ATG10 transfers ATG12 from ATG10 to ATG5

Jupe, S., Klionsky, DJ., Tooze, SA., Varusai, TM.
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


Reactome database release: 78

This document contains 1 reaction (see Table of Contents)
ATG10 transfers ATG12 from ATG10 to ATG5

**Stable identifier:** R-HSA-5683588

**Type:** transition

**Compartments:** cytosol

ATG12 is transferred from ATG10, becoming conjugated to the ATG5 at Lys-130 through an isopeptide bond (Mizushima et al. 1998) that requires no E3-like enzyme. Nuclear magnetic resonance experiments, mutational analyses and crosslinking experiments show that ATG10 directly recognizes ATG5, binding it to place the side chain of ATG5 Lys-130 into an optimal orientation for its conjugation reaction with ATG12, thereby enabling ATG10 to mediate the formation of the ATG12-ATG5 conjugate without a specific E3 enzyme (Yamaguchi et al. 2012).

**Literature references**


**Editions**

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