

EGF-induced dimerization of ligand-responsive EGFR mutants

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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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Reactome database release: 88

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

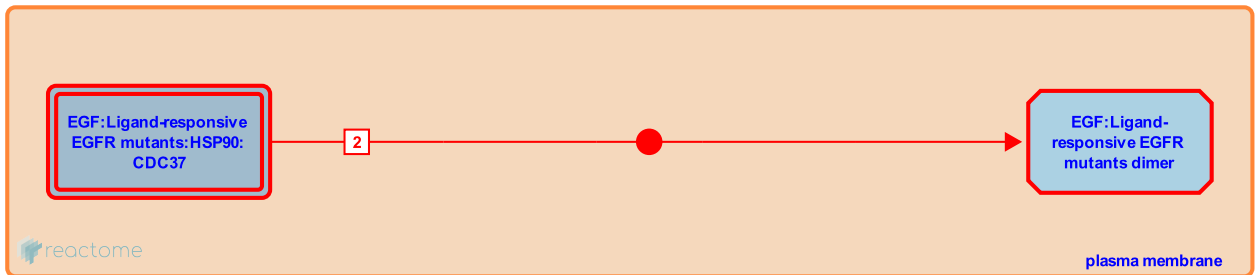
EGF-induced dimerization of ligand-responsive EGFR mutants [↗](#)

Stable identifier: R-HSA-1220613

Type: binding

Compartments: plasma membrane, cytosol, extracellular region

Diseases: cancer



Although ligand-responsive EGFR mutants dimerize spontaneously, dimerization is increased in the presence of EGF.

Literature references

Feng, WL., Hahn, WC., Chen, TH., Meyerson, M., Frank, DA., Sellers, WR. et al. (2005). Oncogenic transformation by inhibitor-sensitive and -resistant EGFR mutants. *PLoS Med*, 2, e313. [↗](#)

Li, Y., Meyerson, M., Woo, MS., Boggon, TJ., Greulich, H., Eck, MJ. et al. (2007). Structures of lung cancer-derived EGFR mutants and inhibitor complexes: mechanism of activation and insights into differential inhibitor sensitivity. *Cancer Cell*, 11, 217-27. [↗](#)

Alvarado, D., Red Brewer, M., Pozzi, A., Choi, SH., Lemmon, MA., Moravcevic, K. et al. (2009). The juxtamembrane region of the EGF receptor functions as an activation domain. *Mol Cell*, 34, 641-51. [↗](#)

Zhang, X., Kuriyan, J., Shen, K., Cole, PA., Gureasko, J. (2006). An allosteric mechanism for activation of the kinase domain of epidermal growth factor receptor. *Cell*, 125, 1137-49. [↗](#)

Editions

2011-11-04	Authored	Orlic-Milacic, M.
2011-11-07	Edited	Wu, G., D'Eustachio, P., Matthews, L.
2011-11-15	Reviewed	Greulich, H., Savas, S.