



## 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.

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## Literature references

- Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics*, 18, 142. [↗](#)
- Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)
- Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res*, 46, D649-D655. [↗](#)
- 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

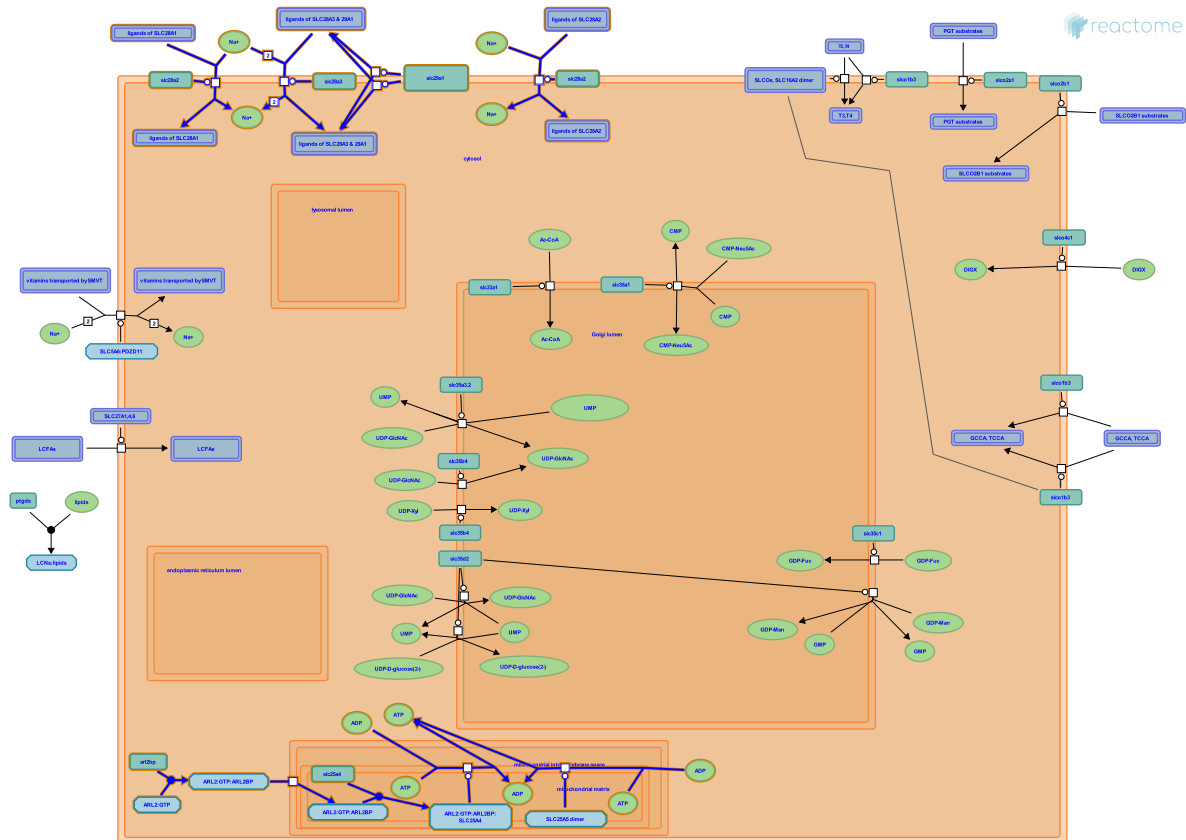
This document contains 1 pathway and 10 reactions ([see Table of Contents](#))

# Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane ↗

Stable identifier: R-XTR-83936

Compartments: plasma membrane

Inferred from: Transport of nucleosides and free purine and pyrimidine bases across 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.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## Concentrative transport (import) of a nucleoside and a sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 1 [↗](#)

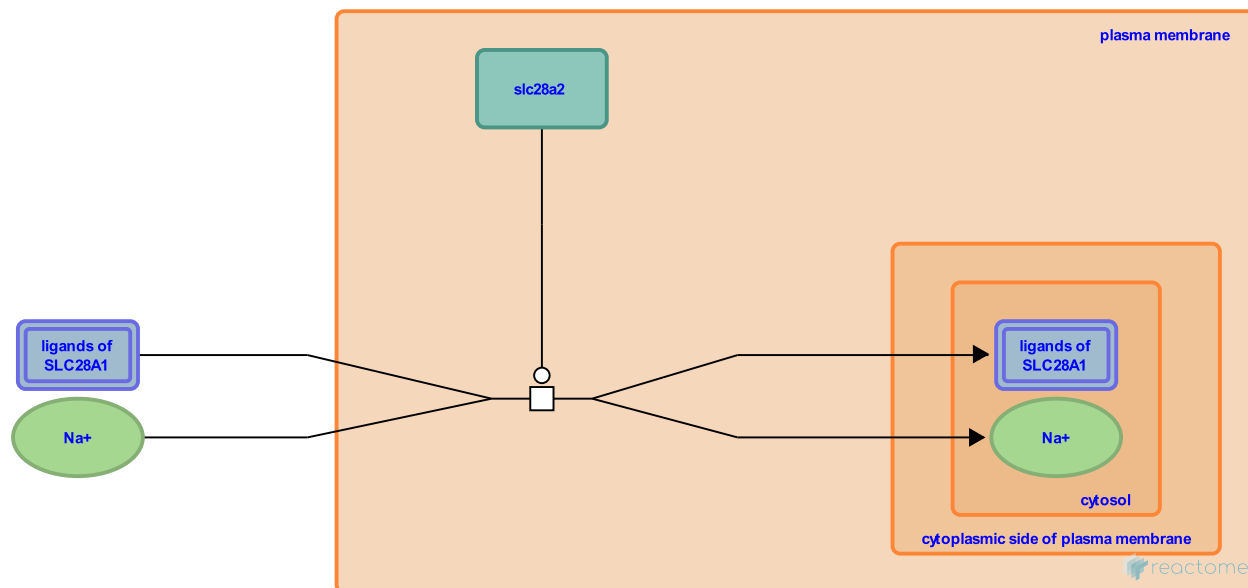
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-109530

**Type:** transition

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** Concentrative transport (import) of a nucleoside and a sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 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.

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## Concentrative transport (import) of a nucleoside and two sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 3 [↗](#)

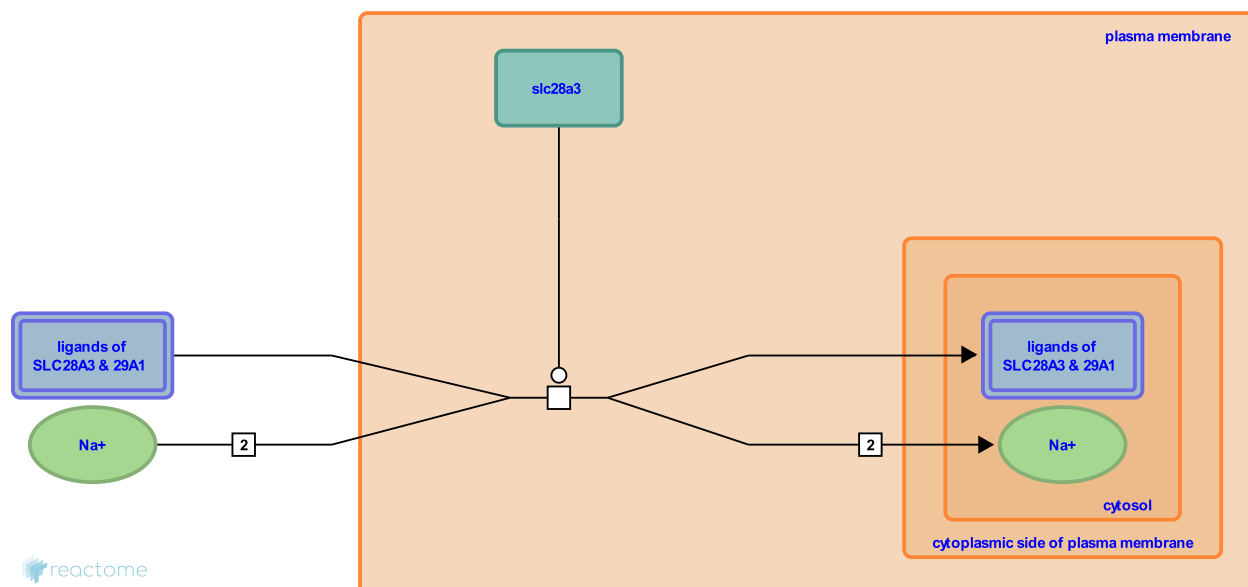
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-109538

**Type:** transition

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** Concentrative transport (import) of a nucleoside and two sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 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.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## Concentrative transport (import) of nucleosides plus sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 2 ↗

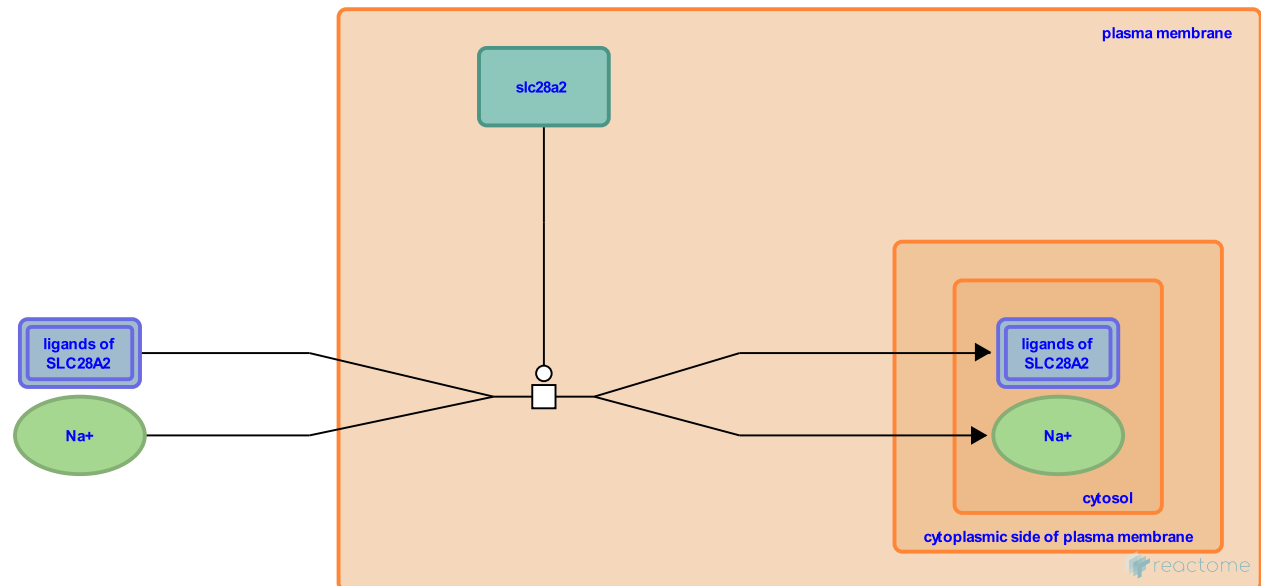
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-109539

**Type:** transition

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** Concentrative transport (import) of nucleosides plus sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 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.

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## Equilibrative transport (export) of nucleosides and free bases by solute carrier family 29 (nucleoside transporters), member 1 ↗

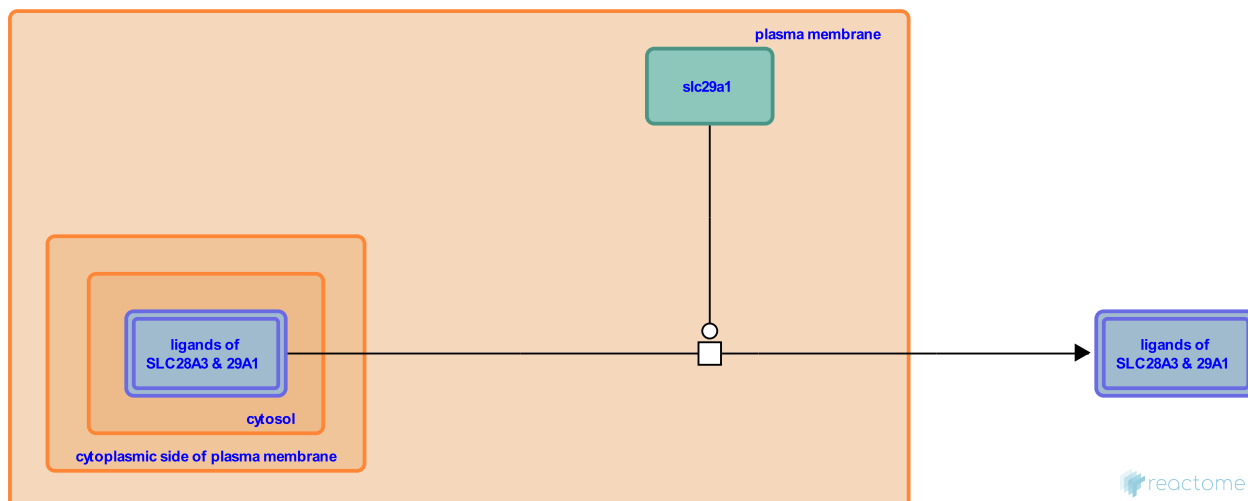
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-109534

**Type:** transition

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** Equilibrative transport (export) of nucleosides and free bases by solute carrier family 29 (nucleoside transporters), member 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.

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## Equilibrative transport (import) of nucleosides and free bases by solute carrier family 29 (nucleoside transporters), member 1 ↗

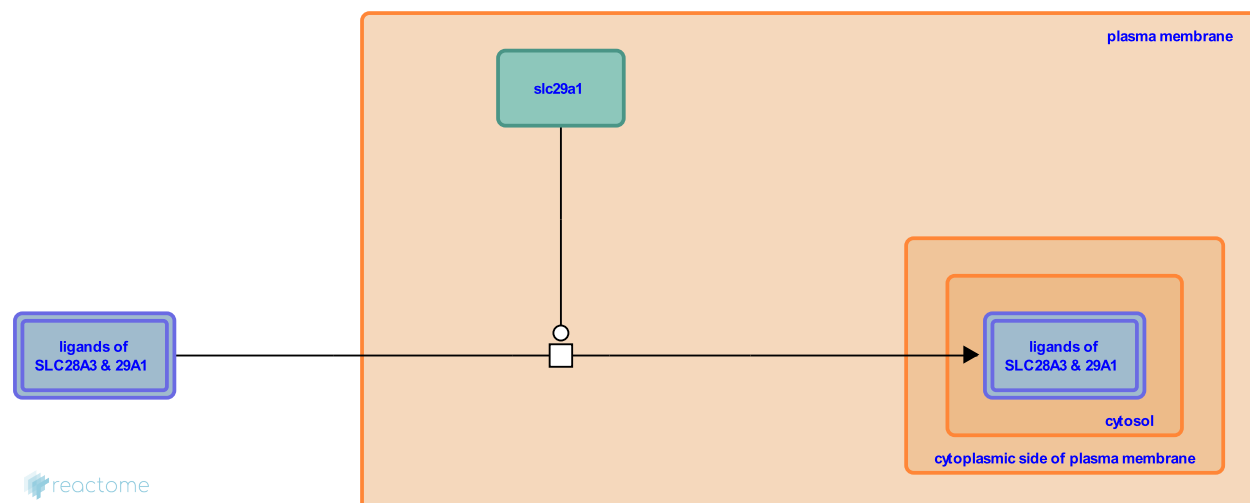
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-109536

**Type:** transition

**Compartments:** plasma membrane, extracellular region, cytosol

**Inferred from:** Equilibrative transport (import) of nucleosides and free bases by solute carrier family 29 (nucleoside transporters), member 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.

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## ARL2:GTP binds ARL2BP ↗

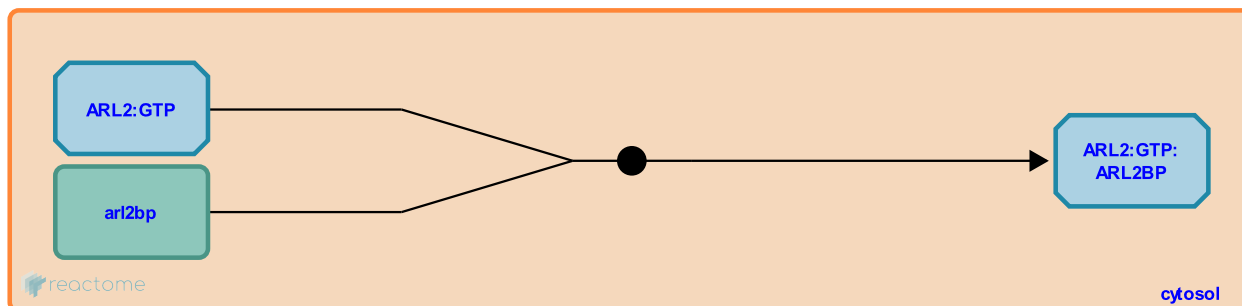
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-5250217

**Type:** binding

**Compartments:** cytosol

**Inferred from:** [ARL2:GTP binds ARL2BP \(Homo sapiens\)](#)



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.

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## ARL2:GTP:ARL2BP translocates from cytosol to the mitochondrial matrix ↗

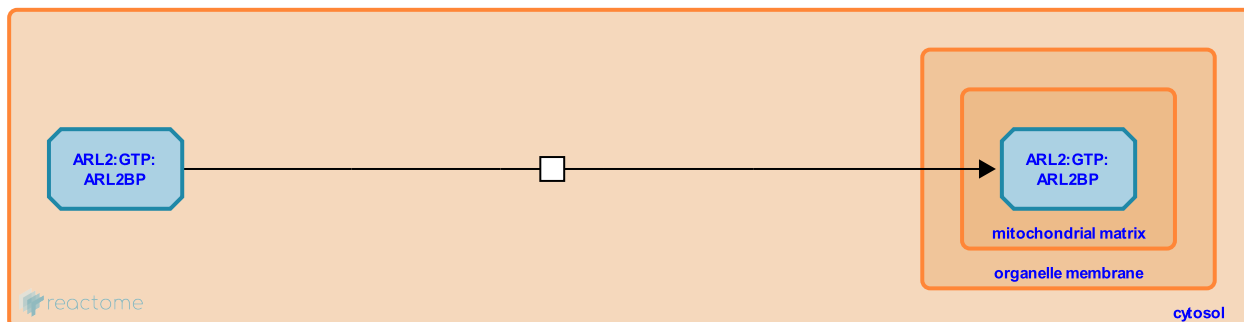
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-5250210

**Type:** transition

**Compartments:** cytosol, mitochondrial matrix

**Inferred from:** [ARL2:GTP:ARL2BP translocates from cytosol to the mitochondrial matrix \(Homo sapiens\)](#)



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>

## ARL2:GTP:ARL2BP binds SLC25A4 ↗

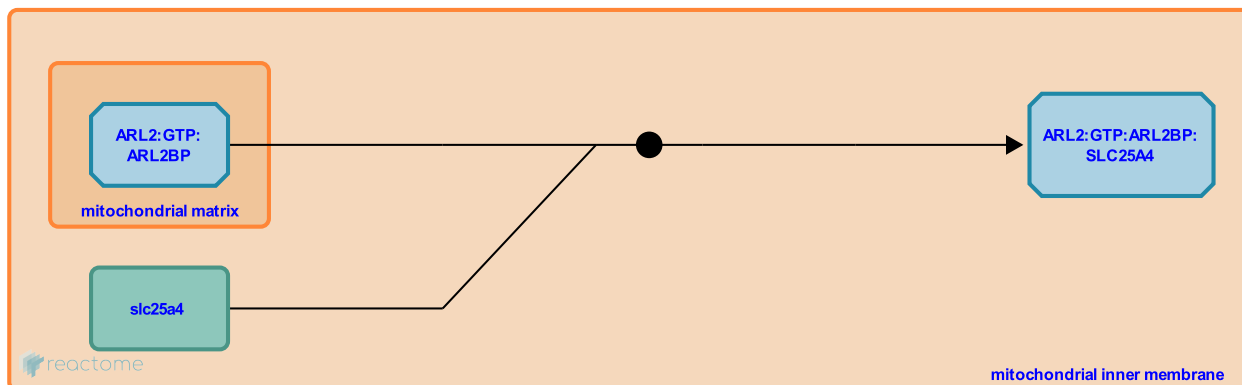
**Location:** [Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane](#)

**Stable identifier:** R-XTR-5250209

**Type:** binding

**Compartments:** mitochondrial inner membrane, mitochondrial matrix

**Inferred from:** [ARL2:GTP:ARL2BP binds SLC25A4 \(Homo sapiens\)](#)



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>

## ARL2:GTP:ARL2BP:SLC25A4 dimer exchanges ATP for ADP across the mitochondrial inner membrane ↗

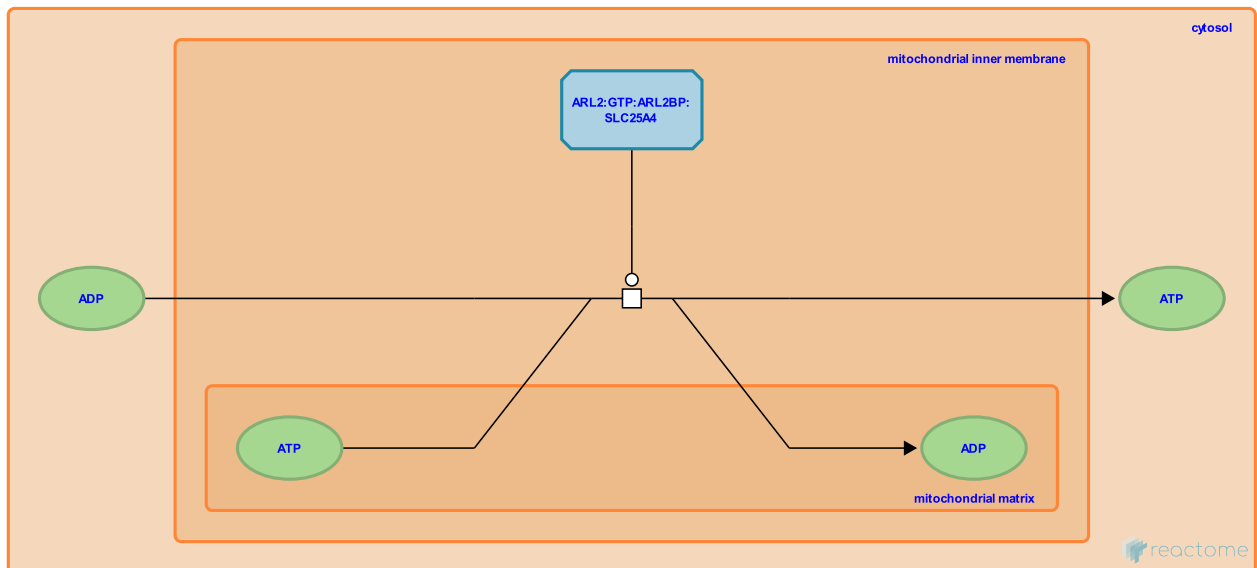
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-5672027

**Type:** transition

**Compartments:** mitochondrial inner membrane

**Inferred from:** [ARL2:GTP:ARL2BP:SLC25A4 dimer exchanges ATP for ADP across the mitochondrial inner 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.

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## SLC25A5,6 dimers exchange ATP for ADP across the mitochondrial inner membrane



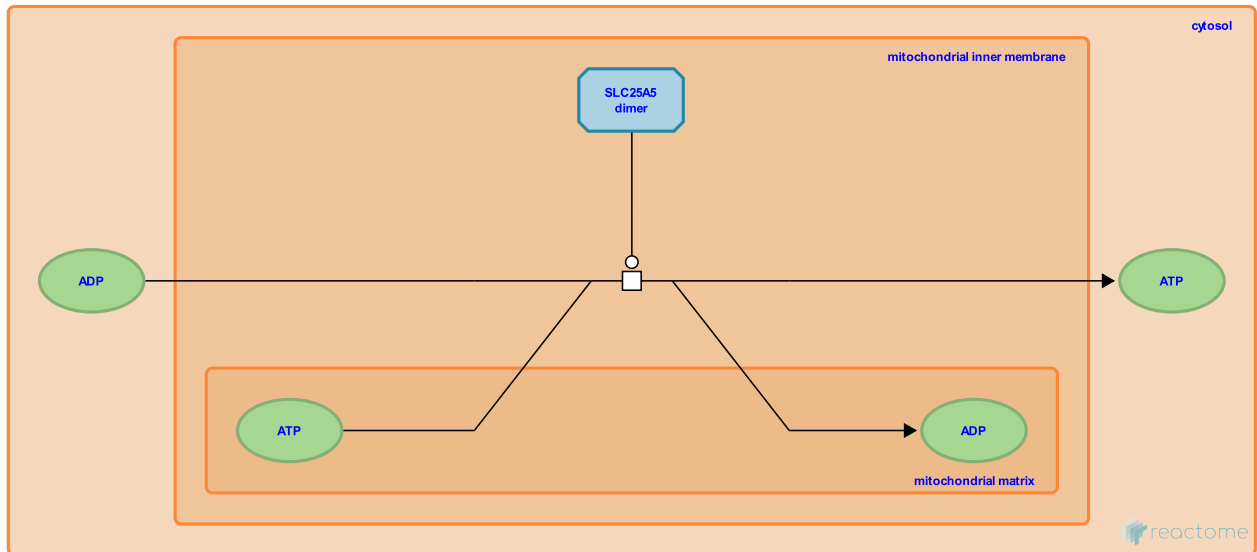
**Location:** Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane

**Stable identifier:** R-XTR-163215

**Type:** transition

**Compartments:** mitochondrial inner membrane

**Inferred from:** SLC25A5,6 dimers exchange ATP for ADP across the mitochondrial inner 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>

# Table of Contents

Introduction	1
☞ Transport of nucleosides and free purine and pyrimidine bases across the plasma membrane	2
☞ Concentrative transport (import) of a nucleoside and a sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 1	3
☞ Concentrative transport (import) of a nucleoside and two sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 3	4
☞ Concentrative transport (import) of nucleosides plus sodium ions by solute carrier family 28 (sodium-coupled nucleoside transporter), member 2	5
☞ Equilibrative transport (export) of nucleosides and free bases by solute carrier family 29 (nucleoside transporters), member 1	6
☞ Equilibrative transport (import) of nucleosides and free bases by solute carrier family 29 (nucleoside transporters), member 1	7
☞ ARL2:GTP binds ARL2BP	8
☞ ARL2:GTP:ARL2BP translocates from cytosol to the mitochondrial matrix	9
☞ ARL2:GTP:ARL2BP binds SLC25A4	10
☞ ARL2:GTP:ARL2BP:SLC25A4 dimer exchanges ATP for ADP across the mitochondrial inner membrane	11
☞ SLC25A5,6 dimers exchange ATP for ADP across the mitochondrial inner membrane	12
Table of Contents	13