

TM1

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MAPRDTVYDH-----NDTQKRYDSSNNNLIE----GAGKIHIAEQLWGKGIIADVKRTVGHFWSEMINLNQ--KTVAVTILL 73
MFSKKI MVSFLSQSNINVSIIVILVLENMAPRDSVQA--NGKVDMKAYKSTVGNNNLIE--DAGKHIMPDPLWGKGIIIDFVKRTVGHFWLAEIINFNQ--KTVAVTLL 104
MAPRDTVYDH-----NAESMDKRDYDRSSNRLADIA--DAGKVMHDKPCPMWGKGIIISDVKRTVTHWKDEMINLNQ--KTVAVTILL 75
MSP QAVNDG-----SVTSIDKVKR-DEVRТИDFL--HHEHEHQNNG--WGRGIVKDFRKTRIGTHHWVNEMTNFNO--KSIAVSFF 72
MPPKHESQE-----DLKMSTSKQDEDVRTIDFL--DHDGQNQNG--WGRGIVKDFRKTVGHFWVNEMTNFNO--KSIAVSFF 73
MKGIRR-----DLRARAPLY-----KDDWSRSPRS IYTVVVNAFF 34
GRRPGKRSNYLRL-----SLPADRRTSVGSSKNKDNTDSTNNDATQSIEGTKEKDVKKEIYQFSPSYLEQI-DRMRGYRRKRQWK- 77
MTKPLT-----KLSDSMSVVPSPVDERE--NNKDDETFLFGFPFGIIRDYKARLPLFASSDIKDLGNV--QCLAATMF 67
MTTSDNDVKVEN-----GEAAAASPVANNDIEDKNTTEPSSQZQDSNNNGKPEKFQFLQTGIRDLTTRPLFYAKSDWSRSPKSIFTVINAIVF 87
-----AMTTAEASI-----DDKNTPLFE-SPFKGIARDYKMRPLYKSDITDGLN--QCLAICF 53
-----SICGRSSCSYYTRPRPQTINGDARQSMVLGRVYRSL-----TRLGSGANER--VTSGRTSVSRGERLGVLYGAESTDSTVSSDDV- 84
-----SPAkdPSFYK-----GLDINGCPDPLQQTGQLF-----GGLVRDIRRYPYLYLSDITDAFESP--QLAAVIF 62
-----TFPHDGGHG-----GGGHGDCEEIQRTRGFRC-----GGLIKIDIRKRAFFASFDYALNI--QALSALIF 57

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TM2

PtSLC4-1	MFITVIAPTLTFGAVY	GKVTE-----	RIGAETILATAWVGCTYALIGGMPMCIIIGSTGPVLA-----	FSTVIY-----	138
PtSLC4-2	MFITVIAPTLTFGAVY	GKVTE-----	RIGAETILATAWVGCTYSILGGMPMCIIIGSTGPVLA-----	FSTVIY-----	169
PtSLC4-4	LFISVIAPTLTFGAVY	GKVTE-----	RIGAETILATAWVGCTYALFGGMPMCIIIGSTGPVLA-----	FSTVIY-----	140
PtSLC4-3	IFFAAVAPAITFGAVY	SKTTN-----	AIGAVEMLIATAWCIVYALMGQQPIMINGGTGPVLA-----	FSAVLV-----	137
PtSLC4-5	IFFAAVAPAITFGAVY	SKTTN-----	AIGAVEMLIATAWCIVYALIGGQPIMINGGTGPVLA-----	FSAVLF-----	138
PtSLC4-52bd	AFIVQLIPALIFAEMLDRQTEG-----	-----	KLATAEALLSTAIGMIYIAVILAQGPILVIGITGPVALLGTSYSL-----	TE-----	103
PtSLC4-6	---RVLEEYSNGN-----	---STETT-----	-----AQKHAKNLFDTVSQE-----MRDIRR-----R-----	KKVYWS-----	123
PtSLC4-7	LFFACIAPAVFGGLFDVA-----	-----	TGGAIGTMEVMSSTALCGLYAIITSAQPIIIGSTGPVLAFACLAQLA-----	-----	135
TpSLC4-1	AFVVLQQLIPALIFAEMLDRET-----	-----	GNLAASAEITLLSAGIGIYIAISQGPITLLGITGPVAILLGTSYGLAE-----	-----	156
TpSLC4-2	LFFACIAPAVFGFALFGTATNG-----	-----	-----AIGTMEMVSSTAMCGIYIALTSQAQPLIIGSTGPVLA-----	-----VAALA-----	118
TpSLC4-3	---NAEGQDVVKVATINENKDDTNNTIAEELKVHQLKEAVEQQINQKEEFQAAVEKEVTEAVEVSKSASVNLGGAVITKSPGIFTFRFTFLATSEMNRNFARR-----	-----	-----RKYWISD-----	-----	192
hsSLC4A1	IYFAALSAPITFGGLGEKTRN-----	-----	OMGVSELLISTAVQGILFALLAQPILLVGVFGSPPLLVEAFFSFC-----	-----TN-----	133
hsSLC4A4	IYLATVTTNAITFGGLGDATDN-----	-----	MOGVLESFLGTAVGAIKFCLFAGOPOLITL-----	-----STGPVLVFERLLFNFSKDNNDFY-----	132

TM4

PtSLC4-1	---N-MSTNL-----DVPYYTFNAWISVWLGLGYCLIAFGFDITRYVRLA-----TR-----	FTDEIFALLIVSIFVMDAIGDPFSVGILRFLAPG-----	215
PtSLC4-2	---N-MSVSL-----DVPYYFAAWVSVWLGLGYCLIAFGFDITRYVRLA-----TR-----	FTDEIFALLIVSIFVMDAIGDPFSVGILRFLAPD-----	246
PtSLC4-4	---N-MSDSL-----DIPFLSLNAISIWAFLGYCLLAGEFDLTRYVRLA-----TR-----	FTDEIFALLIVSIFVMDAIGDPFSVGILRFLAPR-----	217
PtSLC4-3	---DIADNMD-----VNFLTLLNAWTGLWVA-GFLIIAAFVDLNRLKHA-----TR-----	FTDEIFALLIVSIFVMDAIGDPFSVGILRFLYLP-----	214
PtSLC4-5	---DIADNMD-----VNFLTLLNAWTGLWVA-GFLIIAAFVDLNRLKHA-----TR-----	FTDEIRALLIASIVFIDALGSPFSVGIVYWFTRS-----	215
PtSLC4-52bd	---TFNVEYP-----PFLFWICFWAGLMHI---LTAV--VGLVSLWKV-----TP-----	FTTQIFELFVAVSFVITYTSIRDLEPLYLQGQDTRSDR-----	178
PtSLC4-6	---WEDGFKNKRKVPIAFLFLYFACLSPAVSFGTIASEITGOSGIVCFLLSSGLSGMA-----YAMVCGQPMIFIAPGLTLAFISLGYRCFMVK-----	ALPFPFIYAWGLWTSFFFVLLG-----	234
PtSLC4-7	---KMLMLNP-----LQLYSWTLGLWT----SAILFVSSITSASNLNVKYL-----TR-----	FTDEIFSSLSCIFVFEAVSDVGRFTSS-----PASTFTK-----	209
TpSLC4-1	---QFDS-----EYWPEFWLICWTAILHF-----LTAI----TGLVNF-----	VWHISPFTQIFEFFFIGCSVFE-----SIRDLEVLHGLKN-----TYAS-----	230
TpSLC4-2	---KLAE-----VQALPFLPLIYAWGTIWT----SGILLA-----SVTSASNLNVKYL-----TR-----	FTDEIFSTLISFIFVVEAVQNI-----GKSFTNPASSFTK-----	195
TpSLC4-3	---WTDACKKKRQVIAFLFLYFACLAPAVSFGTIASEITGOSGIVCFLLSSGLSGM-----YSITCGPMIAFLPTGLTLAFISGLERFCITLRLNLPF-----	FVYAWGLWSSAFMMILG-----	303
hssLC4A1	---GLEYIVG-----RWVGFGL-----ILLVLLVVF-----GSFLVRFI-----SRYT-----	Q-----IFPSFLISLIFIYTSFKSLIKI-----FQDHPLQKTYN-----	205
hssLC4A4	LEFR-----IWIGLWSAFLCLLIVATDASFLOY-----TRFTEEGFSSLISIYTFDAAFKKMIKLAD-----	Y-----YPINSNFKGVNTLF-----ESCTCPVDPANISI-----NTDNTL-----	227

TM6

PtSLC4-1	-----HPSHEDNEDDPDYDYLKT[GFLSVIQLGLTSTSIIFFRSFKFSSFCNCQGV-----RTFSIHDFA-VTASVVTWTLVKELLFESVDTEGLKV-----PDQFEPTFACC--DASC 314
PtSLC4-2	-----HPSHEEDD--DPDYDYLK[GLLSIVLGLFGTTSLIFFFRSFKFSPFCNCQGV-----RTFSVHDFA-VTASVVTWTLVKELLFDVDTEGLKV-----PDQFEPTFACC--DSSC 343
PtSLC4-4	-----HPSHEDFEDDPYDYLKT[GLLSIVLGLFGTTSLIFFFRSFKFSPFCNCQGI-----RTFSVHDFA-VTASVVTWTLVKELLFDVDTEGLNV-----PERFEPTFACC--DASC 316
PtSLC4-3	-----HDSHDEFEDQEDSYMATAFLSAVLCLGLTTWLAFFI[RDIKFPSPYFPNDSW-----RTLISDEA-VVASILIWTLIANGLEDNVEREVRN-----PDSITPTQICC--TADC 313
PtSLC4-5	-----HDSHDEFEDQEDSYMATAFLSAVLCLGLTTWLAFFI[RDIKFPSPYFPNDSW-----RTLISDEA-VVASILIWTLIANGLEDNVEREVRN-----PDSITPTQICC--TADC 314
PtSLC4-52bd	-----SAQYASLLIGLITFYVVAWLHFA[TWVVFTR-QRVRT-----LLSNNTLLA-VVFGTALSYPGIDLAKDGTGA[GIFAAMIPGLMFFLLFIIDHN--VSSI 270
PtSLC4-6	LGGSQLIRFCRTFTDEVNALLNSVNFYIAYEAVSLRKRNFDLADPMNL[TMPFVSLAMAL-----STFWCT-A-KVAAAEKSKYLNQKIRSIVRDFGPVTFIFL--MSIF--NORA--WMKK 341
PtSLC4-7	-----ALLTLCACASTFTIATLKLGLRKTSLSFPVRN[TSINFAPТИGV-----VT-ASLIA-RWAR-----VHGHTKLAGLP-----SLSIPIAVFGTT--SGRP 290
TpSLC4-1	-----LVIGMLAFAICWRLHF[AEWTWLFSRQVRFTLTSYNAIMTVII[VTDQK-----DSNHGIER-----VHVRAWPD-WQPSVDRPWLIDPTE-GISTK-[GIFGALFPAMLYLLFIDHN--ISI 339
TpSLC4-2	-----GLMTVIVAVSTYFTANTLRLGRNNTVYFTKGIR[KNISNFGPTLGV-----VT-GALIA-RWARISQG-----AAATLPAL-----SIPATFATT--SGRP 275
TpSLC4-3	-----LSGSKSLIRCYTCRFTDEVFNGLLSVNFYIAYEAFSSLRRNFVNADPMLT[MPFVVALSMAL-----GTFST-M-KVVKFESSKKFNTVKVRGVKINFGBV-----SVILFFTLVNLPPWOK 410
hsSLC4A1	-----YNVLMVPKPGQPL[NTALLSLLKVICMAGTFLRMLKFKNS-----SYFPGKLR-RVIGDFGPVI-SILIMVLVDFFIQ-----DTYTQKLSV 285
hsSLC4A4	-----APELYLPTMSSTDMMY-----HNTTDFWALLSKKEC-SKYGGNLVGNCCNFVPPDITLMSFLFILEGLTYTSSMALKKFTSYFPYF-----STARLKI[SDEAI-----ILSLLIFCVI DALVGD 331

TM8

PtSLC4-1	LTFFFDDCLGQAAAAGTRSWFVFSFDNG---K GWPVIAAGPALLAF ---VLVYLDNGITWHLIYHKSHNLQHGEA---YN---YDLCLSGFFN FVNAML --GLPWLVATTVPCIIHL	419
PtSLC4-2	LTFFFDDCLQAAAAGTRSWFVFSFDNLG---K GWPVIAAGPAVLAF ---VLVYLDNGITWHLIYHKSHNLQHGEA---YN---YDLCLSGFFN FVNAML --GLPWLVATTVPCIIHL	448
PtSLC4-4	LTFFFDDCLQAAAAGTRSWFVFSFDNLG---K AWAFLAAGPAVLAF ---VLVLCFLDNGITWHLHKSHNLQHGEA---YN---YDLCLSGFFN FVNAML --GLPWLVATTVPCIIHL	421
PtSLC4-3	MTSFPDDCDPITPYGR-RSWIVDLAGVNG---K SWIPFFAAIIPALLAF ---ILVLFLLDDGITWHLHNPSNKLTHGDA---YN---WDTV-VIAAMIAVNSML-GLPWLVAAAT RSLTHV	417
PtSLC4-5	MTSFPDDCDPITPYGR-RSWIVDLAGVNG---K SWIPFFAAIIPALLAF ---ILVLFLLDDGITWHLHNPSNKLTHGDA---YN---WDTV-VIAAMIAVNSML-GLPWLVAAAT RSLTHV	418
PtSLC4-52bd	LTQLPKFKLK---K PAAYHWDFVVVG L---TFIPCAIL GLP PGNGLL-PQAPLHVRALCTKSYTDEHG--KREV---VT---HVEEQR--WSALAQSLSL-FIALASF QIISWIPR	370
PtSLC4-6	FKVPTLTVPSSFOLSGGRNFLINLN AIP ---NIK---LACVLPAILLT-SLEFFMDQNISVRRVNNPPDNKLNKKGA---YNL---DMVALGLITSCLSVL---GLPFWMCGATVQSLNVH	444
PtSLC4-7	WLVPILDFP--- VWARWAFLPALMATVLLFL DQNITVRLVNNPRWKMEKGRRKNNLVDG-MHA---DM FIVSILTAQSLV ---AIFWLVAAT RSLSHV	381
TpSLC4-1	L TQAKPYVNLK ---KPASYHWD FFCLGL ---TIVCPGLLGGPPGSLI---PQAALHTRALATRKILER-HGV---QKEV---TV---HVEEQR--WSALAQSLSL-FVALSFLTV WIPIK	438
TpSLC4-2	WLIPIMDLP--- VWARWGAVLPALMATVLLFL DQNITVRLVNNPSYKMEKGRRKNNLVDG-MHA---DM LVISVLTFLTSVL --GLPWLVAAAT RSISHV	366
TpSLC4-3	FHVPTLSVPDTQFLAGGRSF I VSLKEIPV---KVR---WLCALPAWLLT-C IFMDQNISVRLVNNPPDNKLNKKGEA ---YNM---DMVALGIGTV QSMNVH	513
hsSLC4A1	PDGFKVSN---SASSRGWVHPLP SE PIWM---FASALPALLWFILIFLESQ IT TLIVSKPERMKVKG---SGFH-L LLLUVGMGG ---VAALF-GMPFLSA T TPRVPTHA	386
hsSLC4A4	TPKLIIVSSEF-KPTSPNRGWVPPFCGNP--- QWV CIAAATPAVLLT IM MDOITAVTRVNRKFFHLKKGAGYH---LD---JEWVATLWICVSICLMAPEWVAAAT ISTAH	434

TM10

PtSLC4-1	NSL-AEKDKDGKFLSVQETRLT	MLFSHMLVGLSILALDVI	KLLPLPVLY	GVFLFMGLSSLPNQFWNRFLF	FMQPSQYPET-VYTRYMSKAR	-IH-KYTLIQIFF 521
PtSLC4-2	NSL-AEKDKDGKFLSVQETRLT	MLFSHMLVGFSSLALDVI	KLLPLPVLY	GVFLFMGLSSLPNMQFWNRFLF	FMQPSMYPEK-SYTKYMSKAR	-IH-KYTLQLLF 550
PtSLC4-4	NAL-ADKDKDGKFLSVQETRLT	PLFAHLLLVGVSILALDVI	KLLPLPVLY	GVFLFMGLSSLPNQFWNRFLF	FMQPSYEPET-VYTRYMSKAR	-IH-KYTLQIFF 523
PtSLC4-3	NAL-AERSENGKIISVQETRLT	LTHGICHLVLAALFALDVLKL	PVPLY	YGFLYMGVASLATNOFFQRLMFF	QPSKYDPEHTKFMAPKRM	-H-LFTGIO LGL 519
PtSLC4-5	NAL-AERSENGKIISVQETRLT	LTHGICHLVLAALFALDVLKL	PVPLY	YGFLYMGVASLASNOFFQRLMFF	QPSKYDPEHTKFMAPKRM	-H-LFTGIO LGL 520
PtSLC4-5 25bd	GCLFGIFLYLGLGALHVNEIWE	-RVRLCFVVRKKRPLPPIVRDPWPH	TVQLWTFIQSLALAI	FGVA-EFVE-	-IGYIYPALLTLLVPLRSY	458
PtSLC4-6	R----ALTETRFNERTRGEPEII	-GVTETRTGFGAVHALICSTLA	IPLPPLRFPVPI	----PVVAGVFLFLCRKLMGSNSFLQRIRDCAF	-VEKSRLP-----	528
PtSLC4-7	G----ALSKYDKE-GKV	-VGTIEQRMGTSIHSLGCAVFL	-SKPRNL	LTQVPLPVMLGLFMYLGTSSLP	GNEMWERVTGLF-----	K-DKTV----- 461
TpSLC4-1	GA-----	FDFGVLVLYLGVGALHGNEIWHIT	LSFMVYAKRPPIVANVKWS	TVOLYTVLQVCAAIFI	FGVA-QFAS-----	VGYIYPALLVALVPIRSY 526
TpSLC4-2	R----ALSIFDSV--GKL	-KSTIEQRTITGFSIHTLIGACVLF	-NKPRALA	LTTQIPTPVMLGLFLF	LGTSALPGNEMWERIKEMF-----	K-DSSI----- 446
TpSLC4-3	R----AMSEMVKVNEETGTETVE	-V-TETRLTGFTIHALLASTV	LPLLWPKIKI	-----PVVSGVFLFLGRKLMGTNTFKRVTDAF	-AESKRRL-----	596
hsSLC4A1	N----ALTVPMGKASTPGAAQI	OEVKEQRISGLLVAVLVLGSI	PEPLSRSLP	-AVLGFIFLYMGVTSLSGI	QJLKF-DRILLPQPKPYHDHPVY	-VKRKTWT----- 482
hsSLC4A4	DSTKMPFTSETSPAPGKPEFL	GVPFRVTCGTVLVEVTLGTSV	EFMADRKLI	EFMADRKLI	EFMADRKLI	WHLFTELQVLCIALLWIKST----- 552

TM13

	TM3	TM4	
PtSLC4-1	FALVFFIVQNFKIAIAIVPFLMLTLLCIPARLYFLPRFFEG-----WELMLLDGEDEQIIRE-----WEEAKQSMSLSSD-----ELRVRGTTKHD-----MKVDDGDDASSDEQV-----	612	
PtSLC4-2	FSLVFFIVQNFKVIAIAAFPLMLTLLCIPARIYLPKFFEG-----WELLLLDGDEDIIRR-----WEAAKHESMLEG-----DLRAGTTKHEVPI-----DDGDSDDVANDS-----	642	
PtSLC4-4	FALVFFIVQNFKVIAIAIVPFLMLTLLCIPARLFPLPRFFEG-----WELLLLDGDEDIAISQ-----WEEAKQRSMSLSED-----ELRMATKHDMDKID-----DGEDEEESSEDHV-----	615	
PtSLC4-3	FVILTVFVRSISVIAIAFPVIKACIPVRYMLPRLPFTEELIMIDTDSIVDEYLSYKE-----FRGEKIIPVRHRGQQPEEEPVPMRVEHPLN-----HVAADDGSSENSGNKV-----	624	
PtSLC4-5	FVILTVFVRSISVIAIAFPVIKACIPVRYMLPRLPFTEELIMIDTDSIVNEYLEYKE-----SKGEKPVVRHCQEPEEVPMQLVTQDHP-----RIDDGSDEEGSVEQV-----	623	
PtSLC4-5 ^{2bd}	VI-----ERI-----FKKED-----MKHLNVFSKKKT-----	480	
PtSLC4-6	-----ADHPIRYIGR-----KKNTI-----FTVQIGCLGLWWF-KQNNTTA[FFPSVIGLMLI-RAFVFIPKVTFEDEL-----IDLGDPSN-----	601	
PtSLC4-7	-----APKQRWSKDVP-----DKVTS-----TFTLIVQA-CQGMAMF-----WVKES[FGVLFPV-----VIAMLAIRPFAE-----KQGIKKEYMDVLDEE-----	533	
TpSLC4-1	FV-----AWCFSENDLQYLDPIGETEADH-----EKTKYLERRSVDNEAH-----QLPMTSDFHABEGIKKDFATSEARSRETTGNDSTIE-----MSAESTLIRRHQASAAGE-----	623	
TpSLC4-2	-----APKERWSAVP-----RKVIS[FTTAIQMACLGAMYVKES[PIGVLFPV-----VIALLAPIRFYIE-----KSGVVEKEYIDILED-----	517	
TpSLC4-3	-----EDHPINLLGR-----KKMNAFTGIVQLCLLGFLFA-KQIPSITIFFPAMILFLMFI-RSFVILPKYFSEEEF-----VALEDPTPS-----	669	
hsSLC4A1	-----RMHIFTGQIICLAVLWVVKSTPASLALPFLVILITVPLRR-----VLLPLIFRNVELQCLDDAKADATFDEEEG-----REDEVAMPV-----	562	
hsSLC4A1	VAAITFEPVMTLIAVAPZKCMDPLFESQWDISELDDVLE-----KDKKKKKEDDEKKKKK-----KKGKSISDNDDPSDRCPEYVKSISLTLMPTDMEOCPREFSDSKSPDSEPSRTFEPHTSC-----	661	