Transport of connexins along the secretory pathway

Falk, MM., Gilleron, J., Matthews, L., Segretain, D.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of Creative Commons Attribution 4.0 International (CC BY 4.0) License. For more information see our license.

15/11/2021
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 back 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


Reactome database release: 78

This document contains 1 pathway and 2 reactions (see Table of Contents)
Transport of connexins along the secretory pathway

Stable identifier: R-HSA-190827

Compartments: cytosol

Connexins follow the classical secretory transport route from the ER to the plasma membrane: ER -> ER-GIC -> Golgi -> TGN (Trans Golgi Network) -> PM (Plasma Membrane). All connexins assemble or oligomerize into hexameric connexons. The site of assembly varies and depends on Cx isoform, or cell type (see Koval et al., 2006).

Oligomerization of connexins has been observed during ER membrane insertion (Cx32), just after exit from the ER, in the ER-Golgi-intermediate compartment (Cx26) and inside the Trans-Golgi Network (Cx43) (Falk et al. 1997; Ahmad et al. 1999; Musil and Goodenough 1993; Diez et al. 1999).

Literature references


## Editions

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-01-03</td>
<td>Authored</td>
<td>Gilleron, J., Segretain, D., Falk, MM.</td>
</tr>
<tr>
<td>2007-01-26</td>
<td>Edited</td>
<td>Matthews, L.</td>
</tr>
</tbody>
</table>
Transport of connexins to the ER-Golgi intermediate compartment

**Location:** Transport of connexins along the secretory pathway

**Stable identifier:** R-HSA-190698

**Type:** transition

**Compartments:** cytosol

**Inferred from:** Transport of connexins to the ER-Golgi intermediate compartment (Cavia porcellus)

Transport of connexins along the secretory pathway (including transit from the ER to the ERGIC where Cx32 is predicted to oligomerize) occurs in vesicular transport containers.

**Editions**

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-01-03</td>
<td>Authored</td>
<td>Gilleron, J., Segretain, D., Falk, MM.</td>
</tr>
<tr>
<td>2007-01-07</td>
<td>Edited</td>
<td>Matthews, L.</td>
</tr>
</tbody>
</table>
Transport of connexins to the Trans-Golgi Network (TGN)

Location: Transport of connexins along the secretory pathway

Stable identifier: R-HSA-190686

Type: transition

Compartments: cytosol

Inferred from: Transport of Connexin to the Trans-Golgi network (Rattus norvegicus)

Transport of connexins along the secretory pathway (including transit from the Golgi to the TGN where Cx43 is predicted to oligomerize) occurs in vesicular transport containers.

Editions

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-01-03</td>
<td>Authored</td>
<td>Gilleron, J., Segretain, D., Falk, MM.</td>
</tr>
<tr>
<td>2007-01-07</td>
<td>Edited</td>
<td>Matthews, L.</td>
</tr>
</tbody>
</table>
# Table of Contents

- **Introduction**                                    1  
- **Transport of connexins along the secretory pathway**  2  
  - **Transport of connexins to the ER-Golgi intermediate compartment**  4  
  - **Transport of connexins to the Trans-Golgi Network (TGN)**  5  

Table of Contents  6