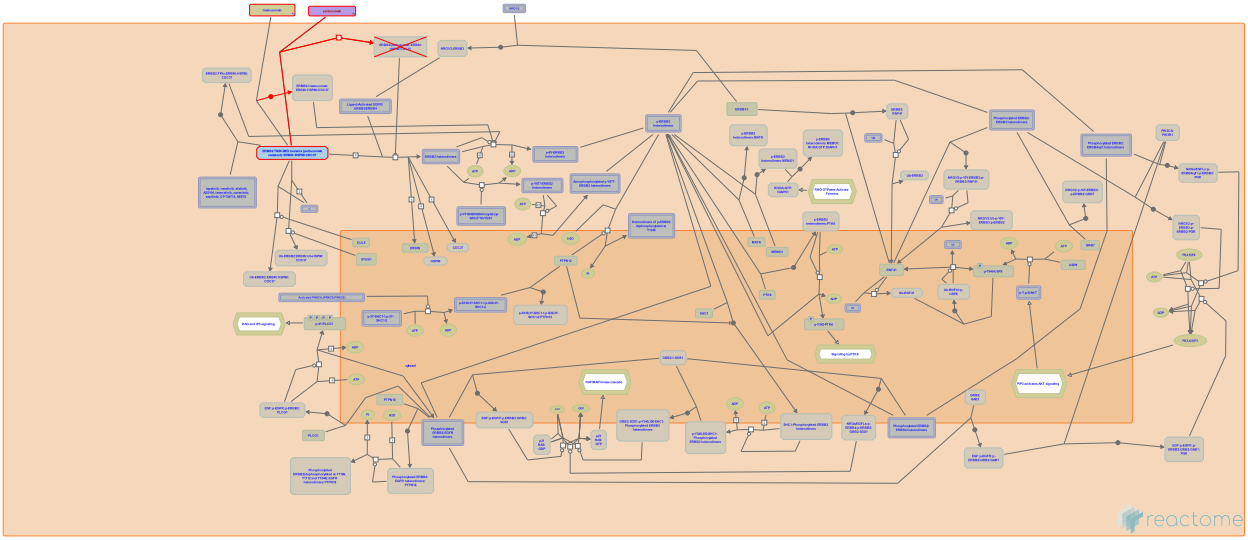
Drug resistance in ERBB2 TMD/JMD mutants



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This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the Reactome Textbook.

01/05/2024

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.

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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. ↗

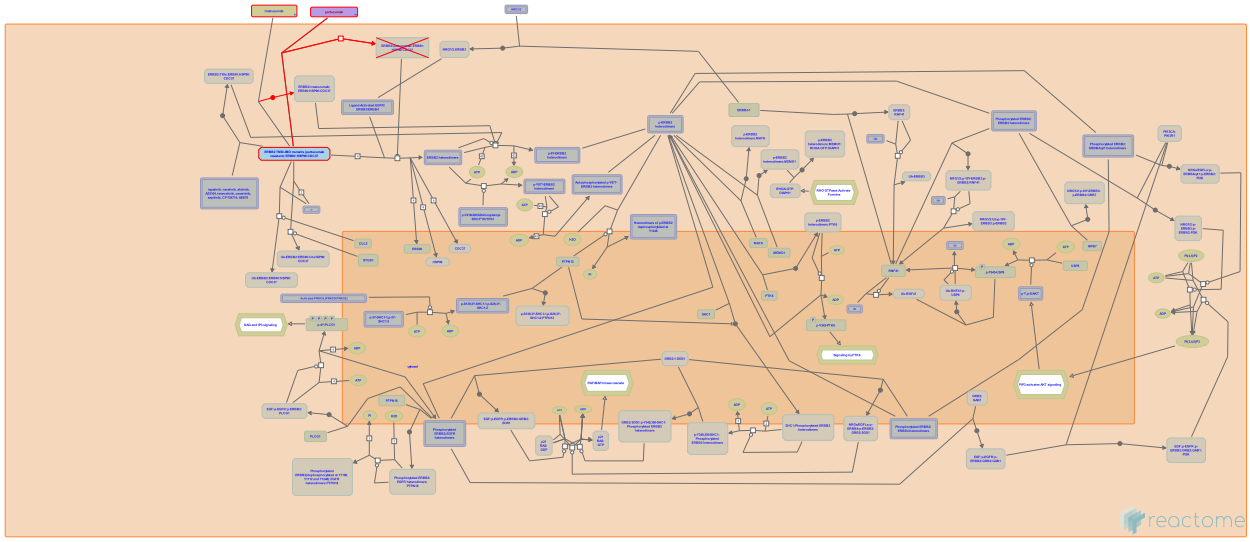
Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

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. ↗

Drug resistance in ERBB2 TMD/JMD mutants

Stable identifier: R-HSA-9665737

Diseases: cancer



With respect to pertuzumab, a therapeutic antibody that block ligand-driven heterodimerization of ERBB2, ERBB2 R678Q is sensitive to pertuzumab, while ERBB2 V659E, ERBB2 G660D, ERBB2 G660R and probably ERBB2 Q709L are resistant (Pahuja et al. 2018).

Literature references

Antony, A., Khanna-Gupta, A., Singh, A., Pahuja, KB., Kljavin, NM., Bueno, R. et al. (2018). Actionable Activating Oncogenic ERBB2/HER2 Transmembrane and Juxtamembrane Domain Mutations. *Cancer Cell, 34*, 792-806.e5.

Editions

2019-10-25	Reviewed	Bose, R., Krishna, A.
2019-10-31	Authored	Orlic-Milacic, M.
2019-11-01	Edited	Orlic-Milacic, M.
2019-11-03	Reviewed	Kancha, RK.

ERBB2 TMD/JMD mutants do not bind pertuzumab ↗

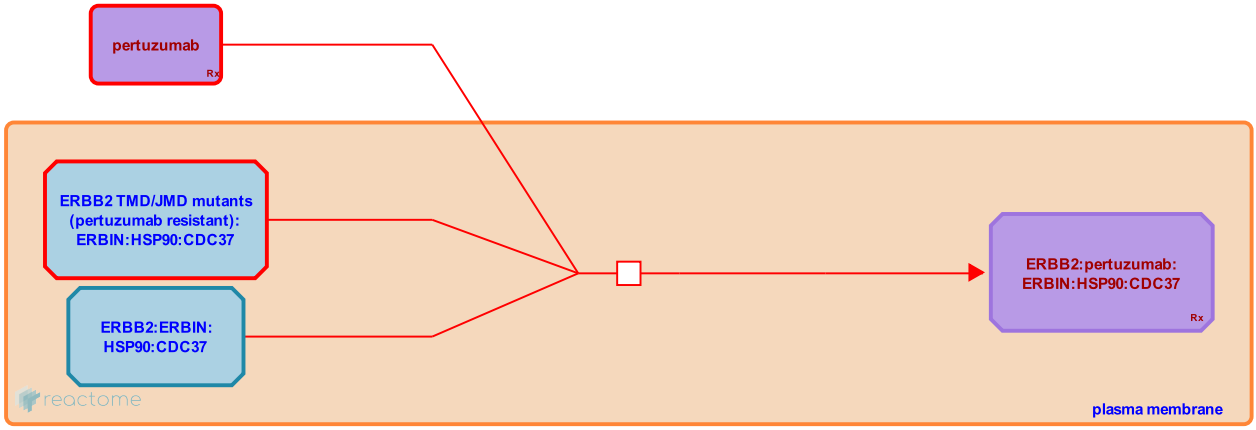
Location: Drug resistance in ERBB2 TMD/JMD mutants

Stable identifier: R-HSA-9665708

Type: transition

Compartments: plasma membrane, extracellular region

Diseases: cancer



ERBB2 V659E, ERBB2 G660D, ERBB2 G660R and probably ERBB2 Q709L are resistant to therapeutic antibody pertuzumab (Pahuja et al. 2018).

Literature references

Antony, A., Khanna-Gupta, A., Singh, A., Pahuja, KB., Kljavin, NM., Bueno, R. et al. (2018). Actionable Activating Oncogenic ERBB2/HER2 Transmembrane and Juxtamembrane Domain Mutations. *Cancer Cell, 34*, 792-806.e5. ↗

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