

BMX phosphorylates RUFY1

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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

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Reactome database release: 70

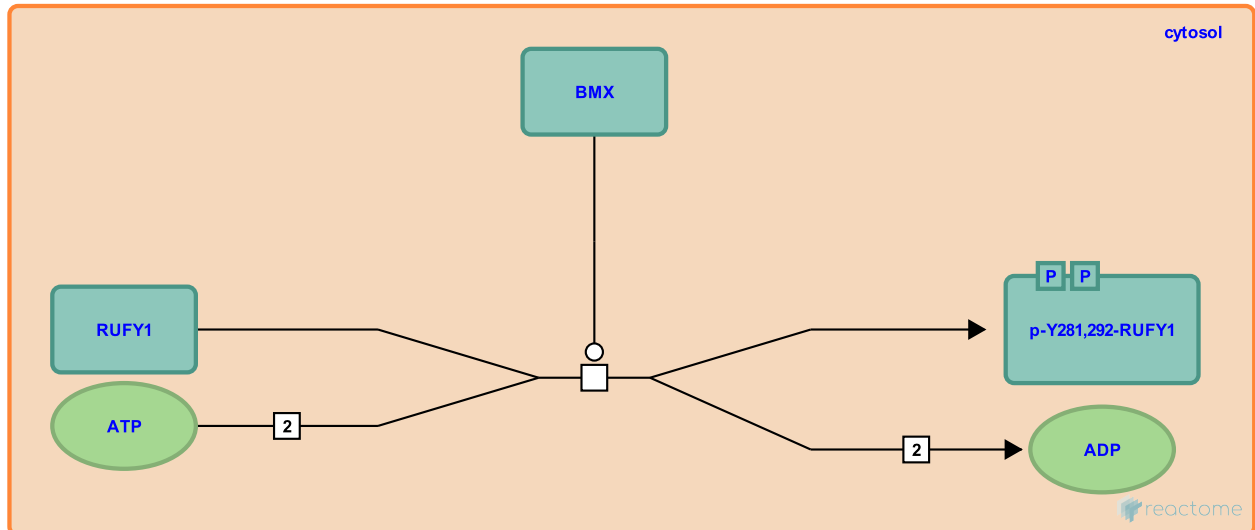
This document contains 1 reaction ([see Table of Contents](#))

BMX phosphorylates RUFY1 [↗](#)

Stable identifier: R-HSA-8871373

Type: transition

Compartments: cytosol



RUN and FYVE domain-containing protein 1 (RUFY1, aka RABIP4, ZFYVE12) associates with phosphatidylinositol 3-phosphate in membranes of early endosomes and may participate in early endosomal membrane trafficking of the glucose transporter GLUT4. RUFY1 is broadly expressed, with highest levels in lung, testis, kidney and brain. RUFY1 is localised to the cytoplasm and early endosomal membrane, the latter being the predominant localisation after RUFY1 is phosphorylated. Cytoplasmic tyrosine-protein kinase BMX (BMX, aka ETK) is a downstream tyrosine kinase of PI3-kinase which, through its SH2 and SH3 domains, binds to and phosphorylates RUFY1 at Tyr-281 and Tyr 292. These phosphorylations are essential for endosomal localisation (Yang et al. 2002).

Literature references

Yang, J., Kim, O., Wu, J., Qiu, Y. (2002). Interaction between tyrosine kinase Etk and a RUN domain- and FYVE domain-containing protein RUFY1. A possible role of ETK in regulation of vesicle trafficking. *J. Biol. Chem.*, 277, 30219-26. [↗](#)

Editions

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