

SLC13 – Human Na⁺-sulfate/carboxylate cotransporter family

Human gene name	New protein name	Former protein name & aliases	Predominant substrates	Transport type / coupling ions ^{*)}	Tissue distribution and cellular / subcellular expression	Link to disease	Human gene locus	Sequence accession ID	Number of transcripts, splice variants and their features
SLC13A1	NaS1	NaSi-1, Na-sulfate	sulfate, selenate, thiosulfate	C / Na ⁺ / SO ₄ ²⁻ / S ₂ O ₃ / SeO ₄ ²⁻	kidney, proximal tubular cells, brush border membrane	growth retardation, reduced fertility, seizures (KO mice)	7q31-q32	NM_022444	2.2kb and 2.7kb transcripts (both functional, with 3' UTR 0.5kb longer variant)
SLC13A2	NaC1	NaDC-1, SDCT1, NaDC-2	succinate, citrate, α-keto glutarate	C / Na ⁺ / succinate / citrate	kidney, intestine, brush border membrane	none	17p11.1-q11.1	NM_003984	one 2.8kb transcript only
SLC13A3	NaC3	NaDC-3, SDCT2	succinate, citrate, α-keto glutarate, glutaric acid and its derivatives	C / Na ⁺ / succinate / citrate	kidney proximal tubule basolateral membrane, liver, pancreas, brain, placenta	possible role in glutaric aciduria type I	20q12-q13.1	NM_022829	one 3.6kb transcript only
SLC13A4	NaS2	SUT-1	sulfate and oxyanions selenium and chromium	C / Na ⁺ / SO ₄ ²⁻ / oxyanions	placenta, tonsillar high endothelial venules, testis, heart	none	7q33	NM_012450	2.9kb (functional) and 4.5kb (function unknown) transcripts
SLC13A5	NaC2	NaCT	citrate, succinate and pyruvate	C / Na ⁺ / citrate / succinate/ pyruvate	liver, brain, testis	none	12p12-13	NM_177550	one 3.2kb transcript only

*) C: Cotransporter; E: Exchanger; F: Facilitated transporter; O: Orphan transporter

References:

Original version of the SLC table:

[Markovich D, Murer H.](#) The SLC13 gene family of sodium sulphate/carboxylate cotransporters. Pflugers Arch. 2004 Feb;447(5):594-602 (erratum: 816-817).

Questions & Comments