

## Structure-based sequence alignment of TM2

Helix 2 PIP

1J4N	50	DNVKVS <b>L</b> A <b>F</b> GLSIATLAQSVGH	71
1FX8	40	GQWEISVI <b>W</b> GLGVAMAIYLTAG	61
1RC2	35	GFAGVALA <b>F</b> GLTVLTMAFAVGH	56
1Z98	73	GLLGIAWA <b>F</b> GGMIFVLVYCTAG	94
2B6O	40	HVLQVALA <b>F</b> GLALATLVQAVGH	61
2F2B	54	DWVAIGLA <b>F</b> GF <del>A</del> IAASIYALGN	75
OsPIP1;1		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
OsPIP1;2		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
OsPIP1;3		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
OsPIP1;4		GIQGIPWS <b>F</b> GS <b>M</b> IFALVYCTAG	
OsPIP1;5		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
OsPIP2;1		GVLGIAWA <b>F</b> GGMIFILVYCTAG	
OsPIP2;2		GILGIAWA <b>F</b> GGMIFILVYCTAG	
OsPIP2;3		GILGIAWA <b>F</b> GGMIFILVYCTAG	
OsPIP2;4		GVLGIAWA <b>F</b> GGMIFILVYCTAG	
OsPIP2;5		GVLGIAWA <b>F</b> GGMIFILVYCTAG	
OsPIP2;6		GTLGIAWA <b>F</b> GGMIFILVYCTAG	
OsPIP2;7		GYLGVAWS <b>F</b> GATIFVLVYCTGG	
OsPIP2;8		GVLGIAWA <b>F</b> GG <b>L</b> IFVLVYCTAG	
ZmPIP1;1		GIQGIAWS <b>F</b> GGMILALVYCTAG	
ZmPIP1;2		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
ZmPIP1;3		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
ZmPIP1;4		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
ZmPIP1;5		GIQGIAWS <b>F</b> GGMIFALVYCTAG	
ZmPIP1;6		GIQGIAWA <b>F</b> GGMIFALVYCTAG	
ZmPIP2;1		GVLGIAWA <b>F</b> GGMIFVLVYCTAG	
ZmPIP2;2		GVLGIAWA <b>F</b> GGMIFVLVYCTAG	
ZmPIP2;3		GILGIAWA <b>F</b> GGMIFILVYCTAG	
ZmPIP2;4		GILGIAWA <b>F</b> GGMIFILVYCTAG	
ZmPIP2;5		GVLGIAWA <b>F</b> GGMIFILVYCTAG	
ZmPIP2;6		GILGIAWA <b>F</b> GGMIFILVYCTAG	
ZmPIP2;7		GILGIAWA <b>F</b> GGMIFILVYCTAG	
AtPIP1;1		GIQGIAWA <b>F</b> GGMIFALVYCTAG	
AtPIP1;2		GIQGIAWA <b>F</b> GGMIFALVYCTAG	
AtPIP1;3		GIQGIAWA <b>F</b> GGMIFALVYCTAG	
AtPIP1;4		GIQGIAWA <b>F</b> GGMIFALVYCTAG	
AtPIP1;5		GIQGIAWA <b>F</b> GGMIFALVYCTAG	
AtPIP2;1		GILGIAWA <b>F</b> GGMIFILVYCTAG	
AtPIP2;2		GILGIAWA <b>F</b> GGMIFILVYCTAG	
AtPIP2;3		GILGIAWA <b>F</b> GGMIFILVYCTAG	
AtPIP2;4		GILGIAWA <b>F</b> GGMIFVLVYCTAG	
AtPIP2;5		GVLGIAWA <b>F</b> GGMIFILVYCTAG	
AtPIP2;6		GLLGISWA <b>F</b> GGMIFILVYCTAG	
AtPIP2;7		GLLGIAWA <b>F</b> GGMIFVLVYCTAG	
AtPIP2;8		GLLGIAWA <b>F</b> GGMIFVLVYCTAG	

Helix 2 TIP

1J4N	50	DNVKVSLA <b>F</b> GLSIATLAQSVGH	71
1FX8	40	GQWEISVI <b>W</b> GLGVAMAIYLTAG	61
1RC2	35	GFAGVALA <b>F</b> GLTVLTMAFAVGH	56
1Z98	73	LLGIAWA <b>F</b> GGMIFVLVYCTAG	94
2B60	40	HVLQVALA <b>F</b> GLALATLVQAVGH	61
2F2B	54	DWVAIGLA <b>F</b> GFAlAASIYALGN	75
OsTIP1;1		GLIAAAVA <b>H</b> AFALFVAVSVGAN	
OsTIP1;2		GLIAASLA <b>H</b> ALALFVAVAVGAN	
OsTIP2;1		GLVAIAIA <b>H</b> ALALFVGVSVAAAN	
OsTIP2;2		GLVAVAV <b>C</b> HGFGLFVAVAIGAN	
OsTIP2;3		GLVAIAIA <b>H</b> AFALFVGVSMAN	
OsTIP3;1		GLVAVSLA <b>H</b> ALALAVAVAVAVN	
OsTIP3;2		GLLVAVAV <b>H</b> ALALAAAVAVSRN	
OsTIP4;1		ALAGVAIA <b>T</b> ALAAGVLVTAGFH	
OsTIP4;2		AVTAAAMA <b>Q</b> ALVVAVLATAGFH	
OsTIP4;3		GLTAVAAA <b>H</b> ALVVAVMVSAGLH	
OsTIP5;1		SLMATAVA <b>Q</b> AFGLFAAVFIAAD	
ZmTIP1;1		GLIAAAVA <b>H</b> AFALFVAVSVGAN	
ZmTIP1;2		GLIAASLA <b>H</b> ALALFVAVSVGAN	
ZmTIP2;1		GLVAIAIA <b>H</b> ALALFVGVSVAAAN	
ZmTIP2;2		GLVAIAVA <b>H</b> ALALFVGVSVAAAN	
ZmTIP2;3		GLVAIAIA <b>H</b> AFALFVGVSMAN	
ZmTIP3;1		GLVAVALA <b>H</b> ALALAVAVAVAVN	
ZmTIP4;1		TLAAVAIA <b>H</b> ALAAGVLVTAGFH	
ZmTIP4;2		TLAAVAIA <b>H</b> ALAAGVLVTAGFH	
ZmTIP4;3		DLTAVAL <b>Q</b> ALVVAVIATAGFH	
ZmTIP4;4		GLTAVALA <b>H</b> TLVVAVMVSAGLH	
ZmTIP5;1		PLVATAVA <b>Q</b> AFGLFAAVLIAAD	
AtTIP1;1		GLVAAA <b>V</b> A <b>H</b> AFGLFVAVSVGAN	
AtTIP1;2		GLVAAA <b>L</b> A <b>H</b> AFGLFVAVSVGAN	
AtTIP1;3		GLVAA <b>S</b> L <b>S</b> <b>H</b> AFALFVAVSVGAN	
AtTIP2;1		GLVAIA <b>V</b> <b>C</b> HGFALFVAVAIGAN	
AtTIP2;2		GLVAVAVA <b>H</b> AFALFVGVSIAN	
AtTIP2;3		GLVAIAIA <b>H</b> AFALFVGVSIAN	
AtTIP3;1		GLLILVALA <b>H</b> AFALFAAVSAAIN	
AtTIP3;2		GLVLVALA <b>H</b> ALALFAAVSAAIN	
AtTIP4;1		GLFAVAVA <b>H</b> AFVVAVMISAG-H	
AtTIP5;1		GVLIPAI <b>A</b> NALALSSSVYISWN	

Helix 2 NIP

1J4N	50	DNVKVSLA <b>F</b> GLSIATLAQSVGH	71
1FX8	40	GQWEISVI <b>W</b> GLGVAMAIYLTAG	61
1RC2	35	GFAGVALA <b>F</b> GTLVLTMAFAVGH	56
1Z98	73	GLLGIAWA <b>F</b> GGMIFVLVYCTAG	94
2B6O	40	HVLQVALA <b>F</b> GLALATLVQAVGH	61
2F2B	54	DWVAIGLA <b>F</b> GF AIAASIYALGN	75
OsNIP1;1		TFPGVAIV <b>W</b> GLAVMVMVYAVGH	
OsNIP1;2		TFPGICAV <b>W</b> GLVVMVLVYTVSH	
OsNIP1;3		TFPGICIT <b>W</b> GLAVMVMVYSVGH	
OsNIP1;4		TFPGVAVAW <b>G</b> AAVMAMVYAVGH	
OsNIP1;5		MFPGICVV <b>W</b> GLVVTVLVYSVGH	
OsNIP2;1		SQLGQSI <b>A</b> GGLIVTVMYAVGH	
OsNIP2;2		SQLGQSV <b>V</b> GGLIVTVMYATGH	
OsNIP3;1		SPFGNAAC <b>A</b> GLAVTTIILSTGH	
OsNIP3;2		SLLGIATS <b>A</b> GLAVTVLVSLIH	
OsNIP3;3		TLLGIATS <b>A</b> GLAVTVLVSLIH	
OsNIP3;4		GLVGVAAS <b>I</b> GLAVAVLVMSLAH	
OsNIP3;5		TLVGVAAS <b>A</b> GLAVVAVVLSVVH	
OsNIP4;1		GTLTFPMV <b>C</b> LVVAMTVAFVLSW	
ZmNIP1;1		TFPGVAIV <b>W</b> GLAVMVMVYAVGH	
ZmNIP2;1		SQLGQSV <b>A</b> GGLIVTVMYAVGH	
ZmNIP2;2		SQLGQSV <b>A</b> GGLIVTVMYATGH	
ZmNIP3;1		SPFGNAAC <b>A</b> GLAVATVILSTGH	
AtNIP1;1		TLPGIAIV <b>W</b> GLTIMVLIYSLGH	
AtNIP1;2		TLPGIAIV <b>W</b> GLTVMVLVYSLGH	
AtNIP2;1		TLVGIAV <b>V</b> WGIVIMVLVYCLGH	
AtNIP3;1		TLPGIAL <b>V</b> WGLVVTVMYISIGH	
AtNIP4;1		TFPGICV <b>T</b> WGLIVMVMYISTGH	
AtNIP4;2		TFPGICV <b>T</b> WGLIVMVMYISTGH	
AtNIP5;1		TLIGNAAC <b>A</b> GLAVMIIILSTGH	
AtNIP6;1		TLIGCAAS <b>A</b> GLAVMIVILSTGH	
AtNIP7;1		GLLEYAV <b>T</b> AGLSVVVVVYSIGH	

Helix 2 SIP

1J4N	50	DNVKVSLA <b>F</b> GLSIATLAQSVGH	71
1FX8	40	GQWEISVI <b>W</b> GLGVAMAIYLTAG	61
1RC2	35	GFAGVALA <b>F</b> GTLVLTMAFAVGH	56
1Z98	73	GLLGIAWA <b>F</b> GGMIFVLVYCTAG	94
2B6O	40	HVLQVALA <b>F</b> GLALATLVQAVGH	61
2F2B	54	DWVAIGLA <b>F</b> GF AIAASIYALGN	75
OsSIP1;1		ALLVTVS <b>L</b> LSVLLFAFNLLCDA	
OsSIP2;1		ADAVKVAL <b>S</b> LVYMFFFAWLEGF	
ZmSIP1;1		ALLVTT <b>S</b> LSVLLFTFDLLCGA	
ZmSIP1;2		ALLVTVS <b>L</b> LSVLLFVFNILCDA	
ZmSIP2;1		AEAVKV <b>S</b> LSVYMFLFAWLEAA	
AtSIP1;1		PLVILT <b>S</b> LIFVYVSIFTVIF--	
AtSIP1;2		PLVIST <b>L</b> VVFSISIFTVIGNV	
AtSIP2;1		GEIVRY <b>L</b> FSIISMFI FAYLQQA	