

Progesterone Activation Of CatSper

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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: 88

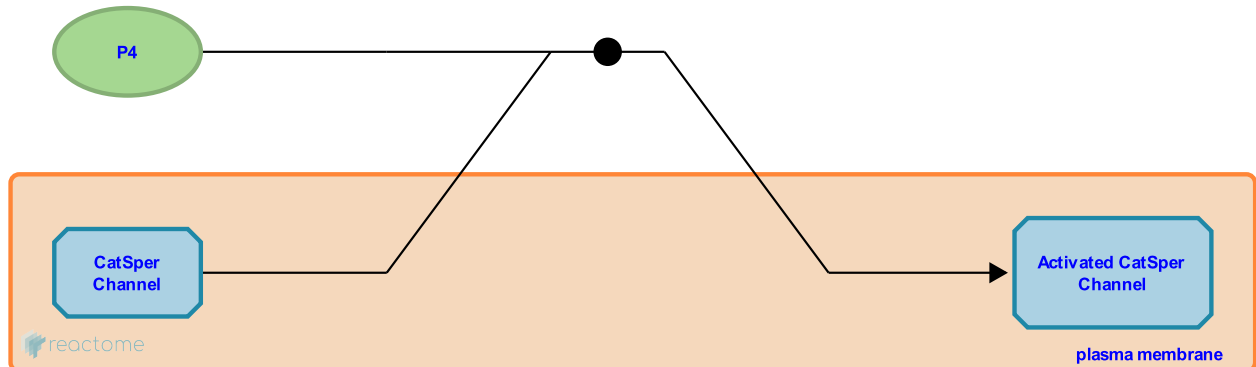
This document contains 1 reaction ([see Table of Contents](#))

Progesterone Activation Of CatSper [↗](#)

Stable identifier: R-HSA-2534388

Type: binding

Compartments: extracellular region



Steroid hormone progesterone released by cumulus cells surrounding the egg is a potent stimulator of human spermatozoa. It attracts spermatozoa towards the egg and helps them penetrate the egg's protective vestments. Progesterone induces Ca^{2+} influx into spermatozoa and triggers multiple Ca^{2+} -dependent physiological responses essential for successful fertilization, such as sperm hyperactivation, acrosome reaction and chemotaxis towards the egg. Progesterone dramatically potentiates CatSper calcium transport activity, identifying CatSper as the progesterone receptor of sperm.

Literature references

Weyand, I., Brenker, C., Goodwin, N., Seifert, R., Strünker, T., Kaupp, UB. et al. (2011). The CatSper channel mediates progesterone-induced Ca^{2+} influx in human sperm. *Nature*, 471, 382-6. [↗](#)

Botchkina, IL., Lishko, PV., Kirichok, Y. (2011). Progesterone activates the principal Ca^{2+} channel of human sperm. *Nature*, 471, 387-91. [↗](#)

Editions

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