FKBP1A binds tacrolimus

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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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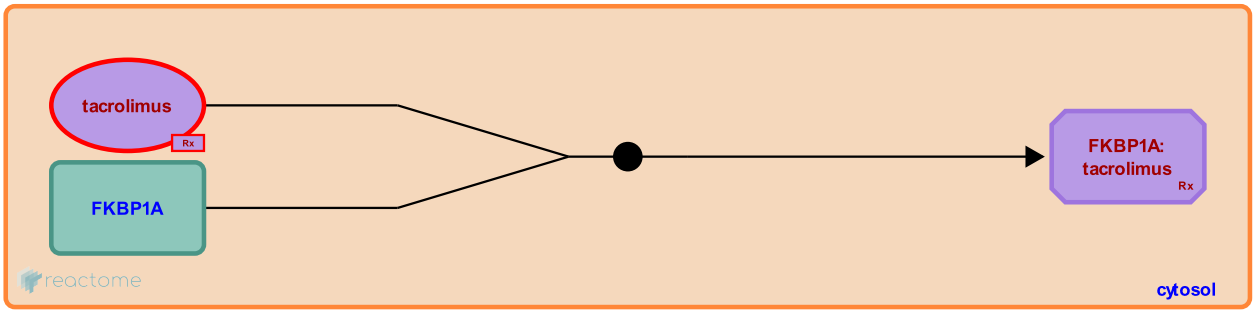
Stable identifier: R-HSA-9690461

Type: binding

Compartments: cytosol



Tacrolimus (also FK-506 or Fujimycin) is a macrolide compound obtained from Streptomyces hygroscopicus that acts by selectively blocking the transcriptional activation of cytokines thereby inhibiting cytokine production. It is bioactive only when bound to immunophilins. Tacrolimus is an immunosuppressive drug whose main use is after organ transplant to reduce the activity of the patient's immune system and so the risk of organ rejection. It reduces peptidyl-prolyl isomerase activity by binding to the immunophilin FKBP1A, creating a new complex. This complex inhibits calcineurin (Bierer et al. 1991) which inhibits T-lymphocyte signal transduction and IL-2 transcription (Kino et al. 1987, Ding et al. 2019).

Literature references

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Editions

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