

Slo3 Potassium Transport

Gillespie, ME., Lishko, PV.

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

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of [Creative Commons Attribution 4.0 International \(CC BY 4.0\) License](https://creativecommons.org/licenses/by/4.0/). For more information see our [license](https://reactome.org/licenses/).

04/05/2024

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

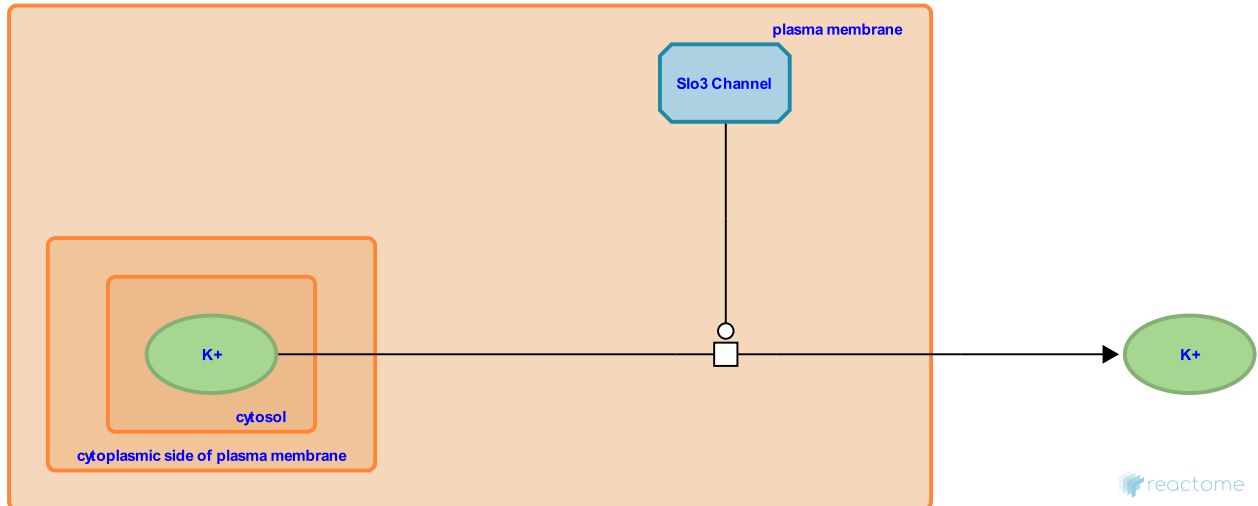
This document contains 1 reaction ([see Table of Contents](#))

Slo3 Potassium Transport [↗](#)

Stable identifier: R-HSA-2534365

Type: transition

Compartments: plasma membrane



Slo3 represents a new and unique type of potassium channel regulated by intracellular pH. Slo3 is sperm specific and controls membrane potential. Incapacitated murine spermatozoa hyperpolarize to approximately 60 mV during capacitation, an effect attributed to an increase in K⁺ permeability. KSper (potassium transport in sperm) is the dominant, if not the only, K⁺ selective channel in mouse epididymal spermatozoa.

Literature references

Schreiber, M., Saito, M., Yuan, A., Salkoff, L., Gaut, J., Wei, A. (1998). Slo3, a novel pH-sensitive K⁺ channel from mammalian spermatocytes. *J. Biol. Chem.*, 273, 3509-16. [↗](#)

Clapham, DE., Navarro, B., Kirichok, Y. (2007). KSper, a pH-sensitive K⁺ current that controls sperm membrane potential. *Proc. Natl. Acad. Sci. U.S.A.*, 104, 7688-92. [↗](#)

Editions

2013-02-13	Authored	Gillespie, ME.
2013-05-21	Reviewed	Lishko, PV.
2013-05-23	Edited	Gillespie, ME.