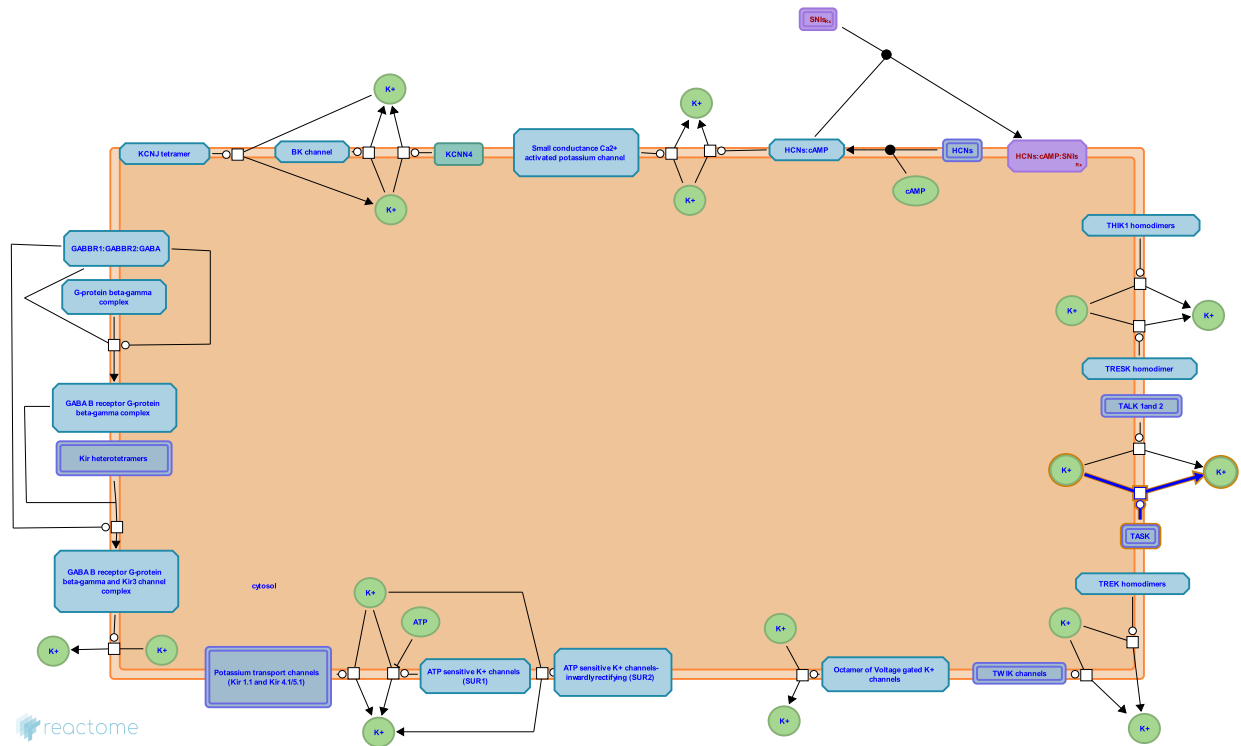


TWIK-related acid-sensitive K⁺ channel (TASK)



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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/textbook/).

20/05/2024

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

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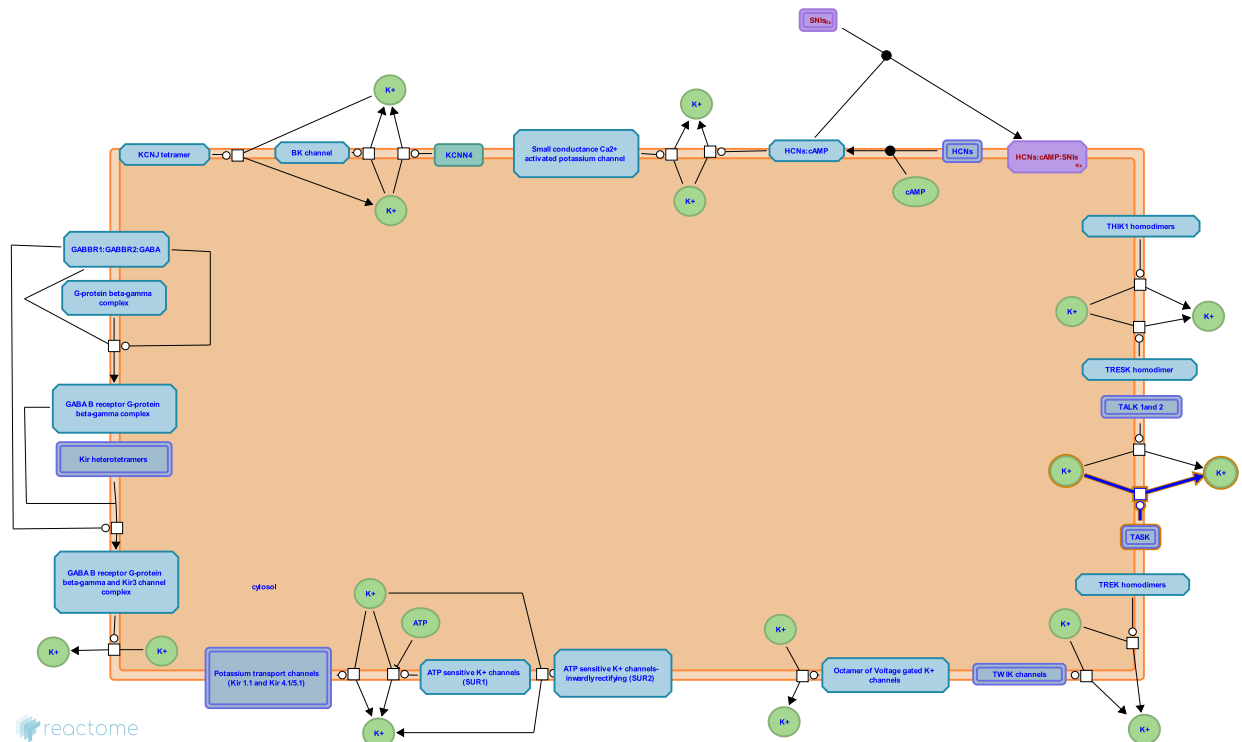
Reactome database release: 88

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

TWIK-related acid-sensitive K⁺ channel (TASK) ↗

Stable identifier: R-HSA-1299316

Compartments: cytosol, extracellular region, plasma membrane



TASK 1 and 3 are closely related both structurally and functionally. TASK1 and TASK3 are activated by extracellular acidification and inhibited by decrease in pH. TASK 1 and Task 3 form functional homodimers and heterodimers, however the biophysical properties of TAS1 and TASK3 heteromers are different form parent subunit properties.

Literature references

Melzer, N., Meuth, SG., Bittner, S., Kanyshkov, T., Wiendl, H., Budde, T. et al. (2008). Altered neuronal expression of TASK1 and TASK3 potassium channels in rodent and human autoimmune CNS inflammation. *Neurosci Lett*, 446, 133-8. ↗

Editions

2010-09-23	Reviewed	Jassal, B.
2011-05-22	Authored	Mahajan, SS.
2011-05-23	Edited	Mahajan, SS.

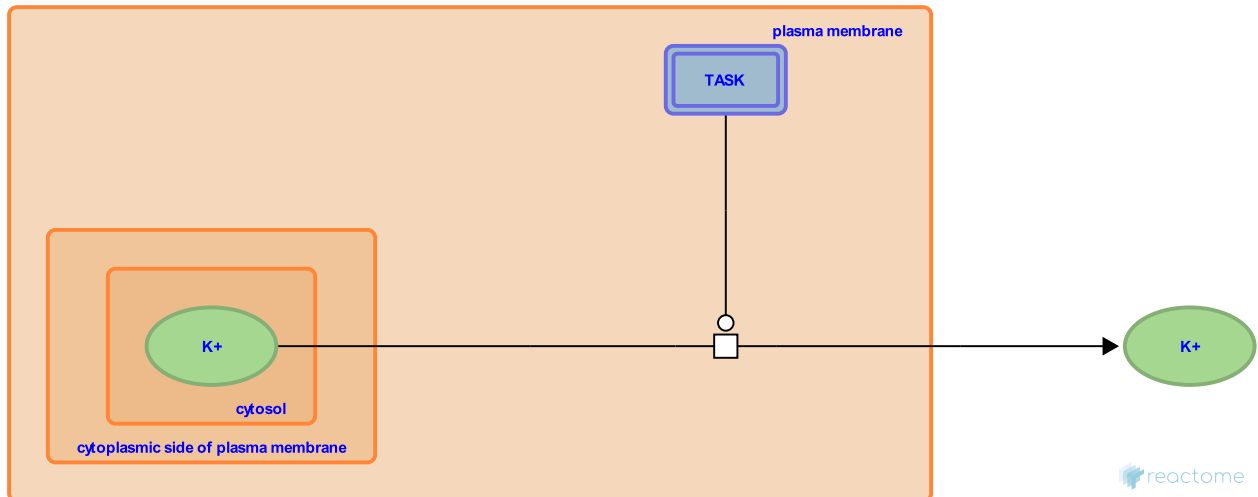
Activation of TASK ↗

Location: TWIK-related acid-sensitive K⁺ channel (TASK)

Stable identifier: R-HSA-1299318

Type: transition

Compartments: plasma membrane, extracellular region, cytosol



TASK are tandem repeat K⁺ channels that are sensitive to extracellular pH. Activation of TASK results in efflux of K⁺ into the extracellular space.

Literature references

Melzer, N., Meuth, SG., Bittner, S., Kanyshkov, T., Wiendl, H., Budde, T. et al. (2008). Altered neuronal expression of TASK1 and TASK3 potassium channels in rodent and human autoimmune CNS inflammation. *Neurosci Lett*, 446, 133-8. ↗

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