

Figure S2 Specificity determining positions (SDPs) analysis of *E.salsugineum* AQPs from alignments with putative amino acid sequences of AQPs transporting non-aqua substrates. Multiple alignments were performed using ClustalX. The SDPs are highlighted in yellow, mismatch site highlighted in red and the representative sequences are marked in blue. The Genbank accession numbers: AtPIP1;2 (Q06611), AtPIP2;1 (P43286), AtPIP2;4 (Q9FF53), AtTIP1;1 (P25818), AtTIP1;2 (Q41963), AtTIP1;3 (NP_192056), AtTIP2;1 (Q41951), AtTIP2;3 (Q9FGL2), AtTIP4;1 (O82316), AtTIP5;1 (NP_190328), AtNIP1;2 (Q8LFP7), AtNIP5;1 (NP_192776), AtNIP6;1 (NP_178191), CpNIP1 (CAD67694), GmNOD26 (P08995), HvPIP1;3 (BAA23745), HvPIP1;4 (BAF33068), HvPIP2;1 (BAA23744), NtAQP1 (O24662), NtTIPa (Q9XG70), OsNIP2;1 (Q6Z2T3), TaTIP2;1 (AAS19468), TaTIP2;2 (AAS19469), ZmPIP1;1 (Q41870), ZmPIP1;5 (Q9AR14).

Ammonia Transporters

TaTIP2;1	GHVNPAVTFGLALGGQITILTGIFYWVAQLLGAIVGAFLVQFCT-----GVATPTHG
TaTIP2;2	GHVNPAVTFGLALGGQITILTGIFYWVAQLLGAIVGAFLVQFCT-----GVATPTHG
AtTIP2;1	GHVNPAVTFGLAVGGQITVITGVFYWIAQLLGSTAACFLKQVVTG-----GLAVPTHS
AtTIP2;3	GHLNPAVTLGLAIGGNITLITGFFYWIAQCLGSIVACLLLVFVTN-----GKSVPTHG
EsTIP2;1	GHVNPAVTFGLALGGQITLITGVFYWIAQLLGSTAACFLKQVVTG-----GLAVPTHS
EsTIP3;1	GHVNPAVTFGALIGGRLSAIRAIYYWIAQLLGAILACLRLRLSTN-----GLRPVCFR
GmNOD26	GHFNPAVTIAFASTRRFPLIQVPAYVVAQLLGSILASGTLRLLF-----MGNHDQFSG
EsNIP1;2	AHFNPAVTIAFASCRRFPLKQVPAYVISQLIGSTLAAATLRLLEGLDNDVCSGKHDVFVG
EsNIP4;1	AHFNPAVTITFAIFRRFPWYQVPLYIGAQLTGSLLASLTLRLMF-----KVTPEAFFG
EsNIP4;3	AHFNPAVTITFAIFRRFPWYQVPSYIGAQLAGSLLASLTLRLMF-----KVTPEAFFG
TaTIP2;1	LS-GVGAFEGVVMEEIIVTFGLVYTVYATAADPKKGSGLGTIAPIAIGFIVGANILVAGPFS
TaTIP2;2	LS-GVGAFEGVVMEEIIVTFGLVYTVYATAADPKKGSGLGTIAPIAIGFIVGANILVAGPFS
AtTIP2;1	VAAGLGSIEGVVMEIIITFALVYTVYATAADPKKGSGLGTIAPLAIGLIVGANILAAGPFS
AtTIP2;3	VSAGLGAVEGVVMEIIVTFALVYTVYATAADPKKGSGLGTIAPIAIGFIVGANILAAGPFS
EsTIP2;1	VAAGVGAIEGVVMEIIITFALVYTVYATAADPKNGSLGTIAPLAIGLIVGANILAAGPFS
EsTIP3;1	LASGVGAVNGLVLEIILTFGLVYVVYSTLIDPKRGSGLGIAPLAIGLIVGANTLVGGPFS
GmNOD26	TVPNGTNLQAFVFEFIMTFLLMFVICGVATDNR--AVGEFAGIAIGSTLLLNVIIIGPVT
EsNIP1;2	TLPSGSDLQSFVIEFIIITFYLMFIIISGVATDNR--AIGELAGIAVGSTVLLNVIIAGPVS
EsNIP4;1	TTPADSSARALVAEIIISFLLMFVISGVATDNR--AVGELAGIAVGMTIMLNVFVAGPIS
EsNIP4;3	TTPADSSARALVAEIIISFLLMFVISGVATDSR--AIGELAGIAVGMTIMLNVFVAGPIS
TaTIP2;1	GGSMNPARSFGPAVASGDFTNIWVYWAGPLIGGGLAGVVYRYLYMCD-----DHSSVAG
TaTIP2;2	GGSMNPARSFGPAVASGDFTNIWIYWAGPLIGGGLAGVVYRYVYMCD-----DHSSVAG
AtTIP2;1	GGSMNPARSFGPAVAAGDFSGHWVYWGPLIGGGLAGLIYGNVFMGSS-----EHVPLAS
AtTIP2;3	GGSMNPARSFGPAVVSGLDSQIWIYWGPLVGGALAGLIYGDVFIGSY-----EAVETRE
EsTIP2;1	GGSMNPARSFGPAVAAGDFSGHWVYWGPLIGGGLAGLIYGNVFMSTSS-----EHQPLAS
EsTIP3;1	GASMNPARAFGPALVGRWRHDHWIYWGPFIGGALAALIYEYMVIPSEPPHTHTHQPLAP
GmNOD26	GASMNPARSLGPAFVHGEYEGIWIYLLAPVVGAIAGAWVYINIVRYTDKPLSETTKSASFLL
EsNIP1;2	GASMNPARSLGPAMVYNCYKGIWIYIVSPILGAIAGAWVYNTVRYTDKPLREITKSGSFL

EsNIP4;1 GASMNPARSLGPAIVMGVYKGIWIYIVGPLVGMAGGFVYNLIRFTDKPLRELTRSGSFL
 EsNIP4;3 GASMNPARSLGPAIVMGKYKGIWVYIIGPVIIGMAGGFVYNFIRFTDKPLRELTKSASFL

Boric Acid Transporters

HvPIP1;3 PSGSK----CGTVGIQGIAWSFGGMIFVLVYCTAGISGGHINPAVTFGLFLARKLSLTRA
 HvPIP1;4 PSGSK----CGTVGIQGIAWSFGGMIFVLVYCTAGISGGHINPAVTFGLFLARKLSLTRA
 ZmPIP1;1 KSTSK----CATVGIQGIAWSFGGMILALVYCTAGISG-HINPAVTFGLFLARKLSLTRA
 AtNIP5;1 -----YDGAETLIGNAACAGLAVMIIILSTGHISGAHLNPSLTIAFAALRHFPWAHV
 AtNIP6;1 -----TDGAETLIGCAASAGLAVMIVILSTGHISGAHLNPAVTIAFAALKHFPWKHV
 OsNIP2;1 -----DLSRISQLGQSIAGGLIVTVMYAVGHISGAHMNPAVTLFAVFRHFPWVIQV
 EsPIP1;1 RSPNM----CSSVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSFTRA
 EsPIP1;2 RSPNM----CASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRA
 EsPIP1;3 RAPNM----CASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLLLARKLSLSRA
 EsPIP1;4 RAPNM----CASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRA
 EsPIP1;5 RAPNM----CASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRA
 EsPIP2;5 TDPTLNPQCAGVGILGIAWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVTLVRA
 EsNIP5;1 -----YDGAETLIGNAACAGLAVMIIILSTGHISGAHLNPSLTIAFAALRHFPWSHV
 EsNIP6;1 -----TGGAVTLIGCAASAGLAVMIVILSTGHISGAHLNPAVTIAFAALKHFPWKHV
 EsNIP7;1 -----SGGHVGLLEYAATAGLSVVVVVYSVGHISGAHLNPSITIAFAVFGGFPWSQV

HvPIP1;3 VFYIVMQCLGAICGAGVVKGFQTTLYQ-----GNGGANSVAAGYTKGDGLGAEIVGTFV
 HvPIP1;4 VFYIVMQCLGAICGAGVVKGFQTTLYQ-----GNGGANSVAAGYTKGDGLGAEIVGTFV
 ZmPIP1;1 VFYIIMQCLGAICGRGVVKGFQQLYM-----GNGGRRNVVAPGYTKGDGLGAEIVGTFI
 AtNIP5;1 PAYIAAQVSASICASFALKGVFHPF-----MSGGVTIPSVSLGQAFALFEFIITFI
 AtNIP6;1 PVYIGAQMVASVSAFALKAVFEPT-----MSGGVTVPVGLSQAFALEFIISFN
 OsNIP2;1 PFYWAAQFTGAICASFVLKAVIHPVD-----VIGTTTPVGPWHWSLVVEVIVTFN
 EsPIP1;1 LYYIVMQCLGAICGAGVVKGFQPKQYQ-----SLGGGANTVAHGTYKGSGLGAEIIGTFV
 EsPIP1;2 VYYIVMQCLGAICGAGVVKGFQPKQYQ-----ALGGGANTIAHGTYKGSGLGAEIIGTFV
 EsPIP1;3 VFYMVMQCLGAICGAGVVKGFQPNPYQ-----TLGGGANTVAHGTYKGSGLGAEIIGTFV
 EsPIP1;4 VFYMIMQCLGAICGAGVVKGFQPTPYQ-----TLGGGANTVAPGYTKGSGLGAEIIGTFV
 EsPIP1;5 VFYIVMQCLGAICGAGVVKGFQSGPYQ-----ANGGGANVVAHGTYKGSGLGAEIVGTFV
 EsPIP2;5 VMYMVAQCLGAICGVALVKSFSQAYYT-----RYGGGANGLADGYSVGTGVAAEIVGTFV
 EsNIP5;1 PAYIAAQVSASICASFALKAVFHPF-----MSGGVTVPSSSIGQAFALFEFIISFI
 EsNIP6;1 PVYIGAQIMASVCAAFALKAVFEPT-----MSGGVTVPVVALSQAFALEFIITFN
 EsNIP7;1 PLYITAQTLGATAATLVGVSVYGVN-----ADLMATKPTLSCVSAFCVELVATGI

HvPIP1;3 LVYTVFSATDAKRSARDSHVPILAPLPIGFAVFLVHLATITBITGTGINPARSLGAIIYN
 HvPIP1;4 LVYTVFSATDAKRSARDSHVPILAPLPIGFAVFLVHLATITBITGTGINPARSLGAIIYN
 ZmPIP1;1 LVYTVFSATDAKRRARDSHVPILAPLPIGFAVFLVHLATITMGITGTGINPARSLGAAVIYN
 AtNIP5;1 LLFVVTAVAT-----DTRAVGELAGIavgatvmlnllvagspSTGGSMPVRTLGPVAVSG
 AtNIP6;1 LMFVVTAVAT-----DTRAVGELAGIavgatvmlnlllIAGEATSASMPVRTLGPAAIAN
 OsNIP2;1 MMFVTLAVAT-----DTRAVGELAGLAVGSAVCITSIFAGATSSGSMNPARTLGPALASN
 EsPIP1;1 LVYTVFSATDAKRNARDSHVPILAPLPIGFAVFLVHLATITBITGTGINPARSLGAIIYN

EsPIP1;2 LVYTVFSATDAKRNARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIIFN
 EsPIP1;3 LVYTVFSATDAKRSARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIYIN
 EsPIP1;4 LVYTVFSATDAKRSARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIYIN
 EsPIP1;5 LVYTVFSATDAKRSARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIYIN
 EsPIP2;5 LVYTVFSATDPKRSARDSHVPVLAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIYIN
 EsNIP5;1 LLFVVTAVAT-----DTRAVGELAGIavgatvmlnllvagefssggsmnpvrtlGPAVASG
 EsNIP6;1 LMFVVTAVAT-----DTRAVGELAGIavgatvmlnllIAGEFATSASMNpvrtlGPAIAAN
 EsNIP7;1 VVFLASALHCG----PHQNSGNLTGLVIGTVISLGVLIITGPISSGGSMNPARSLGPAVVAW

CO₂ Transporters

AtPIP1;2 GHINPAVTFGLFLARKLSLTRA^VY^IVM^QCLG^AICGAGVVKGFQPKQYQALGGGANTIAH
 NtAQP1 GHINPAVTFGLFLARKLSLTRA^IF^YI^VM^QCLG^AICGAGVVKGF^FMPYQRLGGGANV^VNH
 HvPIP2;1 GHINPAVTFGLFLARKVSLIRAL^LY^IIAQ^QCLG^AICGVLVKGFQSSYYVRYGGGANELSA
 EsPIP1;1 GHINPAVTFGLFLARKLSFTRAL^LY^IVM^QCLG^AICGAGVVKGFQPKQYQSLGGGANTVAH
 EsPIP1;2 GHINPAVTFGLFLARKLSLTRA^VY^IVM^QCLG^AICGAGVVKGFQPKQYQALGGGANTIAH
 EsPIP1;3 GHINPAVTFGLLLARKLSLSRAV^FY^IVM^QCLG^AICGAGVVKGFQPNPYQTLGGGANTVAH
 EsPIP1;4 GHINPAVTFGLFLARKLSLTRA^VF^YI^VM^QCLG^AICGAGVVKGFQPTPYQTLGGGANTVAP
 EsPIP1;5 GHINPAVTFGLFLARKLSLTRA^VF^YI^VM^QCLG^AICGAGVVKGFQSGPYQANGGGANVVAH
 EsPIP2;4 GHINPAVTFGLFLARKVSLVRT^VLY^IVAQ^QCLG^AICGCGFVKAFQSSYYTRYGGGANELAD

AtPIP1;2 GYTKGSGLGAEIIGTFVLVYTVFSATDAKRNARDSHVP^ILAPLPIGFAVFLVHLATIPIT
 NtAQP1 GYTKGDGLGAEIIGTFVLVYTVFSATDAKRNARDSYV^PLAPLPIGFAVFLVHLATIPIT
 HvPIP2;1 GYSKGTGLAAEIIIGTFVLVYTVFSATDPKRNARDSHIP^VLAPLPIGFAVFMVHLATIPIT
 EsPIP1;1 GYTKGSGLGAEIIGTFVLVYTVFSATDAKRNARDSHVP^ILAPLPIGFAVFLVHLATIPIT
 EsPIP1;2 GYTKGSGLGAEIIGTFVLVYTVFSATDAKRNARDSHVP^ILAPLPIGFAVFLVHLATIPIT
 EsPIP1;3 GYTKGSGLGAEIIGTFVLVYTVFSATDAKRSARDSHVP^ILAPLPIGFAVFLVHLATIPIT
 EsPIP1;4 GYTKGSGLGAEIIGTFVLVYTVFSATDAKRSARDSHVP^ILAPLPIGFAVFLVHLATIPIT
 EsPIP1;5 GYTKGSGLGAEIVGTFVLVYTVFSATDAKRSARDSHVP^ILAPLPIGFAVFLVHLATIPIT
 EsPIP2;4 GYNKGTGLGAEIIGTFVLVYTVFSATDPKRSARDSHIP^VLAPLPIGFAVFMVHLATIPIT

AtPIP1;2 GTGINPARSLGAAIIFNK^DNAW^DDDH^WIFWVGPFIGAALAALYHVIVIRAI^PFK----SRS
 NtAQP1 GTGINPARSLGAAI^IYNT^DQAW^DDDH^WIFWVGPFIGAALAAYHQI^IIRAI^PPFH----KSS
 HvPIP2;1 GTGINPARSLGAAVIYNT^DKAW^DDDQ^WIFWVGPLIGAAIAAAYHQYVLRASAAK-LGSYRS
 EsPIP1;1 GTGINPARSLGAAI^IYNK^DHSW^DDDH^WIFWVGPFIGAALAALYHVIVIRAI^PFK----SRS
 EsPIP1;2 GTGINPARSLGAAI^IFNK^DNAW^DDDH^WIFWVGPFIGAALAALYHVIVIRAI^PFK----SRS
 EsPIP1;3 GTGINPARSLGAAI^IYNK^DHAW^DDDH^WIFWVGPFIGAALAALYHQLVIRAI^PFK----TRS
 EsPIP1;4 GTGINPARSLGAAI^IYNK^DHSW^DDDH^WIFWVGPFIGAALAALYHQIVIRAI^PFK----SKS
 EsPIP1;5 GTGINPARSLGAAI^IYNK^DHAW^DDDH^WIFWVGPFIGAALAALYHQIVIRAI^PFK----SKR
 EsPIP2;4 GTGINPARSFGAAVIYN^DQ^KAW^DDDQ^WIFWVGPMIGAAAAALYHQFVLRAAA^IKALGSFRS

H₂O₂ Transporters

AtTIP1;1 AVAHAFGLFVAVSVGANISGGHVNPVTFGAFIGGNITLLRGILYWIAQLLGS^VVVACLIL

AtTIP1;2 ALAHAFGLFVAVSVGANISGGHVNPAVTFGVLLGGNITLLRGILYWIAQLLGSVAACFLLL
AtTIP2;3 AIAHAFALFVGVSI AANISGGHLNPAVTLGLAIGGNITLITGFFYWIAQCLGSIVACLILL
AtPIP2;1 AWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVSLPRALLYIIAQCLGAICGVGVV
AtPIP2;4 AWAFGGMIFVLVYCTAGISGGHINPAVTVGLFLARKVSLVRTVLYIVAQCLGAICCGGVV
AtNIP1;2 AIVWGLTVMVLVYSLGHISGAHFNPAVTIAFASCGRFPLKQVPAYVISQVIGSTLAAATL
EsPIP1;1 AWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSFTRALYYIVMQCLGAICGAGVV
EsPIP1;2 AWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRAVYYIVMQCLGAICGAGVV
EsPIP1;3 AWAFGGMIFALVYCTAGISGGHINPAVTFGLLLARKLSLSRAVFYVMVMQCLGAICGAGVV
EsPIP1;4 AWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRAVFYMIMQCLGAICGAGVV
EsPIP1;5 AWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRAVFYIVMQCLGAICGAGVV
EsPIP2;1 AWAFGGMIFILVYCTAGISGGHINPAVTFGLLLARKVSLVRAILYMVAQCLGAICGVGVV
EsPIP2;2 AWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVSLIRAVLYMVAQCLGAICGVGVV
EsPIP2;3 AWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVSLIRAVLYMVAQCLGAICGVGVV
EsPIP2;4 AWAFGGMIFVLVYCTAGVSGGHINPAVTFGLFLARKVSLVRTVLYIVAQCLGAICCGGVV
EsPIP2;5 AWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVTLVRAVYMYMVAQCLGAICGVALV
EsPIP2;6 SWAFGGMIFILVYCTAGISGGHINPAVTFGLFLASKVSLVRAISYMVAQCLGATCGVGLV
EsPIP2;7 AWAFGGMIFVLVYCTAGISGGHINPAVTFGLFLARKVSLVRAVGYMIAQCLGAICGVGVV
EsTIP1;1 ALAHAFGLFVAVSVGANISGGHVNPAVTFGAFVGGNITLLRGILYWIAQLAGSVVACLILL
EsTIP1;2 ALAHAFGLFVAVSVGANISGGHVNPAVTFGAFVGGNITLLRGILYWIAQLLGSVVACFLLL
EsTIP1;3 SLSHAFALFVAVSVGANVSGGHVNPAVTFGAFVGGNITLMRAILYWIAQLLGAVVACLILL
EsTIP2;1 AVCHGFALFVAVAIGANISGGHVNPAVTFGLALGGQITLITGVFVYWIAQLLGSSTAACFLLL
EsTIP2;2 AVAHAFALFVGVSI AANISGGHLNPAVTLGLAVGGNITLITGFFYWIAQCLGSIVACLILL
EsTIP2;3 ALAHAFALFVGVSI AANISGGHLNPAVTLGLAVGGNITLITGFLYWIAQCLGSIVACLILL
EsTIP3;2 ALAHALALFAAVSAAINVS GGHVNPAVTLGALFGGRISVIRAVYYWIAQLLGA I LACLILL
EsTIP4;1 AVAHAFVAVMISAG-HISGGHLNPAVTIGLLFGGHITVFRAFLYWIDQLLASSAACFLLL
EsNIP1;2 AAVWGLTVMVLVYSLGHISGAHFNPAVTIAFASCRRFPLKQVPAYVISQLIGSTLAAATL
EsNIP3;1 ALVWGLTVTVMIIYSIGHVSGAHFNPAVSI AFASSKKFPFKQVPAYIAAQVLGSTLAAAAL
EsNIP5;1 AACAGLAVMIIILSTGHISGAHLNPSLTIAFAALRHF PWSHPAYIAAQVSAS I CASFAL

AtTIP1;1 KFATGG----LAVPAFGLSAGVGVLN---AFVFEIVMTFGLVYTVYATAID---PKNGSL
AtTIP1;2 SFATGG----EPIPAFGLSAGVGS LN---ALVFEIVMTFGLVYTVYATAVD---PKNGSL
AtTIP2;3 VEV TNG----KSVPTHGVSAGLGAVE---GVVMEIVVTFALVYTVYATAAD---PKKGS L
AtPIP2;1 KAFQSSYYTRYGGGANS LADGYSTGT---GLAAEIIIGTFVLVYTVFSATDPKRSARDSHV
AtPIP2;4 KAFQSSYYTRYGGGANELADGYNKGT---GLGAEIIGTFVLVYTVFSATDPKRNARDSHV
AtNIP1;2 RLLFGLDQDVCSGKHDV FVGTLP SGNLQSFVIEFIITFYLMFVISGVATD-----NRAI
EsPIP1;1 KGFQPKQYQSLGGGANTVAHG YTKGS---GLGAEIIGTFVLVYTVFSATDAKRNARDSHV
EsPIP1;2 KGFQPKQYQALGGGANTIAHG YTKGS---GLGAEIIGTFVLVYTVFSATDAKRNARDSHV
EsPIP1;3 KGFQPNPYQTLGGGANTVAHG YTKGS---GLGAEIIGTFVLVYTVFSATDAKRSARDSHV
EsPIP1;4 KGFQPTPYQTLGGGANTVAPGYTKGS---GLGAEIIGTFVLVYTVFSATDAKRSARDSHV
EsPIP1;5 KGFQSGPYQANGGGANVVAHG YTKGS---GLGAEIVGT FVLVYTVFSATDAKRSARDSHV
EsPIP2;1 KAFQSSYYIRYGGGANS LAEGYSTGT---GLAAEIIIGTFVLVYTVFSATDPKRSARDSHV
EsPIP2;2 KAFQSSYYVRYGGGANS LAEGYSTGT---GLAAEIIIGTFVLVYTVFSATDPKRNARDSHV
EsPIP2;3 KAFQSSYYVRYGGGANS LADGYNTGT---GLAAEIIIGTFVLVYTVFSATDPKRNARDSHV
EsPIP2;4 KAFQSSYYTRYGGGANELADGYNKGT---GLGAEIIGTFVLVYTVFSATDPKRSARDSHI

EsPIP2;5 KSFQSAYYTRYGGGANGLADGYSVGT---GVAAEIVGTFVLVYTVFSATDPKRSARDSHV
EsPIP2;6 KIFQSTYYNRYGGGANVLADGYNVGV---GVGAEIIGTFVLVYTVFSATDPKRNARDSHI
EsPIP2;7 KAFMKTPYNTLGGGANVADGYSKGT---ALGAEIIGTFVLVYTVFSATDPKRSARDSHI
EsTIP1;1 KFATGG----LVVPAFGLSAGVGVLN---AFVFEIVMTFGLVYTVYATAID---PKNGSL
EsTIP1;2 TFATGG----LAVPAFGLSAGVGS LN---AFVFEIVMTFGLVYTVYATAID---PKNGSL
EsTIP1;3 KVSTGG----METAAFSLSYGVTPWN---AVVFEIVMTFGLVYTVYATAVD---PKKGDI
EsTIP2;1 KFVTGG----LAVPHTSVAAGVGAIE---GVVMEI IITFALVYTVYATAAD---PKNGSL
EsTIP2;2 VFVTNG----ESVPTHGVAAGLGAVE---GIVMEIVVTFALVYTVYATAAD---PKKGSL
EsTIP2;3 VFVTNG----ESVPTHGVGAGLGAVE---GIVMEIVVTFALVYTVYATAAD---PKKGSL
EsTIP3;2 RLATNG----SRPIGYHVASGVGELH---GLLMEI IITFALVYVYSTS ID---PKRGS I
EsTIP4;1 SYLTGG----MGTPVHTLASGISYTQ---GIWEI IITFSL LFTVYATIVD---PKKGSL
EsNIP1;2 RLLFGLDNDVCSGKHDV FVGTLPSGSDLQSFVIEFIIITFYLMFIIISGVATD-----NRAI
EsNIP3;1 RLVFHLNDNVCSLKG DVYVGTYPNSNTTSFVMEFITTFNLMFVIAAVATD-----KRAT
EsNIP5;1 KAVFHP---FMSGG-----VTVPSSSIGQAFLEFIISFILLFVVTA VATD-----TRAV

AtTIP1;1 GTIAPIAIGFIVGANILAGGAFSGASMNPAVAFGPAVVS WT---WTNHWVYWAGPLVGGG
AtTIP1;2 GTIAPIAIGFIVGANILAGGAFSGASMNPAVAFGPAVVS WT---WTNHWVYWAGPLIGGG
AtTIP2;3 GTIAPIAIGFIVGANILAAGPFSGGS MNPARSFGPAVVS GD---LSQIWIYVWGP LVGGA
AtPIP2;1 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAVIYNKSKPWDDHWIEFWVGPFIGAA
AtPIP2;4 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAVIYNNEKAWDDQWIEFWVGPFIGAA
AtNIP1;2 GELAGLAVGSTVLLNVI IAGPVSGASMNPG RSLGPAMVYSC---YRGLWYIIVSP IGVAV
EsPIP1;1 PILAPLPIGFVFLVHLATIPITGTGINPARSLGAAI IYNKDHSWDDHWIEFWVGPFIGAA
EsPIP1;2 PILAPLPIGFVFLVHLATIPITGTGINPARSLGAAI IFNKDNAWDDHWIEFWVGPFIGAA
EsPIP1;3 PILAPLPIGFVFLVHLATIPITGTGINPARSLGAAI IYNKDHAWDDHWIEFWVGPFIGAA
EsPIP1;4 PILAPLPIGFVFLVHLATIPITGTGINPARSLGAAI IYNKDHSWDDHWIEFWVGPFIGAA
EsPIP1;5 PILAPLPIGFVFLVHLATIPITGTGINPARSLGAAI IYNKDHAWDDHWIEFWVGPFIGAA
EsPIP2;1 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAVIFNESKPWDDHWIEFWVGPFIGAA
EsPIP2;2 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAV IYNESKPWDDHWIEFWVGPFIGAA
EsPIP2;3 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAVIFNESKPWDDHWIEFWVGPFIGAA
EsPIP2;4 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAV IYNQEKAWDDQWIEFWVGPFIGAA
EsPIP2;5 PVLAPLPIGFVFI VHLATIPITGTGINPARSLGAAI IYNKDQAWDDHWIEFWVGPFIGAA
EsPIP2;6 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAV VYNNQKAWDDQWIEFWVGPFIGAA
EsPIP2;7 PVLAPLPIGFVFMVHLATIPITGTGINPARSFGAAV IYNNKAWDDHWIEFWVGPFIGAL
EsTIP1;1 GTIAPIAIGFIVGANILAGGAFSGASMNPAVAFGPAVVS WS---WSNHWVYWAGPLVGGG
EsTIP1;2 GTIAPIAIGFIVGANILAGGAFSGASMNPAVAFGPAVVS WS---WSNHWVYWAGPLVGGG
EsTIP1;3 GIIAPLAI GLIVGANILVGGAFDGASMNP AVSFGPAVVS WT---WTNHWVYVWGPFIGAA
EsTIP2;1 GTIAPLAI GLIVGANILAAGPFSGGS MNPARSFGPAVAAGD---FSGHWVYVWGPFIGGG
EsTIP2;2 GTIAPIAIGFIVGANILAAGPFSGGS INPARSFGPAVVS GD---FSQIWIYVWGP LVGGA
EsTIP2;3 GTIAPIAIGFIVGANILAAGPFSGGS MNPARSFGPAVVS GD---LSQIWIYVWGP LVGGA
EsTIP3;2 GIIAPLAI GLIFGANMLVGGPFDGASMNPARTFGPALV GWR---WHNHWIYVWGPFIGGA
EsTIP4;1 DGLGPLLIGFVVGANILAGGAFSGASMNP ARSFGPALVSGN---WTDHWVYVWGPFIGGG
EsNIP1;2 GELAGIAVGSTVLLNVI IAGPVSGASMNPG RSLGPAMVYNC---YKGIWIYIIVSP I LGAI
EsNIP3;1 GSFAGVAIGATVVLDI LMSGPISGASMNP ARS LGPAFIWGC---YKDLWLYIIVSPVLGAL
EsNIP5;1 GELAGIAVGATVMLN IIVAGPSSGGS MNPVRTLGP AVASGN---YRSLWVYLVAPT LGAI

Silicic Acid Transporters (not found)

Urea Transporters

NtAQP1 SSVGIGQVAVAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRAIFYIVMQCLG
ZmPIP1;5 ATVGIQGIAWSFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRALFYVMVMQCLG
NtTIPa PLVSLFFVAMAHALVVAVTISAGFRISGGHLNPAVTLGLCMGGHITVFRSILYWIDQLLA
AtTIP4;1 TLVGLFAVAVAHAFVAVMISAG-HISGGHLNPAVTLGLLGGHISVFRAFLYWIDQLLA
AtTIP1;1 TPSGLVAAAHAHAFGLFVAVSVGANISGGHVNPVTFGAEFIGGNITLLRGILYWIAQLLG
AtTIP1;2 TPSGLVAAAALAHAFGLFVAVSVGANISGGHVNPVTFGVLLGGNITLLRGILYWIAQLLG
AtTIP1;3 TPAGLVAASLSHAFALFVAVSVGANVSGGHVNPVTFGAEFIGGNITLLRAILYWIAQLLG
AtTIP2;1 DTPGLVAIAVCHGFALFVAVAIGANISGGHVNPVTFGLAVGGQITVITGVFYWIAQLLG
AtTIP5;1 GPFGLVIPAIALNALSSSVYISWNVSGGHVNPVTFAMAVAGRISVPTAMFYWTSQMLA
CpNIP1 --VSQLGASVAGGLIVTVMYIYAVGHISGAHMNPAVTLAFAATRHF PWKQVPLYAAAQLSG
OsNIP2;1 --ISQLGQSIAGGLIVTVMYIYAVGHISGAHMNPAVTLAFAVFRHF PWIQVPPFYWAAQFTG
AtNIP6;1 --ETLIGCAASAGLAVMIVILSTGHISGAHLNPAVTLAFAALKHF PWKHVPVYIGAQVMA
EsPIP1;1 SSVGIGQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSFTRALYYIVMQCLG
EsPIP1;2 ASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRAVYYIVMQCLG
EsPIP1;3 ASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLLLARKLSLSRAVFMVMQCLG
EsPIP1;4 ASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRAVFYMIMQCLG
EsPIP1;5 ASVGIQGIAWAFGGMIFALVYCTAGISGGHINPAVTFGLFLARKLSLTRAVFYIVMQCLG
EsPIP2;1 GGVGILGIAWAFGGMIFILVYCTAGISGGHINPAVTFGLLLARKVSLVRAILYMVAQCLG
EsPIP2;2 GGVGILGIAWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVSLIRAVLYMVAQCLG
EsPIP2;3 GGVGILGIAWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVSLIRAVLYMVAQCLG
EsPIP2;4 GGVGILGIAWAFGGMIFVLVYCTAGVSGGHINPAVTFGLFLARKVSLVRTVLYIVAQCLG
EsPIP2;5 AGVGILGIAWAFGGMIFILVYCTAGISGGHINPAVTFGLFLARKVTLVRAVMMVAQCLG
EsPIP2;6 ASVGLLGISWAFGGMIFILVYCTAGISGGHINPAVTFGLFLASKVSLVRAISYMVAQCLG
EsPIP2;7 DGVGLLGIAWAFGGMIFVLVYCTAGISGGHINPAVTFGLFLARKVSLVRAVGYMIAQCLG
EsTIP1;1 TPSGLVAAAALAHAFGLFVAVSVGANISGGHVNPVTFGAEVGGNITLLRGILYWIAQLAG
EsTIP1;2 TPSGLVAAAALAHAFGLFVAVSVGANISGGHVNPVTFGAEFIGGNITLLRGILYWIAQLLG
EsTIP1;3 TPSGLVAAASLSHAFALFVAVSVGANVSGGHVNPVTFGAEFIGGNITLMRAILYWIAQLLG
EsTIP2;1 DTPGLVAIAVCHGFALFVAVAIGANISGGHVNPVTFGLALGGQITLITGVFYWIAQLLG
EsTIP2;2 DPAGLVAVAVAHAFALFVGVSAIANISGGHLNPAVTLGLAVGGNITIIITGFFYWIAQCLG
EsTIP2;3 DPAGLVAIALAHAFALFVGVSAIANISGGHLNPAVTLGLAVGGNITLITGFLYWIAQCLG
EsTIP2;4 DASGLVAIAVCHGFALFVAVSIAANHSGGHVNPVTFGLVGGKLVKIVTGLVYVVAQCLG
EsTIP3;1 TPGGLVLVALAHAFALFAAVSAAINVSGGHVNPVTFGALIGGRLSAIRAIYYWIAQLLG
EsTIP3;2 TPGGLVLVALAHALALFAAVSAAINVSGGHVNPVTLGALFGRISVIRAVYYWIAQLLG
EsTIP4;1 TLVGLFAVAVAHAFVAVMISAG-HISGGHLNPAVTLGLLFGGHITVFRFLYWIDQLLA
EsTIP5;1 GPFVLIIPAIALAFALSSSVYISWNVSGGHVNPVTFGMAIAGRISVPTAMFYWTSQMLA
EsNIP1;2 --VTLPGIAAVWGLTVMVLVYSLGHISGAHFNPVTLAFAVSCRFPKQVPAYVISQLIG
EsNIP2;1 --VTLVGIADVWGLVIMVLVYTLGHTS-AHFNPVTLAFASTQRFP LHHVPAYLTVQVIG
EsNIP3;1 --VTLPGIALVWGLTVMYISIGHVSGAHFNPAVSIAFASKKFPKQVPAYIAAQVLG
EsNIP4;1 --ITFPGICVTWGLIVMVMYISTGHISGAHFNPVTLAFAIFRRFPWYQVPLYIGAQLTG

EsNIP4;2 --VTFPGVCITWGLIVMVMYISTGHISGAHFNPAVTFITFAIFRRFPWYQVPLYIGAQLVG
 EsNIP4;3 --VTFPGICVTWGLIVMVMYISIGHISGAHFNPAVTITFAIFRRFPWYQVPSYIGAQLAG
 EsNIP5;1 --ETLIGNAACAGLAVMI I I LSTGHISGAH LNP SLT I AFAALRHFPWSHV PAYIAAQVSA
 EsNIP6;1 --VTLIGCAASAGLAVMIVILSTGHISGAH LNP AVT I AFAALKHFPWKHV PVYIGAQIMA
 EsNIP7;1 --VGLLEYAATAGLSVVVVVYSVGHISGAH LNP SIT I AFAVFGGFPWSQVPLYITAQTLG

NtAQP1 AICGAGVVKGFVMPYQR---LGGGANVNVHGYTKGDGLGAEIIGTFVLLVYTVFSATDAK
 ZmPIP1;5 AICGAGVVKGFQEGLYMG---AGGGANAVNPGYTKGDGLGAEIVGTFVLLVYTVFSATDAK
 NtTIPa SVAACALLNYLTAG-----LETPVHTLANGVSYGQGIIMEVILTFSLLFYTVYTTIVDP
 AtTIP4;1 SSAACFLLSYLTGG-----MGTPVHTLASGVSYTQGI I WEI I LTFSLLFYTVYATIVDP
 AtTIP1;1 SVVACLILKFATGG-----LAVPAFGLSAGVGLNNAFVFEIVMTFGLVYTVYATAIDP
 AtTIP1;2 SVAACFLLSFATGG-----EPIPAFGLSAGVGLNALVFEIVMTFGLVYTVYATAVDP
 AtTIP1;3 AVVACLLLKVSTGG-----METAAFSLSYGVT PWNNAVFEIVMTFGLVYTVYATAVDP
 AtTIP2;1 STAACFLLKYVTGG-----LAVPHTSVAAGLSIEGVVMEI I ITFALVYTVYATAADP
 AtTIP5;1 SVMACLVLKVTVME-----QHVPIYKIAGEMTGFGASVLEGVLAFLVYTVFT-ASDP
 CpNIP1 ATCAFTLRLLLHPIKHLG-----TTTPSGSDLQALVMEIVVTFSSMFMVTCAVAT--
 OsNIP2;1 AICASFVLKAVIHPVDVIG-----TTPVGPWHSLVVEVIVTFNMMFVTLAVAT--
 AtNIP6;1 SVSAAFALKAVFEPTMSG-----GVTVPVGLSQAFALFIIISFNLMFVVTAVAT--
 EsPIP1;1 AICGAGVVKGFQPKQYQS---LGGGANTVAHGYTKGSGLGAEIIGTFVLLVYTVFSATDAK
 EsPIP1;2 AICGAGVVKGFQPKQYQA---LGGGANTIAHGYTKGSGLGAEIIGTFVLLVYTVFSATDAK
 EsPIP1;3 AICGAGVVKGFQPNPYQT---LGGGANTVAHGYTKGSGLGAEIIGTFVLLVYTVFSATDAK
 EsPIP1;4 AICGAGVVKGFQPTPYQT---LGGGANTVAPGYTKGSGLGAEIIGTFVLLVYTVFSATDAK
 EsPIP1;5 AICGAGVVKGFQSGPYQA---NGGGANVAHGYTKGSGLGAEIVGTFVLLVYTVFSATDAK
 EsPIP2;1 AICGVGFVKAFQSSYYIR---YGGGANSLAEGYSTGTGLAAEIIGTFVLLVYTVFSATDPK
 EsPIP2;2 AICGVGFVKAFQSSYYVR---YGGGANSLAEGYSTGTGLAAEIIGTFVLLVYTVFSATDPK
 EsPIP2;3 AICGVGFVKAFQSSYYTR---YGGGANSLADGYNTGTGLAAEIIGTFVLLVYTVFSATDPK
 EsPIP2;4 AICGCGFVKAFQSSYYTR---YGGGANLADGYNKGTTGLGAEIIGTFVLLVYTVFSATDPK
 EsPIP2;5 AICGVALVKSFSAYYTR---YGGGANLADGYSVGTGVAAEIVGTFVLLVYTVFSATDPK
 EsPIP2;6 ATCGVGLVKIFQSTYYNR---YGGGANVLADGYNVGVGVGAEIIGTFVLLVYTVFSATDPK
 EsPIP2;7 AICGVGFVKAFMKTPYNT---LGGGANTVADGYSKGTALGAEIIGTFVLLVYTVFSATDPK
 EsTIP1;1 SVVACLLLKVFATGG-----LVVPAFGLSAGVGLNNAFVFEIVMTFGLVYTVYATAIDP
 EsTIP1;2 SVVACFLLTFATGG-----LAVPAFGLSAGVGLNNAFVFEIVMTFGLVYTVYATAIDP
 EsTIP1;3 AVVACLLLKVSTGG-----METAAFSLSYGVT PWNNAVFEIVMTFGLVYTVYATAVDP
 EsTIP2;1 STAACFLLKFVTGG-----LAVPHTSVAAGVGAIEGVVMEI I ITFALVYTVYATAADP
 EsTIP2;2 SIVACLLLVFVTNG-----ESVPTHGVAAGLGAVEGIVMEIVVTFALVYTVYATAADP
 EsTIP2;3 SIVACLLLVFVTNG-----ESVPTHGVGAGLGAVEGIVMEIVVTFALVYTVYATAADP
 EsTIP2;4 STVACFLLKFTTGG-----LAIPHSVAAGVGSIEGVVMEI I ITFALVYTVYATAVDP
 EsTIP3;1 AILACLLLRLLSTNG-----LRPVGFRLASGVGAVNGLVLEI I LTFGLVYVVYSTLIDP
 EsTIP3;2 AILACLLLRLLATNG-----SRPIGYHVASGVGELHGLLMEI I LTFALVYVVYSTSIDP
 EsTIP4;1 SSAACFLLSYLTGG-----MGTPVHTLASGISYTQGI I WEI I LTFSLLFYTVYATIVDP
 EsTIP5;1 SVMACLVLKVTVIE-----QHVPIYKIAGEMTGFGASVLEGVLAFLVYTVFT-ANDP
 EsNIP1;2 STLAAATLRLFLGLDNDVCSGKHDFVGTLPSPGSDLQSFVIEFIITFYLMFIIISGVAT--
 EsNIP2;1 STLASATLRLFLFDLNDVCSKKHDFVLTGSSPSGSDLQAFVMEFVITCFMLLVCAITT--
 EsNIP3;1 STLAAAALRLVFLHLDNDVCSLKGDVYVGTYPNSNTTSFVMEFITTFNLMFVIAAVAT--

EsNIP4;1 SLLASLTLRLMFKVTP-----EAFFGTTPADSSARALVAEIIISFLLMFVISGVAT-
 EsNIP4;2 SLLASLTLRLMFKVTP-----EAYFGTTPIDSAARALVAEIIISFLLMFVISGVAT--
 EsNIP4;3 SLLASLTLRLMFKVTP-----EAFFGTTPADSSARALVAEIIISFLLMFVISGVAT--
 EsNIP5;1 SICASFALKAVFHPFMSG-----GVTVPSSSIGQAFALEFIISFILLFVVTVAVAT--
 EsNIP6;1 SVCAAFALKAVFEPTMSG-----GVTVPTVALSQAFALEFIITFNLMFVVTVAVAT-
 EsNIP7;1 ATAATLVGVSVYGVNADL-----MATKPTLSCVSAFCVELVATGIWVFLASALHCG-

NtAQP1 RNARDSYVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIIYNTDQAWDDHWIFW
 ZmPIP1;5 RSARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIVYNSHAWNDHWIFW
 NtTIPa K---KGILEGMGPLLTLGLVVGANIMAGGPFSGASMNPARSFGPAFVSG---IWDTHWVYW
 AtTIP4;1 K---KGSLDGFGPLLTFVVGANILAGGAFSGASMNPARSFGPALVSG---NWDTHWVYW
 AtTIP1;1 K---NGSLGTIAPIAIGFIVGANILAGGAFSGASMNPAAVAFGPAVVSW---TWTNHWVYW
 AtTIP1;2 K---NGSLGTIAPIAIGFIVGANILAGGAFSGASMNPAAVAFGPAVVSW---TWTNHWVYW
 AtTIP1;3 K---KGDIGIAPLAIGLIVGANILVGGAFDGSASMNPAVSFGPAVVSW---IWTNHWVYW
 AtTIP2;1 K---KGSGLTIAPLAIGLIVGANILAAGPFSGGSMNPARSFGPAVAAG---DFSGHWVYW
 AtTIP5;1 R---RGLPLAVGPFI FIGFVAGANVLAAGPFSGGSMNPACAFGSAMVYG---SFKNQAVYW
 CpNIP1 ---DTKAVGELAGLAVGSAVCITSILAGEVSGGSMNPVRTLGPA MASD---NYKGLWVYF
 OsNIP2;1 ---DTRAVGELAGLAVGSAVCITSIFAGAIISGSMNPARTLGPALASN---KFDGLWIYF
 AtNIP6;1 ---DTRAVGELAGI AVGATVMLNILIAGPATASASMNPVRTLGPAAIAN---NYRAIWVYL
 EsPIP1;1 RNARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIIYNKDHSWDDHWVFW
 EsPIP1;2 RNARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIIFNKDNAWDDHWVFW
 EsPIP1;3 RSARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIIYNKDHAWDDHWIFW
 EsPIP1;4 RSARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIIYNKDHSWDDHWIFW
 EsPIP1;5 RSARDSHVPILAPLPIGFAVFLVHLATIPITGTGINPARSLGAAIIYNKDHAWDDHWIFW
 EsPIP2;1 RSARDSHVPVLAPLPIGFAVFMVHLATIPITGTGINPARSFGAAVIFNESKPWDDHWIFW
 EsPIP2;2 RNARDSHVPVLAPLPIGFAVFMVHLATIPITGTGINPARSFGAAVIYNESKPWDDHWIFW
 EsPIP2;3 RNARDSHVPVLAPLPIGFAVFMVHLATIPITGTGINPARSFGAAVIFNESKPWDDHWIFW
 EsPIP2;4 RSARDSHIPVLAPLPIGFAVFMVHLATIPITGTGINPARSFGAAVIYNQEKAWDDQWIFW
 EsPIP2;5 RSARDSHVPVLAPLPIGFAVFI VHLATIPITGTGINPARSLGAAIIYNKDQAWDDHWIFW
 EsPIP2;6 RNARDSHIPVLAPLPIGFSVMVHLATIPITGTGINPARSFGAAVVYNNQKAWDDQWIFW
 EsPIP2;7 RSARDSHIPVLAPLPIGFAVFMVHLATIPITGTGINPARSFGAAVIYNNKAWDDHWIFW
 EsTIP1;1 K---NGSLGTIAPIAIGFIVGANILAGGAFSGASMNPAAVAFGPAVVSW---SWSNHWVYW
 EsTIP1;2 K---NGSLGTIAPIAIGFIVGANILAGGAFSGASMNPAAVAFGPAVVSW---SWSNHWVYW
 EsTIP1;3 K---KGDIGIAPLAIGLIVGANILVGGAFDGSASMNPAVSFGPAVVSW---TWTNHWVYW
 EsTIP2;1 K---NGSLGTIAPLAIGLIVGANILAAGPFSGGSMNPARSFGPAVAAG---DFSGHWVYW
 EsTIP2;2 K---KGSGLTIAPIAIGFIVGANILAAGPFSGGSINPARSFGPAVVSG---DFSQIWIYW
 EsTIP2;3 K---KGSGLTIAPIAIGFIVGANILAAGPFSGGSMNPARSFGPAVVSG---DLSQIWIYW
 EsTIP2;4 K---NGTLGTIAPLAIGLIVGANILAAGPFSGGSMNPARSFGPALAAG---DFSGHWVYW
 EsTIP3;1 K---RGSGLIAPLAIGLIVGANTLVGGPFSGASMNPAAVAFGPAVVSW---RWHDHWIYW
 EsTIP3;2 K---RGSIGIAPLAIGLIFGANMLVGGPFSGASMNPARTFGPALVSW---RWHNHWIYW
 EsTIP4;1 K---KGSLDGLGPLLTFVVGANILAGGAFSGASMNPARSFGPALVSG---NWDTHWVYW
 EsTIP5;1 R---RGLPLAVGPFI FIGFVAGANVLAAGPFSGGSMNPACAFGSAMVYG---SFKNQAVYW
 EsNIP1;2 ---DNRAIGELAGI AVGSTVLLNVI IAGPFVSGASMN PGRSLGPAMVYN---CYKGIWIYI
 EsNIP2;1 ---SKRTSEELEGLIIGATVTLNVIFAGEVSGASMNPARSLGPALVWG---CYKGIWIYL

EsNIP3;1 ---DKRATGSFAGVAIGATVVLDILMSGPISGASMNPARSLGPAFIWG---CYKDLWLYI
EsNIP4;1 ---DNRAVGELAGIAVGMTIMLNVFVAGPISGASMNPARSLGPAIVMG---VYKGIWIYI
EsNIP4;2 ---DNRAIGELAGIAVGMTIMLNVFVAGPISGASMNPARSLGPAIVMG---VYKNIWVYI
EsNIP4;3 ---DSRAIGELAGIAVGMTIMLNVFVAGPISGASMNPARSLGPAIVMG---KYKGIWVYI
EsNIP5;1 ---DTRAVGELAGIAVGATVMLNILVAGPSSGSMNPVRTLGPAVASG---NYRSLWVYL
EsNIP6;1 ---DTRAVGELAGIAVGATVMLNILIAGPATSASMNPVRTLGPAAAN---DYRAIWVYL
EsNIP7;1 ---PHQNSGNLTGLVIGTVISLGVLTITGPISGSMNPARSLGPAVVAW---DFEDIWVYL