MAP1LC3B binds ATM dimer:Ub-p-PEX5:SQSTM1

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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. ↗

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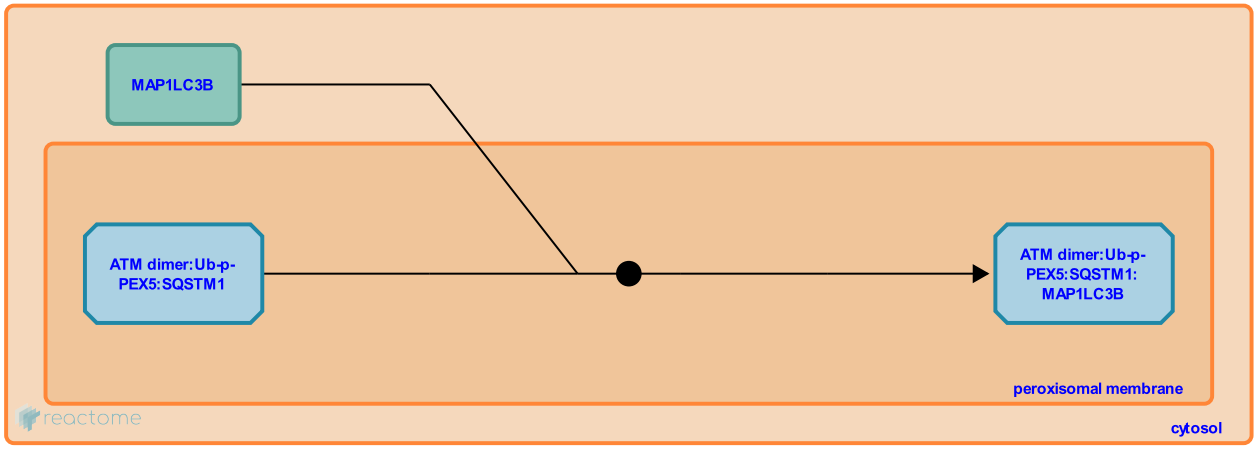
Stable identifier: R-HSA-9664855

Type: binding

Compartments: peroxisomal membrane



Sequestosome 1 (SQSTM1) is an autophagic receptor that recruits ubiquitinated cargo to the autophagosome. SQSTM1 contains a ubiquitin associated (UBA) domain that binds to monoubiquitinated Peroxisomal targeting signal 1 receptor (PEX5) in the peroxisome and an LC3 interacting region (LIR) that binds to Microtubule associated proteins 1A/1B light chain 3B (MAP1LC3B)/LC3 associated with the nascent autophagosome (Pankiv S et al. 2007). Subsequently, the peroxisome is degraded by the autophagy machinery.

Literature references

Bruun, JA., Clausen, TH., Pankiv, S., Lamark, T., Brech, A., Johansen, T. et al. (2007). p62/SQSTM1 binds directly to Atg8/LC3 to facilitate degradation of ubiquitinated protein aggregates by autophagy. *J. Biol. Chem., 282*, 24131-45. ↗

Editions

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