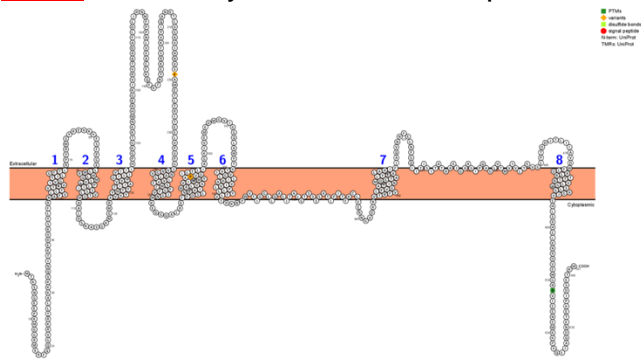


# Glutamate transporters

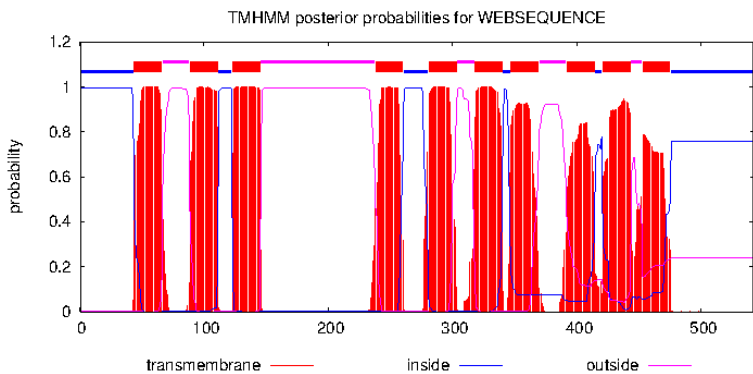
**EAA1**=Excitatory amino acid transporter 1= SLC1A3, [P43003](#), 542aa



>sp|[P43003](#)|EAA1, HUMAN Excitatory amino acid transporter 1

MTKSNGEPEPKMGGRMERFQQGVKRTLLAKKKVQNI	TKEDVKS	YLFR	NAFVLLT	VTAVIV	60	
GTILGFTLRPYRMSYREVKYFSFPGELLMRMLQMLVLP	LISS	LV	TGMAAL	DSKASGKMG	120	
MRAVVYYMTTIIIAVVGIIIVII	IHPGKGT	KENMHREGKIVRV	TAADAF	LDLIRNMFP	180	
NLVEACFKQFKTNYEKRSFKVPIQANETLVGAVINN	VSEAMETL	TRITEEL	VPVPG	SVNG	240	
VNALGLVVF	SMCF	GFVIGNMKEQ	QALREFF	DSLNEA	IMRLVAVIMWYAPV	300
IVEMEDMGVIGGQLAMYT	TVVIVGLLIH	AVIVLPLLYFLV	TRKNPWV	FIGGLLQAL	ITAL	360
GTSSSSATLPITFKCLEENNGVDKR	TRFVLPV	GATINMDGTALYEALAA	IFI	AQVNNFE	420	
LNFGQIITISITATAASIGAAGIPQAGLV	TMVIVLTSVGLPTDDITLII	IAVDWFL	DRLRT	480		
TTNVLGDSL	GAGIV	EHLSRHELKNRDVEMGNSVIEENEMKKPYQLIAQD	NETEKP	IDSET	540	

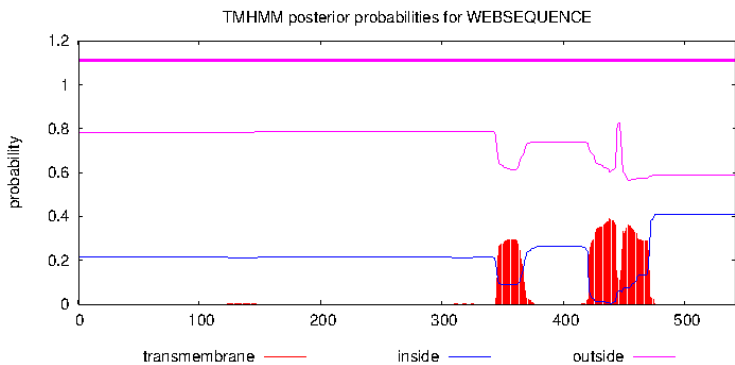
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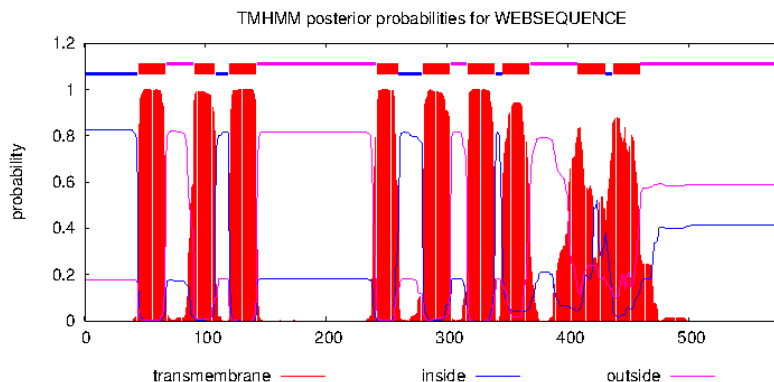
QTY variant, EAA1<sup>QTY</sup> **L**-> **Q**; **I, V**-> **T**; **F**-> **Y** (=QTY code)

MTKSNGEPEPKMGGRMERFQQGVKRTLLAKKKVQNI	TKEDVKS	YLFR	NAYTQQT	TTATTT	60	
GTTQGYTQRPYRMSYREVKYFSFPGEQQMRMQMQTQ	PQTSSQ	TGMAAL	DSKASGKMG	120		
MRATTYYMTTTTTATTTGTTTTTT	IHPGKGT	KENMHREGKIVRV	TAADAF	LDLIRNMFP	180	
NLVEACFKQFKTNYEKRSFKVPIQANETLVGAVINN	VSEAMETL	TRITEEL	VPVPG	STNG	240	
TNAQGQTTYSMCYGYTTGNMKEQ	QALREYYDSQ	NEATMRQTAT	TMWYAPTGTQYQT	AGK	300	
IVEMEDMGVIGGQLAMYT	TTTTTGQQT	HATTTQPQQYYQT	TRKNPWV	FIGGLLQAL	ITAL	360
GTSSSSATLPITFKCLEENNGVDKR	TTRYTQPT	GATTNMDGTAQYEAQAATYT	AQVNNFE	420		
LNFGQIITISITATAASIGAAGIPQAGLV	TMVIVLTSVGLPTDDITLII	IAVDWYQDR	QRT	480		
TTNTQGDSQ	GAGTTEHLSRHELKNRDVEMGNSVIEENEMKKPYQLIAQD	NETEKP	IDSET	540		

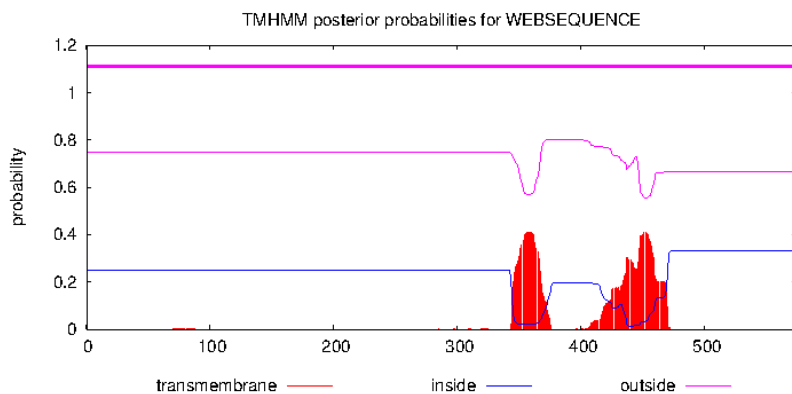
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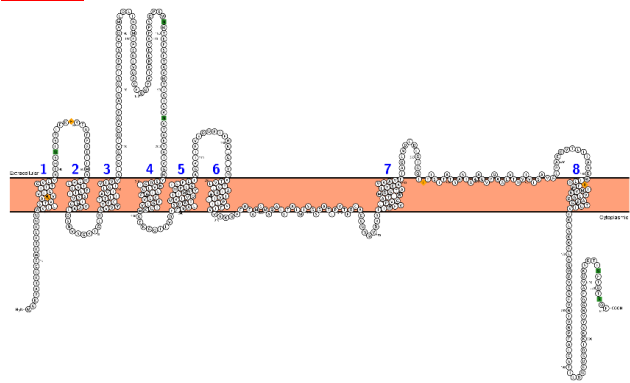
MASTEGANNMPKQVEVRMHDShLGSEEPKhrHLGLRLCDKLgknLLLTLTVFGVILgAVc  
GGLRLASPIHPDVVMLIAFPgDILMRmLKMLILPLIISsLITgLSGLDAKASgRLGTRA  
MvYYMSTTIIAAVLGVILVLAIHpgNPKLKKQLGPGKKNDEvSSLDaFLDLIRNLfPENL  
VQACFQQIQTvTKKVLVAPPPDEEaNaTSaVVSLlNETvTEvPEETKMvIKKgLEFKDGM  
NVLGLIGFFIIAFGIAMgKMgDQAKLMVDFFNIlNEIvMKLVIMIMWYSPLGIACLIcGKI  
IAIKDLEVVARQLGMymVTvIIgLIIHGGIFLPLIYfVvTRKNpFSFFAGIfQAWITaLG  
TASSAGTLpVtFRcLEENLGIDKRvTRfVLpVGATINMDGTALyEAVAAIfIAQMNGvVL  
DGGQIVtVSLtATLASvGAASIPsAGLVTmLLILtAVGLPTEDISLLvAVDWLLDRMRTS  
VNvVGDSfGAGIVYHLskSELDtIDSQhRVhEDIEMTKtQSIYDDMKnhRESnSNQCvYA  
AHNSvIVDECKvTLAANGKSADCSVEEEpPKREK



MASTEGANNMPKQVEVRMHDShLGSEEPKRRHLGLRLCDKLGNQOOTQTTYGTTQGATC  
GGQRLASPIHPDVMILIAFPGDILMRMQKMOTOPQTTSSQTTGSGQDAKASGRLGTRA  
MTYYMSTTTTAAATQGTQTQATHPGNPKLKKQLGPGKKNDVESSLDADFLLIRNLFPENL  
VQACFQQIQTVTKKVLVAPPPDEEANATSAVVSLNETVTEVPEETKMVIKKGLE YKDGM  
NTQGOTGYTAYGTAMGKMGDQAKLMVDYYNTQNETTMKQTTMTMWYSPQGTACQTCGKI  
IAIKDLEVVARQLGMYMTTTTTGQTHGGTYQPQTYTTTRKNPFSFFAGIFQAWITALG  
TASSAGTLPVTFRCLEENLGIDKRTTRYTQPTGATTNMDGTAQYEATAATYIAQMNGVVL  
DGGQIVTVSLTATLASVGAASIPSAGLVTMLLILTAVGLPTEDISLLVAVDWQDRMRTS  
TNTTGDSYGAGTYHLSKSELDTIDSQHRVHEDIEMTKTQSIYDDMKNHRESNSNQCVYA  
AHNSVIVDECKVTLAANGKSADCSVEEEPWKREK

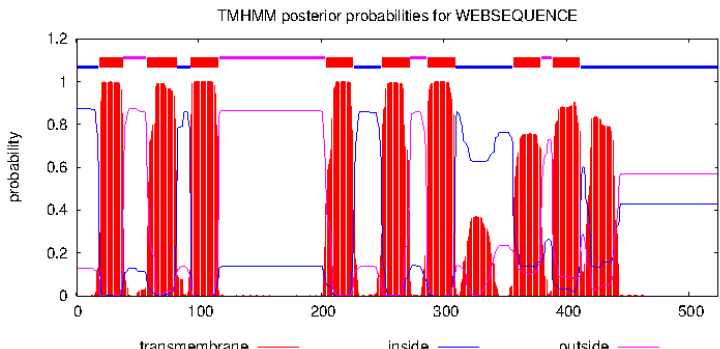


EAA3=Excitatory amino acid transporter 3= SLC1A1, [P43005](#), 524aa



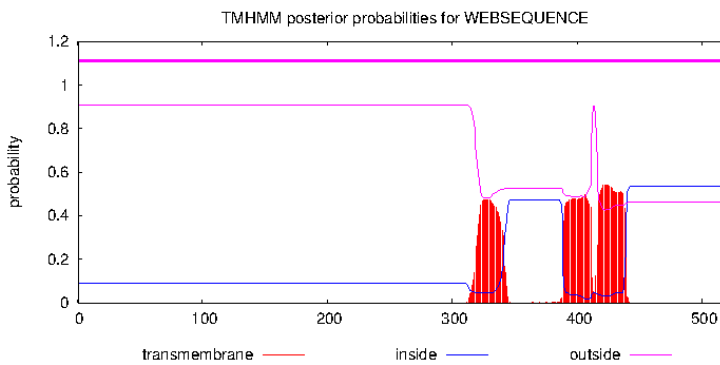
>sp|[P43005](#)|EAA3, HUMAN Excitatory amino acid transporter 3

MGKPKARKGCEWKRFLKNNWVLLSTVAAVVLGITTGVLVREHSNLSTLEKFFYFAFPGEILM  
RMLKLIILPLIISSMITGVAALDSNVSGKIGLRVAVVYFCTTLIAVILGIVLVVSIKPGV  
TQKVGEIARTGSTPEVSTVDAMLDLIRNMFENLVQACFQQYKTKREEVKPPSDPEMNMT  
EESFTAVMTTAAISKNKTKEYKIVGMYSBGINVLGLIVFCLVFGGLVIGKMGKEGQIILVDFE  
NALSDATMKIVQIIMCYMPLGILFLIAGKIIIEVEDWEIFRKLGLYMATVLTGLAIHSIVI  
LPLIYFIVVRKNPFRFAMGMAQALLTALMISSSSATLPVTFRCAEENNQVDKRIITRFVLP  
VGATINMDGTALYEAAVFAIQLNDLDLGIGQIITISITATSASIGAAGVPQAGLVTMV  
IVLSAVGLPAEDVTLLIAVDWLLDRFRTMVNVLGDAFGTGIV EKLSKKELEQMDVSSEVN  
IVNPFALSTILDNEDSDTKKSYVNGGFAVDKSDTISFTQTSQF

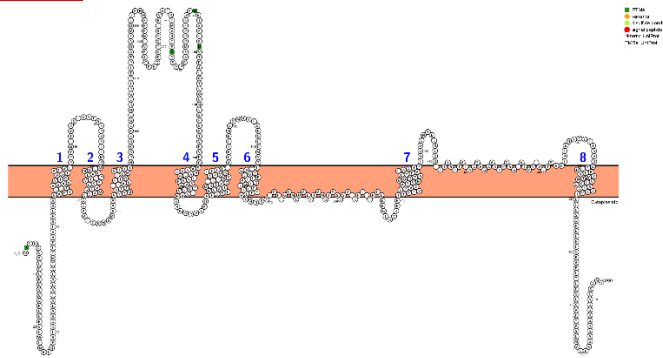


QTY variant, EAA3<sup>QTY</sup> L-> Q; I, V -> T; F -> Y (=QTY code)

MGKPKARKGCEWKRFLKNNWTQQSTTAATTQGTITGTQTREHSNLSTLEKFFYFAFPGEILM  
RMQKQTTQPTTSSMTTGTAQDSNVSGKIGLRATTYYCTTQTATTQGTQTTSIKPGV  
TQKVGEIARTGSTPEVSTVDAMLDLIRNMFENLVQACFQQYKTKREEVKPPSDPEMNMT  
EESFTAVMTTAAISKNKTKEYKIVGMYSBGINTQGGTTYCQTYGQTTGKMGKEGQIILVDYY  
NAQSDATMKTTQTTCYMPQGTQYQTAGKIIIEVEDWEIFRKLGLYMATTTQTGQATHSTTT  
QPQTYTTT VRKNPFRFAMGMAQALLTALMISSSSATLPVTFRCAEENNQVDKRTTRYTQP  
TGATTNMDGTAQYEATAATYIAQLNDLDLGIGQIITISITATSASIGAAGVPQAGLVTMV  
IVLSAVGLPAEDVTLLIAVDWQQDRYRTMTNTQGDAYGTGTT EKLSKKELEQMDVSSEVN  
IVNPFALSTILDNEDSDTKKSYVNGGFAVDKSDTISFTQTSQF

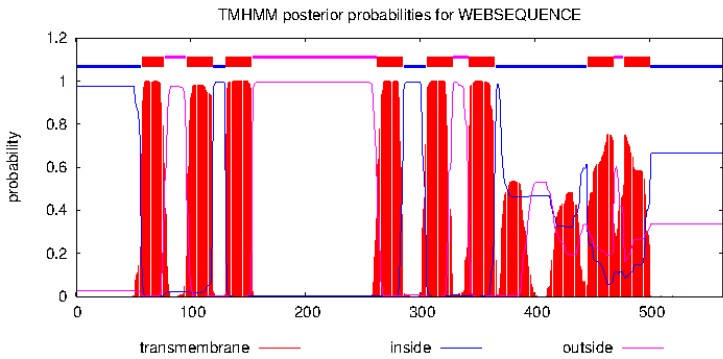


EAA4=Excitatory amino acid transporter 4= SLC1A6, [P48664](#), 564aa



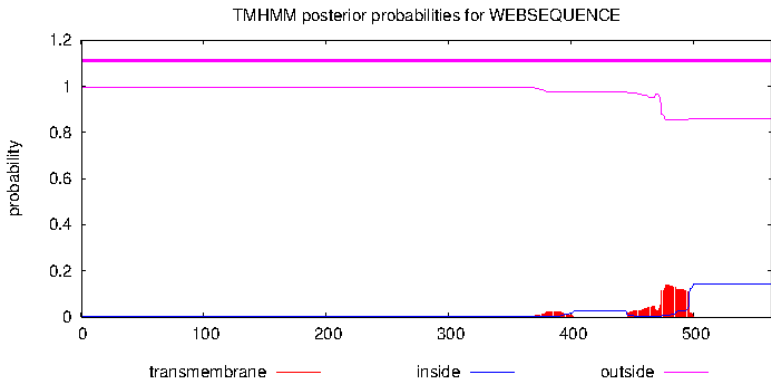
>sp|[P48664](#)|EAA4, HUMAN Excitatory amino acid transporter 4

MSSHGNSLFLRESGQRLGRVGLQRLQESLQQRALRTRLRLQTMTLEHVLRFLRRNAFIL  
LTVSAVVIGVSLAFALRPYQLTYRQIKYFSFPGELLMRMLQMLVLPPLIVSSLVTGMASLD  
NKATGRMGMRAAVYYMVTITIAVFIGILMVTIHPGKGSKEGLHREGRIETIPTADAFMD  
LIRNMFPPNLVEACFKQFKTQYSTRVVRTMTVRTENGSEPGASMPPPFVSVENGTSFLENV  
TRALGTLQEMLSFEETVPVPGSANGINALGLVVFVSAFGLVIGGMKHKGRVLRDFFDSL  
EAIMRLVGIIIIWYAPVGILFLIAGKILEMEDMAVLGGQLGMYTLTVIVGLFLHAGIVLPL  
IYFLVTHRNPFPPFIGGMLQALITAMGTSSSSATLPITFRCLEEGLGVDRRIITRFVLPVGA  
TVNMDGTALYEALAAIFIAQVNNYELNLGQITTISITATAASVGAAGIPQAGLVMTVIVL  
TSVGLPTEDITLIIAVDWFLDRLRTMTNVLGDSIGAAVIEHLSQRELELQEAELTLPSLG  
KPYKSLMAQEKGASRGRGGNESAM

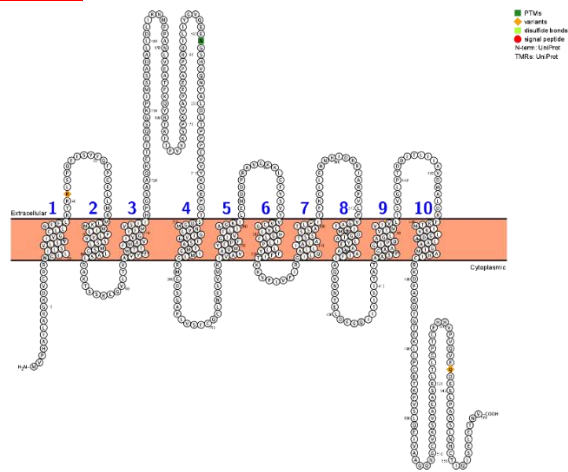


QTY variant, EAA4<sup>QTY</sup> L -> Q; I, V -> T; F -> Y (=QTY code)

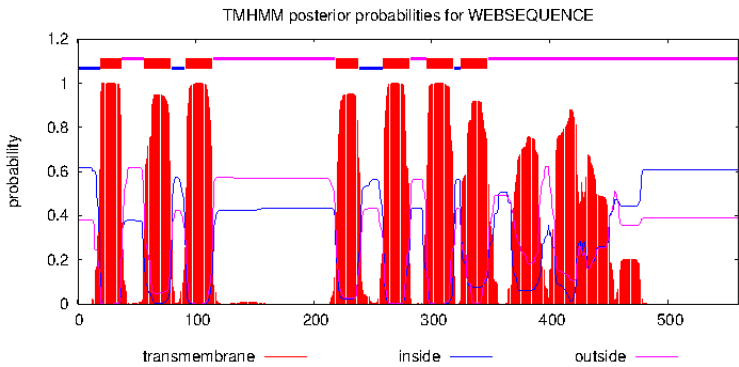
MSSHGNSLFLRESGQRLGRVGLQRLQESLQQRALRTRLRLQTMTLEHVLRFLRRNAYTQ  
QTTSATTTGTSQAYAQRPYQLTYRQIKYFSFPGELLMRMQQMOTQPQTSSQTTGMASQD  
NKATGRMGMRAAITYYMTTTTTATYTGQTMTTTHPGKGSKEGLHREGRIETIPTADAFMD  
LIRNMFPPNLVEACFKQFKTQYSTRVVRTMTVRTENGSEPGASMPPPFVSVENGTSFLENV  
TRALGTLQEMLSFEETVPVPGSANGTNAQQGQTTYSTAYGQTTGGMKHKGRVLRDYYDSQN  
EATMRQTGTTTWYAPTGTQYQTAGKILEMEDMAVLGGQLGMYTQTTTTGQYQHAGTTQPQ  
TYYQTTHRNPFPPFIGGMLQALITAMGTSSSSATLPITFRCLEEGLGVDRRTTRYTQPTGA  
TTNMDGTAQYEAQAATYIAQVNNYELNLGQITTISITATAASVGAAGIPQAGLVMTVIVL  
TSVGLPTEDITLIIAVDWYQDRQRTMTNTQGDSTGAATTEHLSQRELELQEAELTLPSLG  
KPYKSLMAQEKGASRGRGGNESAM



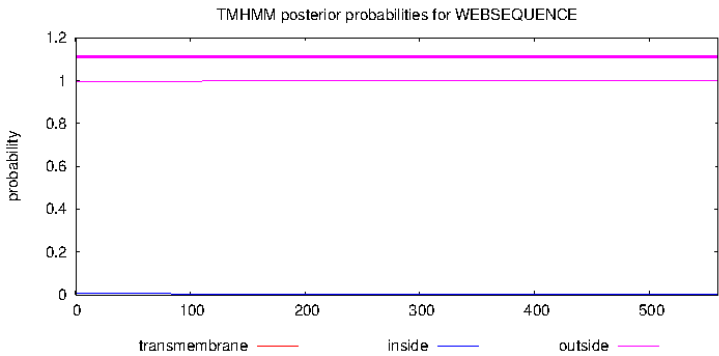
EAA5=Excitatory amino acid transporter 5= SLC1A7, [O00341](#), 560aa



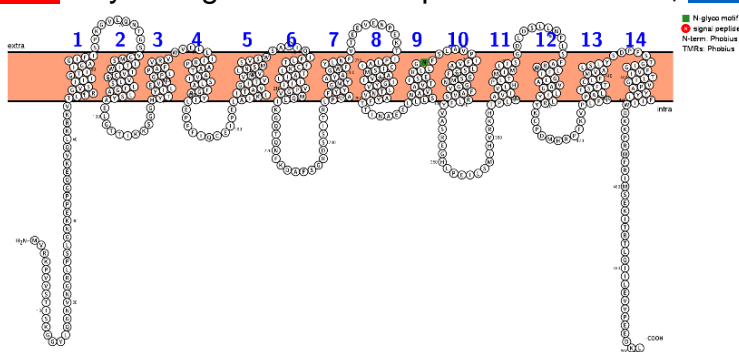
>sp|[O00341](#)|EAA5, HUMAN Excitatory amino acid transporter 5  
MVPHAILARGRDVCCRNGLLILSVLSVIVGCLLGFFLRTRRLSPQEISYFQFPGELLMRM  
LKMMILPLVVSSSLMSGSLADAKTSSRLGVLTVAAYYLWTTFMVIVGIFMVSIHHPGSAA  
QKETTEQSGKPISSADALLDLIRNMFANLVEATFKQYRTKTPVVKSPKVAPEEAPPR  
RILIYGVQEENGSHVQNFALDLTPPPEVVYKSEPGTSDGMNVLGIVFFSATMGIMLGRMG  
DSGAPLVSFQCCLNESVMKIVAVAVWYFFPGIVFLIAGKILEMDDPRAVGKKLGFYSVTV  
VCGVLVHGLFILPLLYFFITKKNPIVFIIRGILQALLIALATSSSSATLPITFKCLLENNH  
IDRRIARFVLPVGATINMDGTALYEAVAAIFIAQVNNYELDFGQIITISITATAASIGAA  
GIPQAGLVTMVIVLTSVGLPTDDITLIIAVDWALDRFRTMINVLGDALAAGIMAHICRKD  
FARDTGTEKLLPCETKPVSLQEIIVAAQQNGCVKSVAEASELTGPTCPHHVPVQVEQDEE  
LPAASLNHCTIQISELETNV



QTY variant, EAA5<sup>QTY</sup> L-> Q; I, V -> T; F -> Y (=QTY code)  
MVPHAILARGRDVCCRNGQQTQSTQSTTTGCGQGYQRTTRRLSPQEISYFQFPGELLMRM  
QKMMTQPTTSSQMSGQASQDAKTSSRLGVLTVAAYQWTTYMATTTGTMTSTTHPGSAA  
QKETTEQSGKPISSADALLDLIRNMFANLVEATFKQYRTKTPVVKSPKVAPEEAPPR  
RILIYGVQEENGSHVQNFALDLTPPPEVVYKSEPGTSDGMNTQGTTYYSATMGTMQGRMG  
DSGAPLVSFQCCLNESVMKTTATATWYYPYGTTYQTAGKTLEMDDPRAVGKKLGFYSVT  
TCGQTQHGQYTQPPQYYTTKKNPIVFIIRGTQQAQQTAAATSSSSATQPTTFKCLLENNH  
IDRRIARFVLP TGATTNMDGTAAQYEATAATYTAQVNNYELDFGQIITISITATAASTGAA  
GTPQAGQTTMTTQTSVGLPTDDITLIIAVDWALDRYRTMTNTQGDAQAAGTMAHTCRKD  
FARDTGTEKLLPCETKPVSLQEIIVAAQQNGCVKSVAEASELTGPTCPHHVPVQVEQDEE  
LPAASLNHCTIQISELETNV

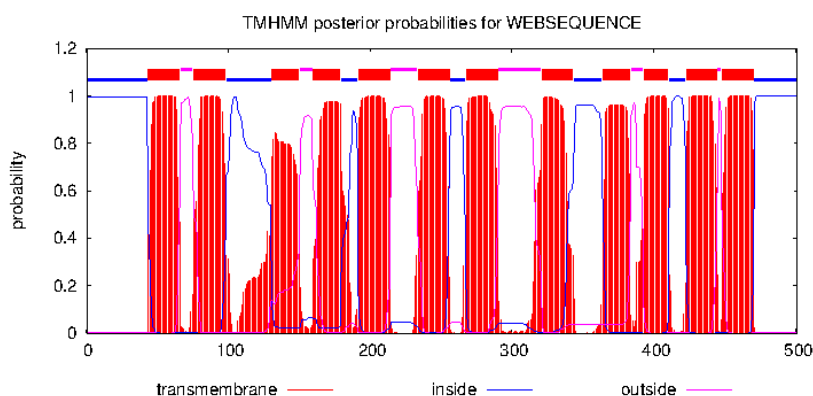


**XCT** = Cystine/glutamate transporter =SLC7A11, [Q9UPY5](#), 501aa



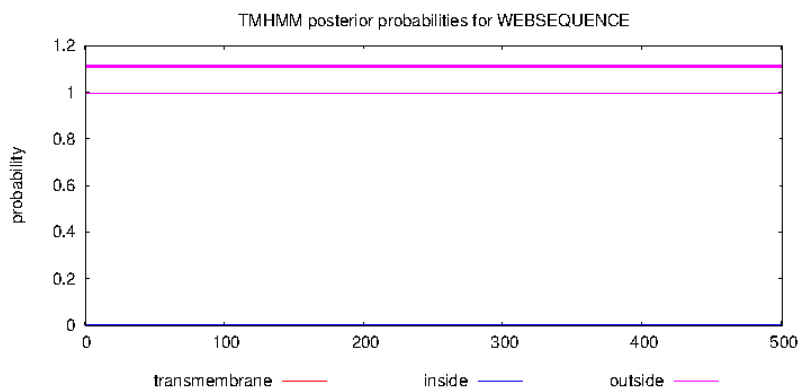
>sp|[Q9UPY5](#)|XCT, HUMAN Cystine/glutamate transporter

MVRKPVVSTISKGGYLQGNVNGRLPSLGNKEPPGQEKVQLKRKVTLRLGVSIITIGTIIGA  
 GIFISPKGVLQNTGSGVMSLTITWTCGVLSLFGALSYAELGTTIKKSGGHYTYILEVFGP  
 LPAFVRVWVELLIIRPAATAVISLAFGRYILEPFFIQCEIPELAIKLITAVGITVVMVLN  
 SMSVSWSARIQIFLTFCCKLTAILIIVPGVMQLIKGQTQNFKDAFSGRDSSITRLPLAFY  
 YGMYAYAGWFFYNFVTEEEVENPEKTIPLAICISMAIVTIGYVLTNVAYFTTINAEELLS  
 NAVAVTFSERLLGNFSLAVPIFVALSCFGSMNGGVFAVSRLEYVASREGLHPEILSMIHV  
 RKHTPLPAVIVLHPLTMIMLFSGDLDSLNLNLSFARWLFIGLAVAGLIYLRKCPDMHRP  
 FKVPLFIPALFSFTCLFMVALSLYSDPFSTGIGFVITLTGVPAYYLFIIWDKKPRWFRIM  
 SEKITRTLQIILEVVPEDKLL

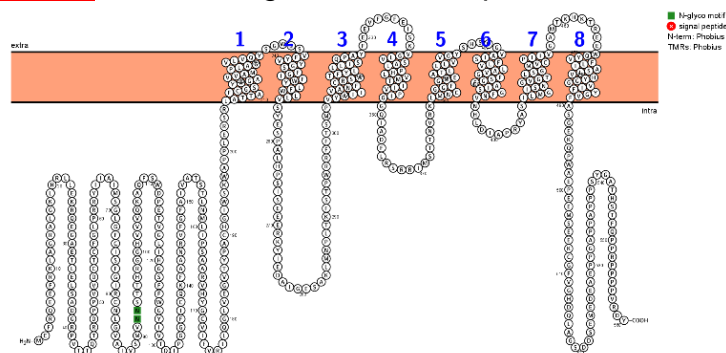


QTY variant **XCT<sup>QTY</sup>** **L-> Q; I, V -> T; F -> Y** (=QTY code)

MVRKPVVSTISKGGYLQGNVNGRLPSLGNKEPPGQEKVQLKRKVTOQRGTSTTTGTTGA  
 GTFTSPKGVLTNTGSGTMSQTWTTCGTQSQFQAQSYAELGTTIKKSGGHYTYTQETYGP  
 QPAYTRTWVELLTTRPAATATTSQAYGRYTQEPFFIQCEIPEQATKQTTATGTTTMTVQN  
 SMSTSWSARIQTYQTYCKQTATQTTTTPGTMQQTQNGQTQNFKDAFSGRDSSITRQPAFY  
 YGMYAYAGWFFYNFTTEEEVENPEKTPQATCTSMATTTTGYTQNTAYYTTINAEEQQS  
 NATAVTTSERQQGNYSQATPTYTAQSCFGSMNGGTYATSRQYYVASREGLHPEILSMIHV  
 RKHTPQPATTTQHPQTMQYSGDLDSLNLNLSYARWQFTGQATAGQTYQRYKCPDMHRP  
 FKTPOQYTPAQSYTCQYMTAQSQYSDPFSTGTGYTTTQGTGTPAYYQFTTWDKKPRWFRIM  
 SEKITRTLQIILEVVPEDKLL

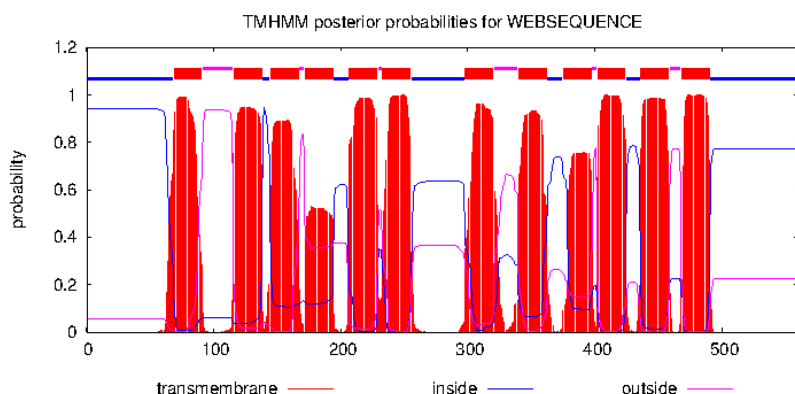


**VgluT1** = Vesicular glutamate transporter 1 = SLC17A7, [Q9P2U7](#), 560aa



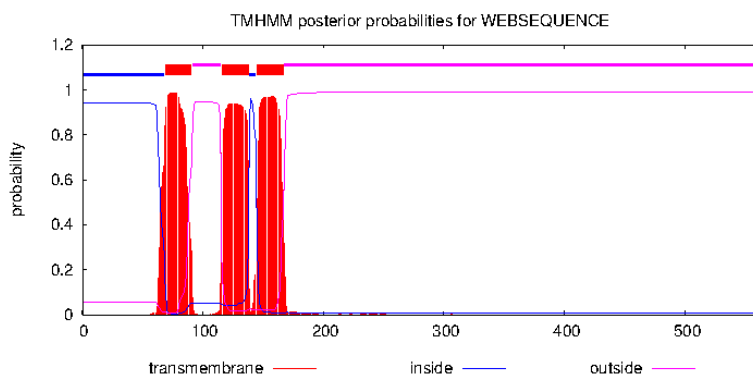
>sp|[Q9P2U7](#)| VgluT1, HUMAN Vesicular glutamate transporter 1

MEFRQEEFRKLAGRALGKLRLLLEKRQEGAETLELSADGRPVTTQTRDPPVVDCTCFGLP  
 RRYIIAIMSGLGFCISFGIRCNLGVAIVSMVNNSTTHRGHVVVQKAQFSWDPETVGLIH  
 GSFFWGYIVTQIPGGFICQKFAANRVFGFAIVATSTLNMLIPSAARVHYGCVIFVRILQG  
 LVEGVTPACHGIWSKWAPPLERSR**LATTAFCGSYAGAVVAMPLAGVLVQYSGWSSVFYV**  
**YGSFGIFWYLFWLLV**SYESPALHPSISEEERKYIEDAIGESAKLMNPLTKFSTPWRRFFT  
 SMP**VYAIIVANFCRSWTFYLLLSQPAYFEEVFGFEISKVGLVSALPHLVMTIIVPIGGQ**  
 IADFLRSRRIMSTTNVRK**LMNCGGFGMEATLLL**VVGYSHSGK**VAISFLVLAVGFSGFAIS**  
**GFNV**NHLDIAPRYAS**ILMGISNGVGTLSGMVCP****IIVGAMTKHKTREEWQYVFLIASLVHY**  
**GGVIFYGVF**ASGEKQPWAEPEEMSEEKCGFVGHDQLAGSDDSEMEDEAEPPGAPPAPPPS  
 YGATHSTFQPPRPPPPVRDY

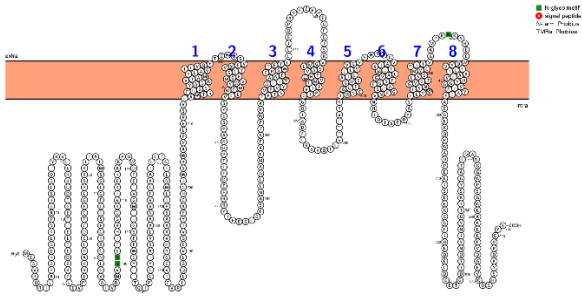


QTY variant VgluT1<sup>QTY</sup> **L**-> **Q**; **I, V** -> **T**; **F** -> **Y** (=QTY code)

MEFRQEEFRKLAGRALGKLRLLLEKRQEGAETLELSADGRPVTTQTRDPPVVDCTCFGLP  
 RRYIIAIMSGLGFCISFGIRCNLGVAIVSMVNNSTTHRGHVVVQKAQFSWDPETVGLIH  
 GSFFWGYIVTQIPGGFICQKFAANRVFGFAIVATSTLNMLIPSAARVHYGCVIFVRILQG  
 LVEGVTPACHGIWSKWAPPLERSR**QATTAYCGSYAGATTAMPQAGTQTQYSGWSS****TYYT**  
**YGSYGTYYWYQFWQQT**SYESPALHPSISEEERKYIEDAIGESAKLMNPLTKFSTPWRRFFT  
 SMP**TYATTTANYCRSWTYYYQQTSQPAYFEEVFGFEISK****TGQTSAPHQTMTTTTPTGGQ**  
 IADFLRSRRIMSTTNVRK**QMNCGGYGMEATQQQTTGYSHSGKTATSFQTQATGYSGYATS**  
**GYNT**NHLDIAPRYAS**TQMGTSNGTGTQSGMTCPTTT****GAMTKHKTREEWQYTYQTASQTHY**  
**GGTTYYGTY**ASGEKQPWAEPEEMSEEKCGFVGHDQLAGSDDSEMEDEAEPPGAPPAPPPS  
 YGATHSTFQPPRPPPPVRDY

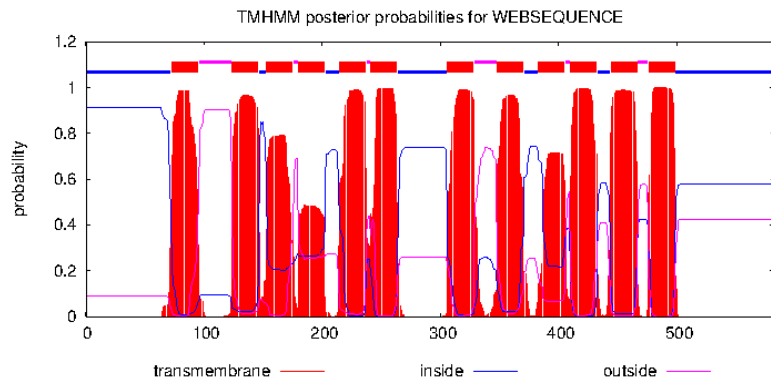


**VgluT2**= Vesicular glutamate transporter 2= SLC17A6, [Q9P2U8](#), 582aa



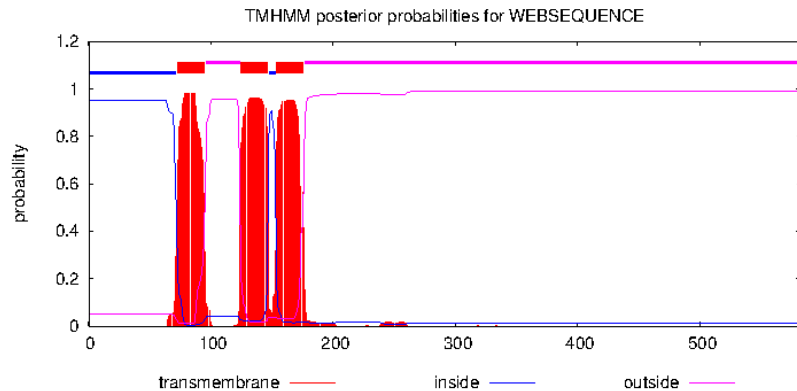
>sp|[Q9P2U8](#)| VgluT2, HUMAN Vesicular glutamate transporter 2

MESVKQRILAPGKEGLKNFAGKSLGQIYRVLEKKQDTGETIELTEDGKPLEVPERKAPLC  
DCTCFGLPRRYIIAIMSGLGFCISFGIRCNLGVAIVDMVNNSTIHRGGKVIKEKAKFNWD  
PETVGMINGSFYWGYYITQIPGGYIASRLAANRVFGAAILLTSTLNMLIPSAARVHYGCV  
IFVRILQGLVEGVYTPACHGIWSKWAPPLERSRLATTSFCGSYAGAVIAMPLAGILVQYT  
GWSSVFYVYGSFGMVWYMFLLVSYESPAKHPTITDEERRYIEESIGESANLLGAMEKFK  
TPWRKFFTSMPVYAIIVANFCRSWTFYLLISQPAYFEEVFGFEISKVGMLSAVPHLVMT  
IIIVPIGGQIADFLRSKQILSTTTVRKIMNCGGFGMEATLLLTVGYSHTRGV AISFLVLAV  
GFSGFAISGFNVNHLDIAPRYASILMGISNGVGTLSGMVCP IIVGAMTKNKSREEWQYVF  
LIAALVHYGGVIFYAIFASGEKQPWADPEETSEEKCGFIHEDELDEETGDDITQNYINYGT  
TKSYGATTQANGGWPSGWEEKKEEFVQGEVQDSSHYSYKDRVDYS



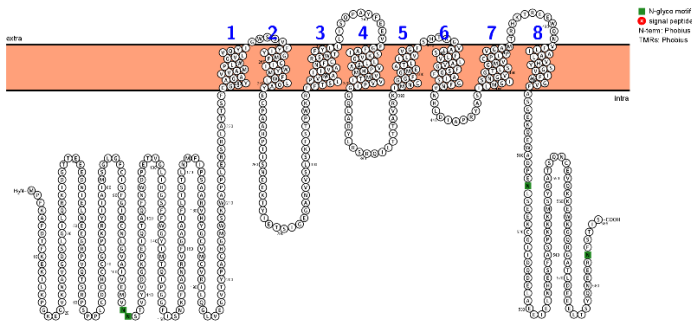
QTY variant VgluT2<sup>QTY</sup> **L**-> **Q**; **I, V** -> **T**; **F** -> **Y** (=QTY code)

MESVKQRILAPGKEGLKNFAGKSLGQIYRVLEKKQDTGETIELTEDGKPLEVPERKAPLC  
DCTCFGLPRRYIIAIMSGLGFCISFGIRCNLGVAIVDMVNNSTIHRGGKVIKEKAKFNWD  
PETVGMINGSFYWGYYITQIPGGYIASRLAANRVFGAAILLTSTLNMLIPSAARVHYGCV  
IFVRILQGLVEGVYTPACHGIWSKWAPPLERSRQATTSYCGSYAGATTAMPQAGTQTQYT  
GWSSYYTYTGSYGMTWYMYWQQTSYESPAKHPTITDEERRYIEESIGESANLLGAMEKFK  
TPWRKYYTSMPTYATTTANYCRSWTYQQLISQPAYFEEVFGFEISKTMQSATPHQTMT  
TTTPTGGQIADFLRSKQILSTTTVRKTMNCGGYGMEATQQQTGYSHTRGTATSYQTQAT  
GYSGYATSGYNTNHLDIAPRYASTQMGTSNGTGTQSGMTCPTTTGAMTKNKSREEWQYTY  
QTAAQTHYGGTTYATYASGEKQPWADPEETSEEKCGFIHEDELDEETGDDITQNYINYGT  
TKSYGATTQANGGWPSGWEEKKEEFVQGEVQDSSHYSYKDRVDYS



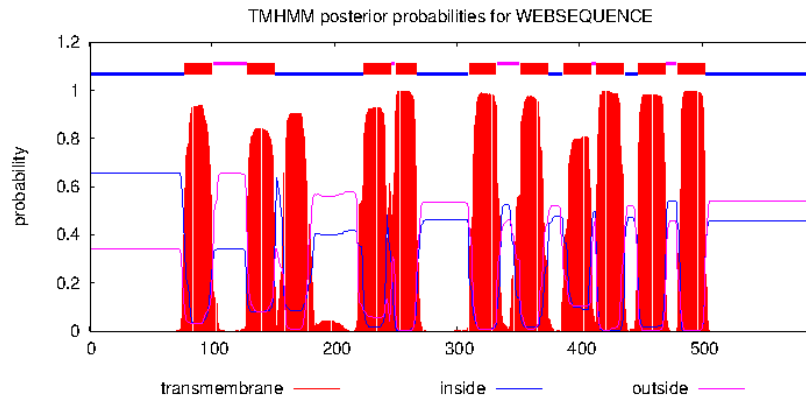


**VGLuT3**= Vesicular glutamate transporter 3= SLC17A8, [Q8NDX2](#), 589aa



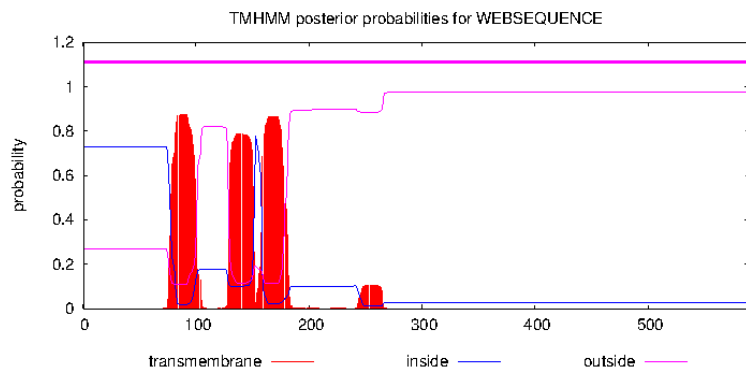
>sp|[Q8NDX2](#)| VGLuT3, HUMAN Vesicular glutamate transporter 3

MPFKAFDTFKEKILKPGKEGVKNAVGD~~SL~~GILQ~~RK~~IDGTTEEEDNIELNEEGRPVQTSRP  
SPPLCDCHCCGLPKRYIIAIMSGLGFCISFGIRCNLGVAIVEMVNNSTVYVDGKPEIQTA  
QFNWDPETVGLIHGSFFWGYIMTQIPGGFISNKFAANRVFGAAIFLTSTLNMFI~~PSAARV~~  
HYGCVMCVRILQGLVEGVTPACHGMWSKWAPPLERSRLATTSF~~CGSYAGAVVAMPLAGV~~  
~~LVQYI~~~~GWSSV~~FYIYGMFGIIWYMF~~WLLQAY~~EC~~PA~~AHPTISNEEKTYIETSI~~GEGANVVSL~~  
SKFSTPWKR~~FF~~TS~~LP~~VYAIIVANFCRSWTFY~~LL~~LISQPAYFEEV~~FG~~FAISKVGLLSAVPH  
M~~VM~~TIVVPIGGQLADYLR~~S~~RQILTTTAVRKIMNCGGFGMEAT~~LLL~~VVGF~~SHTKG~~V~~AI~~SFL  
VLAVGFSGFAISGFNVNHLDIAPRYASILMGISNGVGTLSGMVCPLIVGAMTRHK~~TREEW~~  
~~QNVFLIAALVHYS~~GVIFYGV~~F~~ASGEKQEWADPENLSEEKCGIIDQELAE~~E~~IELNHESFA  
SPKKKMSYGATSQNCEVQKKEWKQ~~RG~~ATLDEEELTSYQNEERNFSTIS

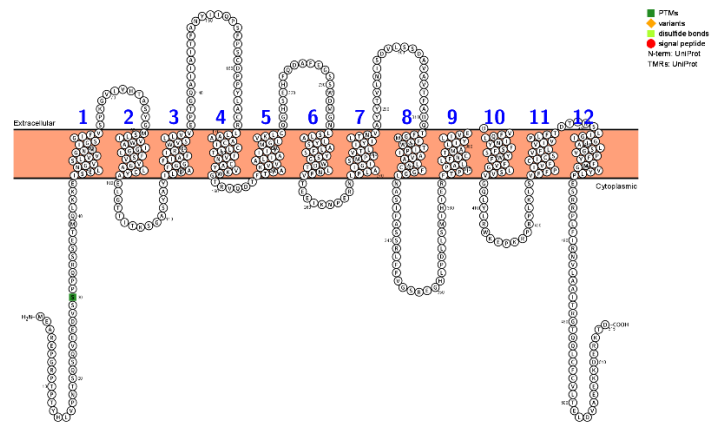


QTY variant VgluT3<sup>QTY</sup> **L**-> **Q**; **I, V** -> **T**; **F** -> **Y** (=QTY code)

MPFKAFDTFKEKILKPGKEGVKNAVGD~~SL~~GILQ~~RK~~IDGTTEEEDNIELNEEGRPVQTSRP  
SPPLCDCHCCGLPKRYIIAIMSGLGFCISFGIRCNLGVAIVEMVNNSTVYVDGKPEIQTA  
QFNWDPETVGLIHGSFFWGYIMTQIPGGFISNKFAANRVFGAAIFLTSTLNMFI~~PSAARV~~  
HYGCVMCVRILQGLVEGVTPACHGMWSKWAPPLERSRLATTSF~~CGSYAGATTAMPQAGT~~  
~~QTQYT~~~~GWSSV~~YYTYGMYGTTWYMYWQQAYEC~~PA~~AHPTISNEEKTYIETSI~~GEGANVVSL~~  
SKFSTPWKRYYTSQPTYATTTANYCRSWTFYQQLISQPAYFEEV~~YGY~~ATSKTGQQSATPH  
MTMT~~TTTT~~PTGGQLADYLR~~S~~RQILTTTAVRK~~TM~~NCGGYGMEAT~~QQQT~~TGY~~SHTKG~~TATSYQ  
TQATGYSYGATSGYNTNHLDIAPRYASTQMGTSNGTGTQSGMTC~~POTT~~GAMTRHK~~TREEW~~  
~~QNTYQTAAQT~~HS~~GT~~TYYGTYASGEKQEWADPENLSEEKCGIIDQELAE~~E~~IELNHESFA  
SPKKKMSYGATSQNCEVQKKEWKQ~~RG~~ATLDEEELTSYQNEERNFSTIS

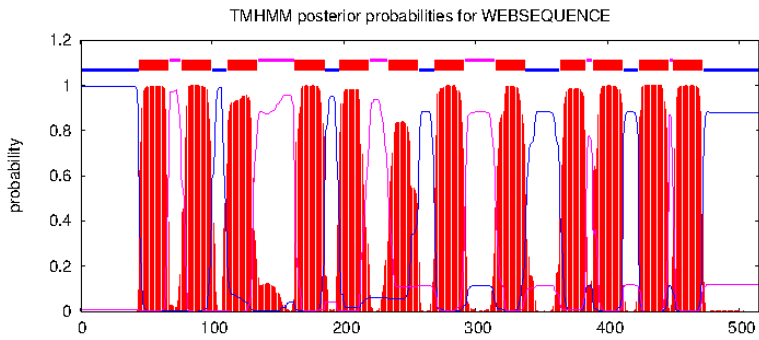


**YLAT2**=Y+L amino acid transporter 2= SLC7A6, [Q92536](#), 515aa



>sp|[Q92536](#)|YLAT2, HUMAN Y+L amino acid transporter 2

MEAREPGRPTPTYHLVPNTSQSQVEEDVSSPPQRSSETMQLKKEISLLNGVSLVVGNMIG  
SGIFVSPKGVLVHTASYGMSLIVWAIGGLFSVVGALCYAELGTTITKSGASYAYILEAFG  
GFIAFIRLWVSLLVVEPTGQAIITAITFANYIIQPSFPSCDPPYLACRLIAAACICLLTFV  
NCAYVKWGITRVQDTITYAKVVALIATIVMGLVKLCQGHSEHFQDAFEGSSWDMGNLSIAL  
YSALFSYSGWDTLNFVTEEIKNPERNLPLAIGISMPIVTLIYILTNAVYYTVLNIISDVLS  
SDAVAVTFADQTFGMFSWTIPIAVALSCFGLNASIFASSRLFFVGSREGHLPDLLSMIH  
IERFTPIPALLFNCTMALIYLIVEDVFQLINYSFSYWFFVGLSVVQQLYLRWKEPKRPR  
PLKLSVFFPIVFCICSVFLVIVPLFTDTINSLIGIGIALSGVPFYFMGVYLPESRRPLFI  
RNVLAAITRGTTQQLCFVLTELDVAEEKKDERKTD



QTY variant, YLAT2<sup>QTY</sup> L-> Q; I, V -> T; F -> Y (=QTY code)

MEAREPGRPTPTYHLVPNTSQSQVEEDVSSPPQRSSETMQLKKEISQONGTSQTTGNMTG  
SGTYTSPKGVLVHTASYGMSQTTWATGGQYSTTGAQCYAELGTTITKSGASYAYTQEAYG  
GYTAYTRQWTSQQTTEPTGQAIITAITFANYIIQPSFPSCDPPYLACRQQAAACTCQQTYT  
NCAYTKWGITRVQDTITYAKTTAQTATTTMGQTKQCQGHSEHFQDAFEGSSWDMGNQSQAQ  
YSAQYSYSGWDTQNYTTEEIKNPERNQPATGTSMPPTTTQTYTQTNTAYYTVLNIISDVLS  
SDAVAVTFADQTYGMYSWTTPATAQSCYGGQNASIFASSRLFFVGSREGHLPDLLSMIH  
IERYTPTPAQQYNCTMAQTYQTTEDEVYQQTNYYSYSYWYYTGQSTTGQLYLRWKEPKRPR  
PLKLSYYPTTYCTCSTYQTTTPQYTDTINSLQGTGTGAQSGTPYYMGTYQPESSRRPLFI  
RNVLAAITRGTTQQLCFVLTELDVAEEKKDERKTD

