Activation of BMF and translocation to mitochondria

Gopinathrao, G., Orlic-Milacic, M., Vaux, DL.
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


Reactome database release: 71

This document contains 1 pathway and 2 reactions (see Table of Contents)
Activation of BMF and translocation to mitochondria

Stable identifier: R-HSA-139910

Compartments: cytosol

In healthy cells, BMF is bound to the myosin V motor complex through its interaction with DLC2. UV irradiation or anoikis induces MAPK8 (JNK) to phosphorylate Dynein Light Chain 2 (DLC2) to release BMF.

Literature references


Editions

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-08-20</td>
<td>Authored</td>
<td>Gopinathrao, G.</td>
</tr>
<tr>
<td>2019-11-13</td>
<td>Reviewed</td>
<td>Vaux, DL.</td>
</tr>
</tbody>
</table>
**Phosphorylation of DLC2 by MAPK8**

**Location:** Activation of BMF and translocation to mitochondria

**Stable identifier:** R-HSA-139908

**Type:** transition

**Compartments:** cytosol, plasma membrane

MAPK8 (JNK) phosphorylates BMF on a DLC binding motif DKATQTLSP involved in interaction with dynein DYNLL2 (DLC2), which sequesters BMF to the cytoskeleton. Phosphorylated BMF dissociates from dynein. Two JNK consensus sites exist in BMF: S74 and S77 (Lei and Davis 2003).

**Followed by:** Translocation of BMF to mitochondria

**Literature references**


**Editions**

2013-02-14

Revised

Orlic-Milacic, M.

https://www.reactome.org
Translocation of BMF to mitochondria

Location: Activation of BMF and translocation to mitochondria

Stable identifier: R-HSA-139909

Type: transition

Compartments: cytosol, mitochondrial outer membrane

Once BMF dissociates from the cytoskeleton, it translocates to the outer mitochondrial membrane where it binds BCL2 (Puthalakath et al. 2001).

Preceded by: Phosphorylation of DLC2 by MAPK8

Literature references

Table of Contents

Introduction

- Activation of BMF and translocation to mitochondria
  - Phosphorylation of DLC2 by MAPK8
  - Translocation of BMF to mitochondria

Table of Contents