

Interaction of Erp57 with MHC class I HC

Elliott, T., Garapati, P V.

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](https://creativecommons.org/licenses/by/4.0/). For more information see our [license](https://reactome.org/licenses).

18/05/2024

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

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

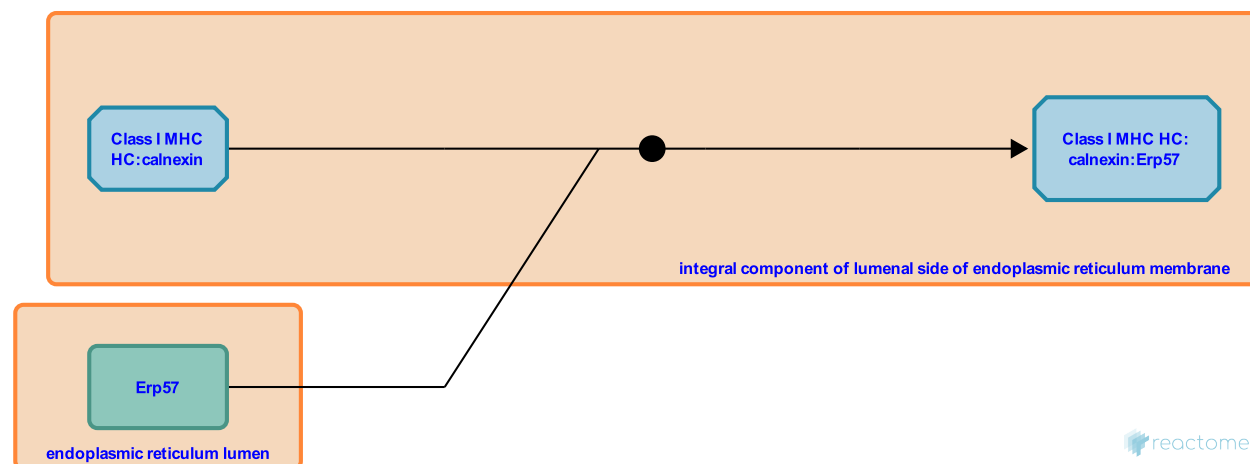
This document contains 1 reaction ([see Table of Contents](#))

Interaction of Erp57 with MHC class I HC [↗](#)

Stable identifier: R-MMU-983160

Type: binding

Compartment(s): integral component of luminal side of endoplasmic reticulum membrane, endoplasmic reticulum lumen



Endoplasmic reticulum resident protein 57 (ERp57), is a member of the protein disulphide isomerase (PDI) family of thiol oxidoreductases. It associates with Calnexin (CNX), and its soluble homolog calreticulin (CRT) and is recruited to MHC Class I Heavy Chain (HC). ERp57 is involved in the formation of HC disulphide bonds.

Literature references

Brockmeier, U., Williams, DB., Elliott, T., Maattanen, P., Zhang, Y., Gehring, K. et al. (2009). ERp57 does not require interactions with calnexin and calreticulin to promote assembly of class I histocompatibility molecules, and it enhances peptide loading independently of its redox activity. *J Biol Chem*, 284, 10160-73. [↗](#)

Williams, DB., Baig, E., Zhang, Y. (2006). Functions of ERp57 in the folding and assembly of major histocompatibility complex class I molecules. *J Biol Chem*, 281, 14622-31. [↗](#)

Editions

2010-10-29	Authored, Edited	Garapati, P V.
2011-02-11	Reviewed	Elliott, T.