Biol Chem*, 282, 30763-75. ↗

Wente, SR., Majerus, PW., Kisseleva, MV., Wilson, MP., Verbsky, JW. (2002). The synthesis of inositol hexakisphosphate. Characterization of human inositol 1,3,4,5,6-pentakisphosphate 2-kinase. *J Biol Chem*, 277, 31857-62. ↗

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| 2011-10-28 | Authored, Edited | Williams, MG. |
| 2012-11-07 | Reviewed | Wundenberg, T. |

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| ↳ I(1,3,4,5,6)P5 transports from the ER lumen to the nucleus | 4 |
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