

SLC12A1,2 cotransports Na⁺, K⁺, 2Cl⁻ from extracellular region to cytosol

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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: 75

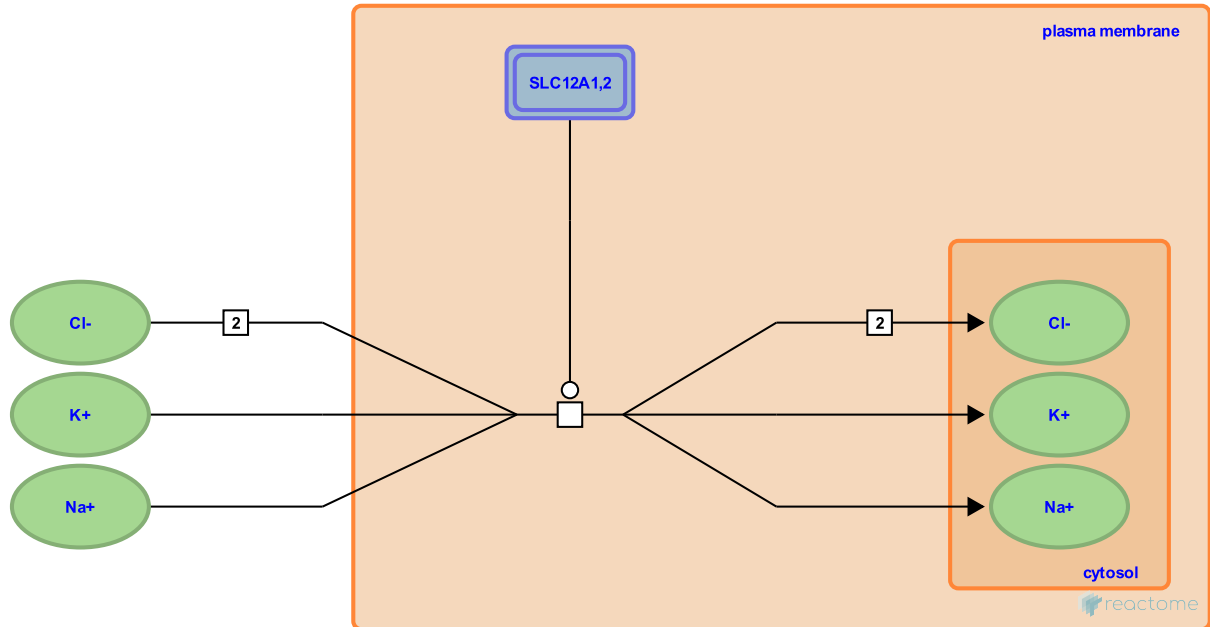
This document contains 1 reaction ([see Table of Contents](#))

SLC12A1,2 cotransports Na⁺, K⁺, 2Cl⁻ from extracellular region to cytosol ↗

Stable identifier: R-HSA-426086

Type: transition

Compartments: plasma membrane



Two genes (SLC12A1 and SLC12A2) encode Na⁺,K⁺/2Cl⁻ cotransporters (NKCC2 and NKCC1 respectively). SLC12A1 (Simon DB et al, 1996) is kidney-specific whilst SLC12A2 (Payne JA et al, 1995) is ubiquitously expressed. Two Cl⁻ ions are electroneutrally transported into cells with a Na⁺ ion and a K⁺ ion.

Literature references

Payne, JA., Xu, JC., Haas, M., Lytle, CY., Ward, D., Forbush B, 3rd. (1995). Primary structure, functional expression, and chromosomal localization of the bumetanide-sensitive Na-K-Cl cotransporter in human colon. *J Biol Chem*, 270, 17977-85. ↗

Simon, DB., Karet, FE., Hamdan, JM., DiPietro, A., Sanjad, SA., Lifton, RP. (1996). Bartter's syndrome, hypokalaemic alkalosis with hypercalciuria, is caused by mutations in the Na-K-2Cl cotransporter NKCC2. *Nat Genet*, 13, 183-8. ↗

Editions

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