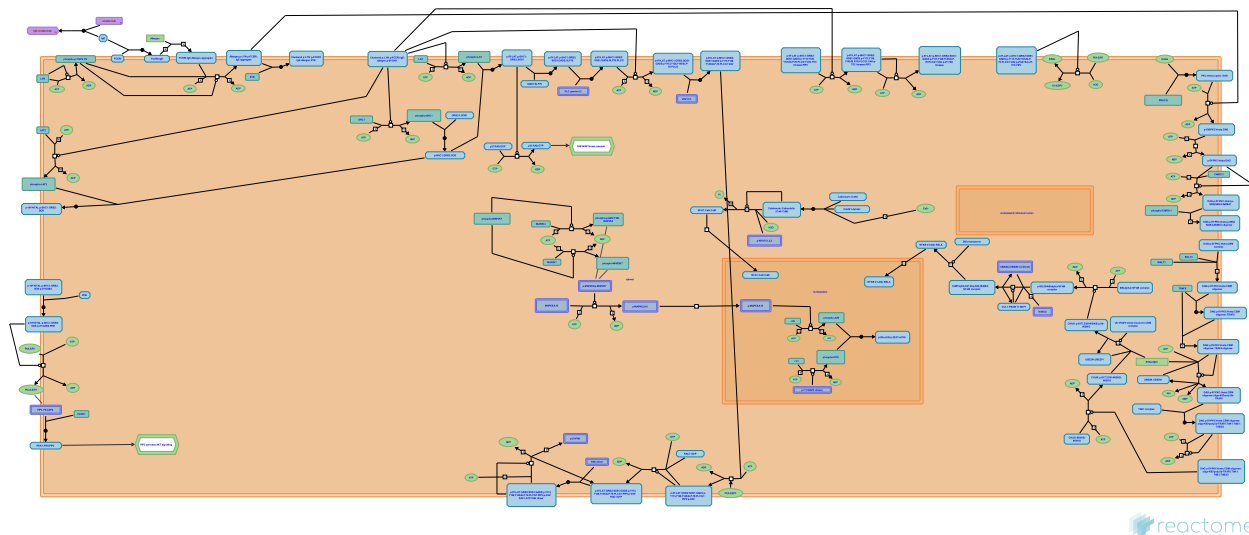


# Fc epsilon receptor (FCERI) signaling



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

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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](https://reactome.org/page/about-us).

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

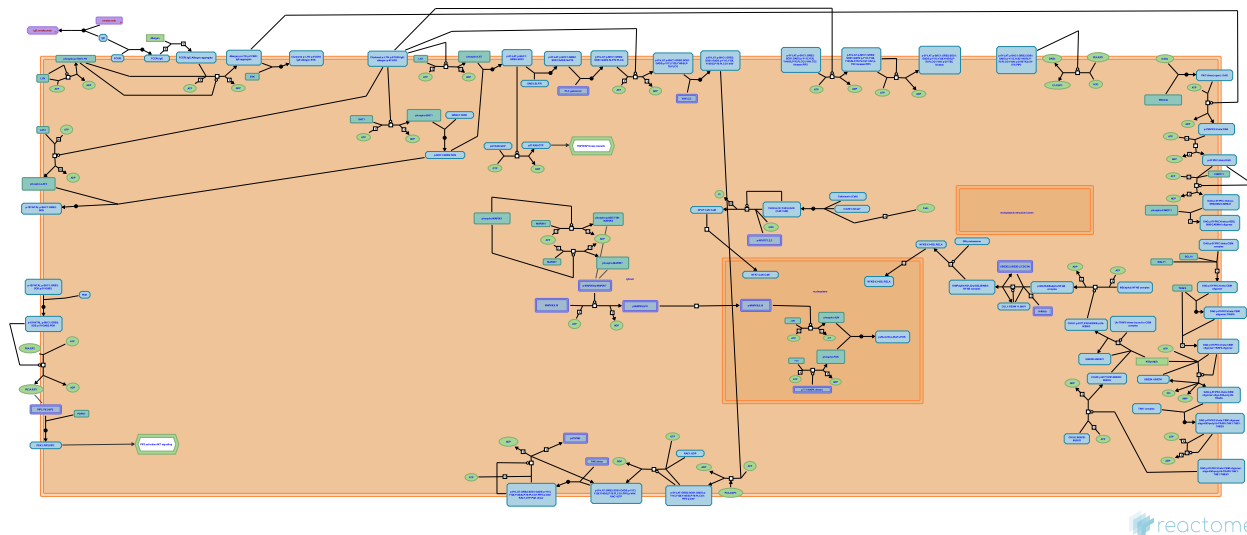
This document contains 5 pathways and 7 reactions ([see Table of Contents](#))

## Fc epsilon receptor (FCERI) signaling ↗

**Stable identifier:** R-CFA-2454202

**Compartments:** plasma membrane

**Inferred from:** Fc epsilon receptor (FCERI) signaling (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](https://www.reactome.org) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## IgE binds FCERI ↗

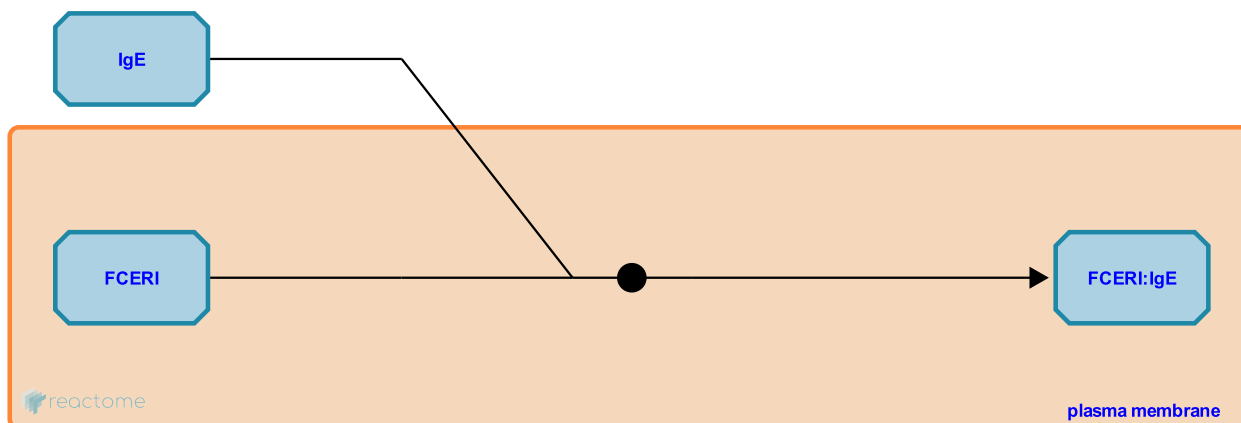
**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-9725206

**Type:** binding

**Compartments:** plasma membrane, extracellular region

**Inferred from:** IgE binds FCERI (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](https://www.reactome.org/docs/event_inference.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

**Followed by:** Allergen dependent IgE bound FCERI aggregation

## IgE binds omalizumab ↗

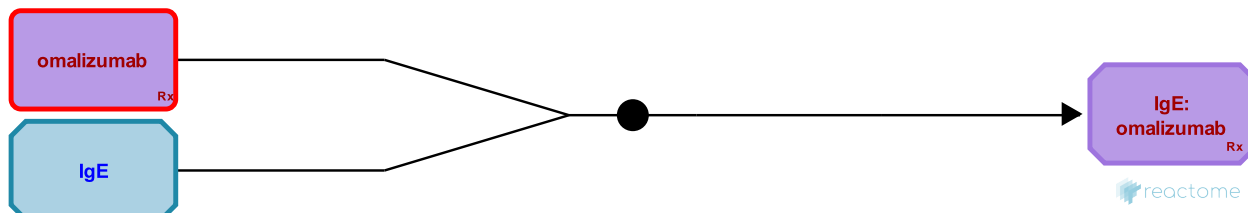
**Location:** [Fc epsilon receptor \(FCER1\) signaling](#)

**Stable identifier:** R-CFA-9724685

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [IgE binds omalizumab \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## Allergen dependent IgE bound FCERI aggregation ↗

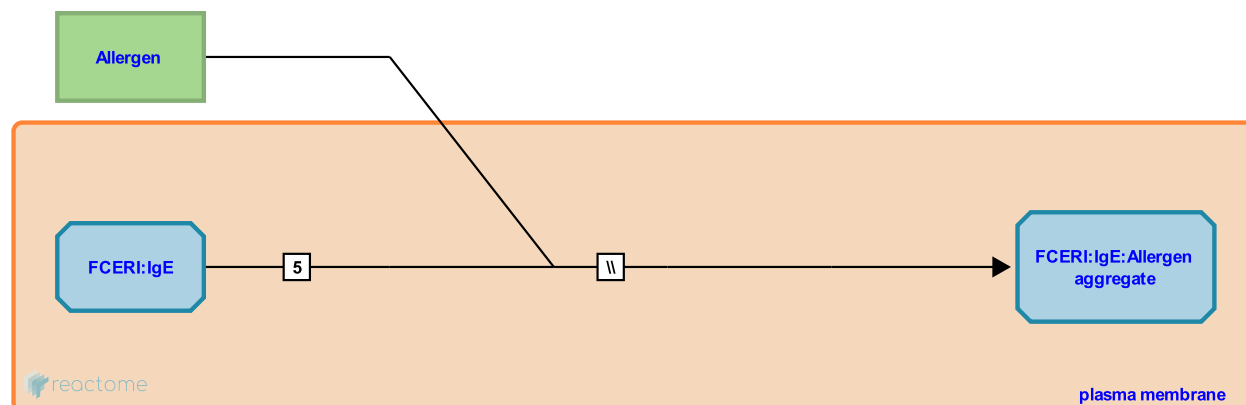
**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-2454192

**Type:** omitted

**Compartments:** plasma membrane, extracellular region

**Inferred from:** Allergen dependent IgE bound FCERI aggregation (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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**Preceded by:** IgE binds FCERI

**Followed by:** Phosphorylation of beta and gamma subunits by LYN

## Autophosphorylation of LYN kinase ↗

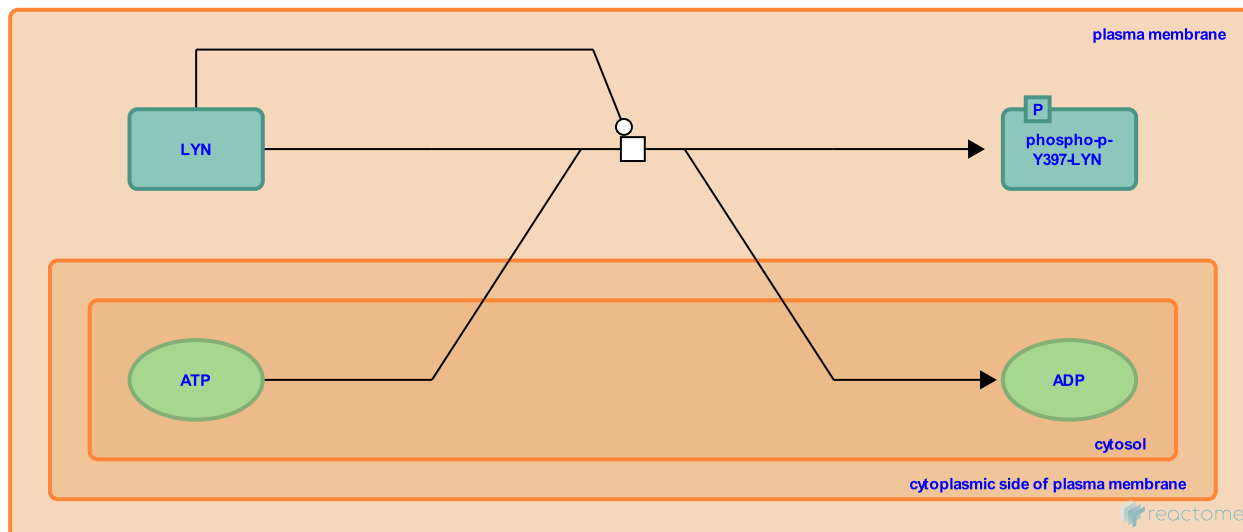
**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-2730862

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** Autophosphorylation of LYN kinase (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

**Followed by:** Phosphorylation of beta and gamma subunits by LYN

## Phosphorylation of beta and gamma subunits by LYN ↗

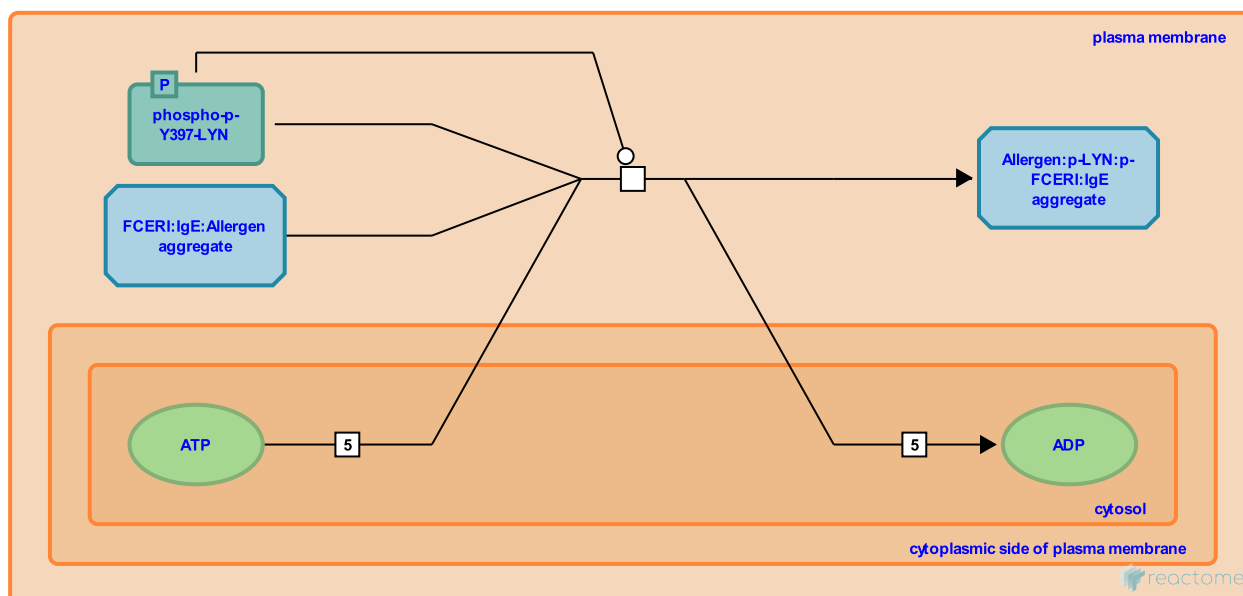
**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-2454208

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** Phosphorylation of beta and gamma subunits by LYN (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

**Preceded by:** Allergen dependent IgE bound FCERI aggregation, Autophosphorylation of LYN kinase

**Followed by:** Recruitment of SYK to p-FCERI gamma subunit



## Recruitment of SYK to p-FCERI gamma subunit ↗

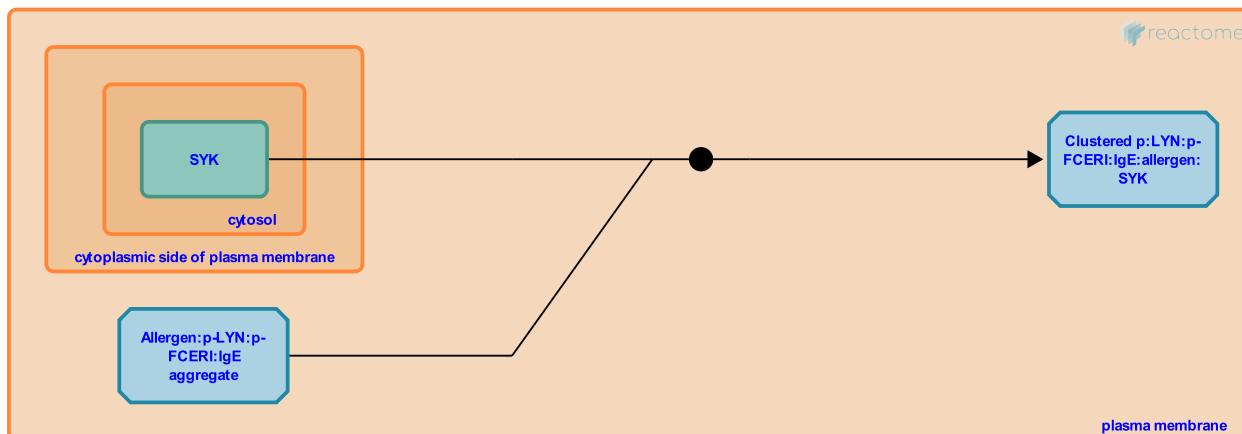
**Location:** [Fc epsilon receptor \(FCERI\) signaling](#)

**Stable identifier:** R-CFA-2454240

**Type:** binding

**Compartments:** plasma membrane, cytosol

**Inferred from:** [Recruitment of SYK to p-FCERI gamma subunit \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

**Preceded by:** [Phosphorylation of beta and gamma subunits by LYN](#)

## Phosphorylation of LAT by p-SYK ↗

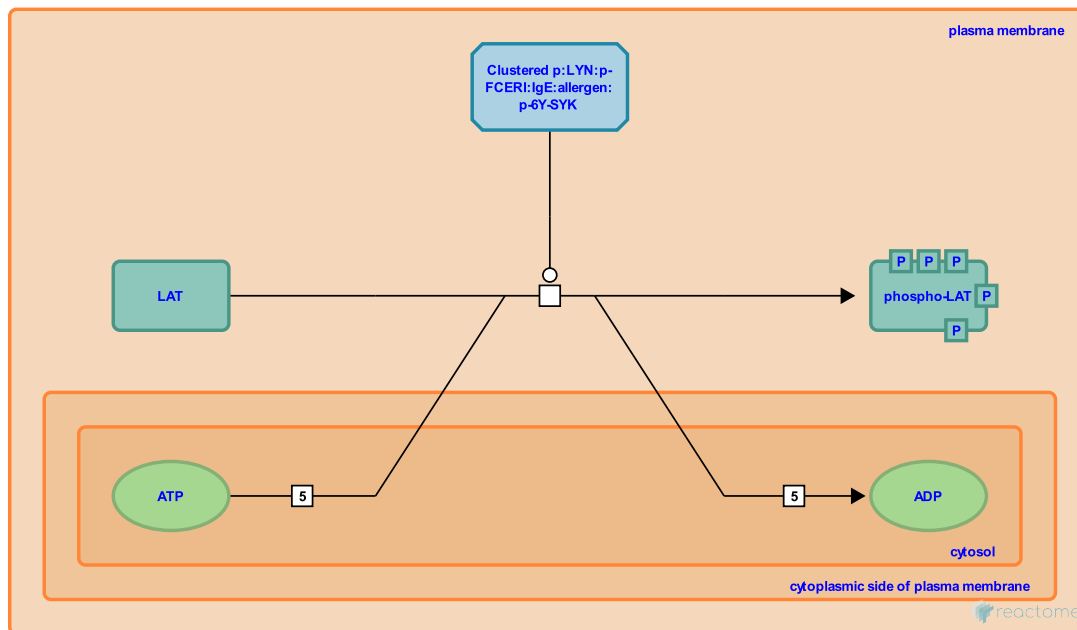
**Location:** Fc epsilon receptor (FCER1) signaling

**Stable identifier:** R-CFA-2730843

**Type:** transition

**Compartments:** plasma membrane, cytosol

**Inferred from:** Phosphorylation of LAT by p-SYK (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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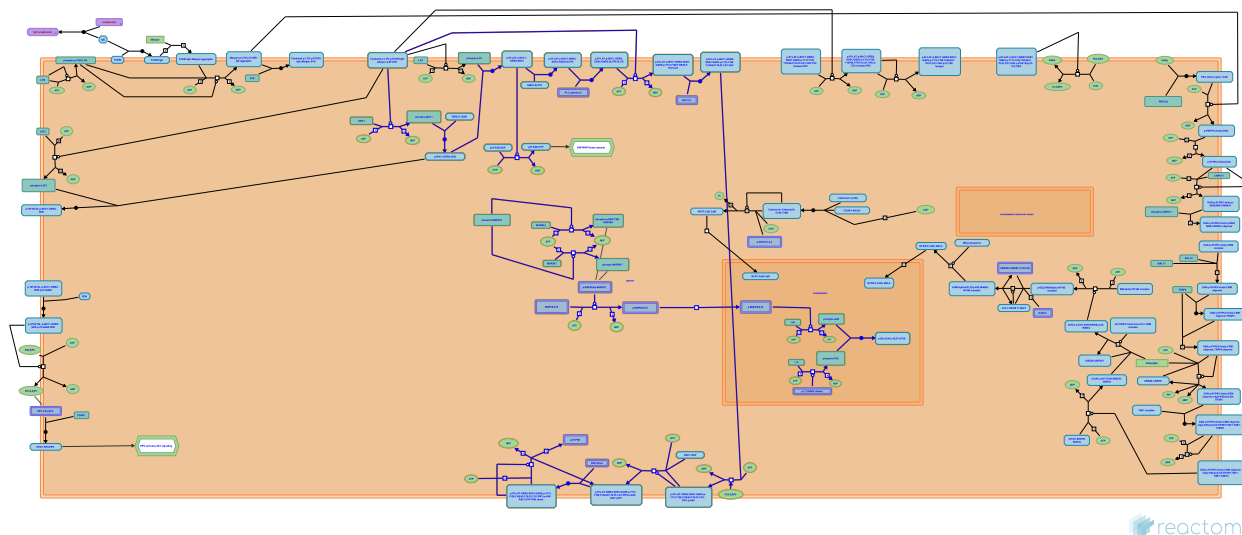
## FCERI mediated MAPK activation ↗

**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-2871796

**Compartments:** plasma membrane, nucleoplasm, cytosol

**Inferred from:** FCERI mediated MAPK activation (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

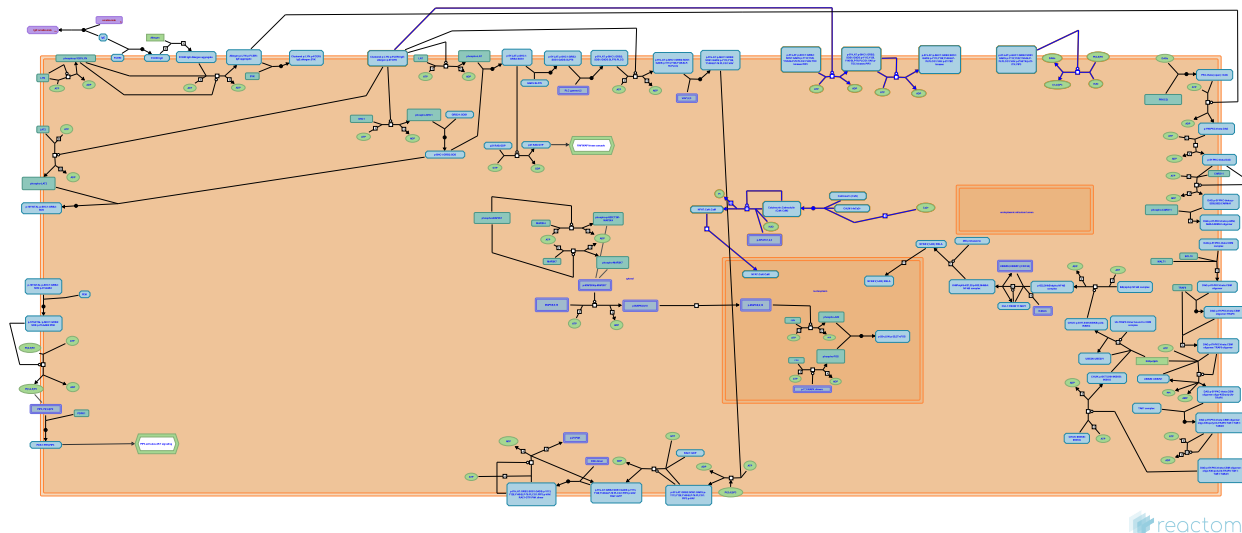
## FCERI mediated Ca<sup>2+</sup> mobilization ↗

**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-2871809

**Compartments:** nucleoplasm, plasma membrane, cytosol

**Inferred from:** FCERI mediated Ca<sup>2+</sup> mobilization (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

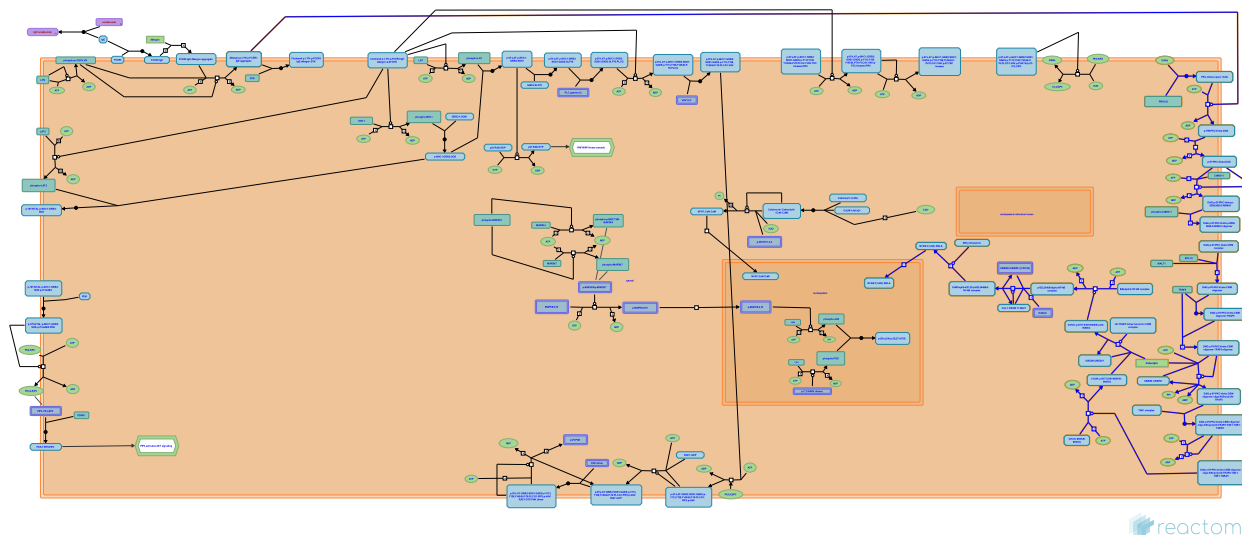
## FCERI mediated NF-kB activation ↗

**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-2871837

**Compartments:** plasma membrane, nucleoplasm, cytosol

**Inferred from:** FCERI mediated NF-kB activation (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

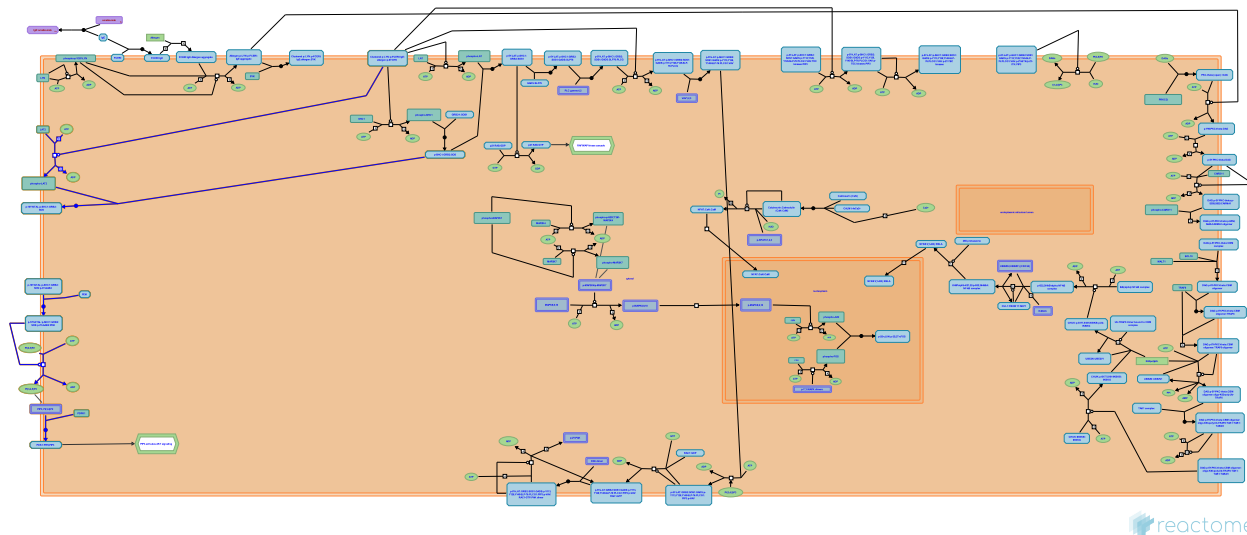
## Role of LAT2/NTAL/LAB on calcium mobilization ↗

**Location:** Fc epsilon receptor (FCERI) signaling

**Stable identifier:** R-CFA-2730905

**Compartments:** plasma membrane, cytosol

**Inferred from:** Role of LAT2/NTAL/LAB on calcium mobilization (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](https://www.reactome.org) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

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