

Autocleavage of ESPL1 (Separase)

Gillespie, ME., Matthews, L., Orlic-Milacic, M., Tanno, Y., Watanabe, Y., Zhang, N.

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

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10/05/2024

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

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- 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

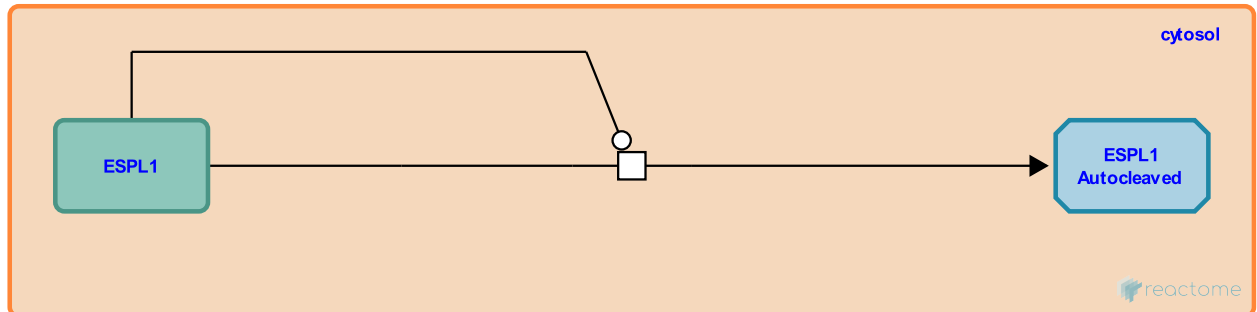
This document contains 1 reaction ([see Table of Contents](#))

Autocleavage of ESPL1 (Separase) [↗](#)

Stable identifier: R-HSA-2467775

Type: transition

Compartments: cytosol



After APC/C-mediated degradation of PTTG1 (securin), ESPL1 (separin i.e. separase) is rapidly autocatalytically cleaved after arginine residues at positions 1506 and 1535. The N-terminal and C-terminal fragments remain bound to each other after cleavage. It has not been examined what happens with the short middle fragment of ESPL1, so it is annotated as a part of the autocleaved ESPL1 complex. The autocatalytic cleavage of ESPL1 is not a prerequisite for the subsequent cleavage of the cohesin subunit RAD21 (Waizenegger et al. 2002).

Literature references

Peters, JM., Waizenegger, I., Wernic, D., Giménez-Abián, JF. (2002). Regulation of human separase by securin binding and autocleavage. *Curr. Biol.*, 12, 1368-78. [↗](#)

Editions

2012-10-02	Authored	Orlic-Milacic, M.
2012-10-05	Edited	Gillespie, ME., Matthews, L.
2012-10-22	Reviewed	Zhang, N.
2012-11-20	Reviewed	Watanabe, Y., Tanno, Y.