

## Structure-based sequence alignment of TM4

Helix 4 PIP

1J4N	137	SGQGLGIEIIGTLQLVLCVLATT	159
1FX8	145	FVQAFVAVEMVITAILMGLILALT	167
1RC2	131	MLSALVVELVLSAGFLLVIHGAT	153
1Z98	161	KGTALGAEIIGTFVLVYTVFSAT	183
2B6O	127	VGQATIVEIFLTLQFVLCIFATY	149
2F2B	143	YWQAMLAEVVGTFLLMITIMGIA	165
OsPIP1;1		KGDGLGAEIVGTFILVYTVFSAT	
OsPIP1;2		KGDGLGAEIVGTFILVYTVFSAT	
OsPIP1;3		KGDGLGAEIVGTFVLVYTVFSAT	
OsPIP1;4		KGDGLGAEIVGTFILVYTVFSAT	
OsPIP1;5		KGDRLGAEIVGTFILVYTVFSAT	
OsPIP2;1		KGTGLAAEIIIGTFVLVYTVFSAT	
OsPIP2;2		KGTGLGAEIIGTFVLVYTVFSAT	
OsPIP2;3		KGTGLAAEIIIGTFVLVYTVFSAT	
OsPIP2;4		TGTGLAAEIIIGTFVLVYTVFSAT	
OsPIP2;5		KGTGLAAEIIIGTFVLVYTVFSAT	
OsPIP2;6		TGTALGAEIIGTFVLVYTVFSAT	
OsPIP2;7		AAGALGAEIVGTFILVYTVFSAT	
OsPIP2;8		AGAGVVAEMVGTFFVLVYTVFSAT	
ZmPIP1;1		KGDGLGAEIVGTFILVYTVFSAT	
ZmPIP1;2		KGDGLGAEIVGTFILVYTVFSAT	
ZmPIP1;3		KGDGLGAEIVGTFILVYTVFSAT	
ZmPIP1;4		KGDGLGAEIVGTFILVYTVFSAT	
ZmPIP1;5		KGDGLGAEIVGTFVLVYTVFSAT	
ZmPIP1;6		KGDGLGAEVVGTFFVLVYTVFSAT	
ZmPIP2;1		RGTGLGAEIIGTFVLVYTVFSAT	
ZmPIP2;2		RGAGLGAEIVGTFVLVYTVFSAT	
ZmPIP2;3		KGTGLAAEIIIGTFVLVYTVFSAT	
ZmPIP2;4		KGTGLAAEIIIGTFVLVYTVFSAT	
ZmPIP2;5		KGTGLAAEIIIGTFVLVYTVFSAT	
ZmPIP2;6		TGTGLAAEIIIGTFVLVYTVFSAT	
ZmPIP2;7		KGTALGAEIIGTFVLVYTVFSAT	
AtPIP1;1		KGSGLGAEIIGTFVLVYTVFSAT	
AtPIP1;2		KGSGLGAEIIGTFVLVYTVFSAT	
AtPIP1;3		KGSGLGAEIIGTFVLVYTVFSAT	
AtPIP1;4		KGSGLGAEIIGTFVLVYTVFSAT	
AtPIP1;5		KGSGLGAEIVGTFVLVYTVFSAT	
AtPIP2;1		TGTGLAAEIIIGTFVLVYTVFSAT	
AtPIP2;2		TGTGLAAEIIIGTFVLVYTVFSAT	
AtPIP2;3		TGTGLAAEIIIGTFVLVYTVFSAT	
AtPIP2;4		KGTGLGAEIIGTFVLVYTVFSAT	
AtPIP2;5		IGTGVAEIIIGTFVLVYTVFSAT	
AtPIP2;6		VGVGVGAEIIGTFVLVYTVFSAT	
AtPIP2;7		KGTALGAEIIGTFVLVYTVFSAT	
AtPIP2;8		TGTALGAEIIGTFVLVYTVFSAT	

Helix4 TIP

1J4N	137	SGQGLGIEIIGTLQLVLCVLATT	159
1FX8	145	FVQAFVEMVITAILMGLILALT	167
1RC2	131	MLSALVVELVLSAGFLLVIHGAT	153
1Z98	161	KGTALGAEIIGTFVLVYTVFSAT	183
2B6O	127	VGQATIVEIFLTLQFVLCIFATY	149
2F2B	143	YWQAMLAEVVGTFLLMITIMGIA	165
OsTIP1;1		VWEALVLEIVMTFGLVYTVYATA	
OsTIP1;2		AWNAVVFIEIVMTFGLVYTVYATA	
OsTIP2;1		ELEGVVMEIVITFALVYTVYATA	
OsTIP2;2		AFEGVVMEIIVTFGLVYTVYATA	
OsTIP2;3		EIEGMVMEIVITFALVYTVYATA	
OsTIP3;1		DWHAVLLEATMTFGLMYAYYATV	
OsTIP3;2		ERHALLLEVVMTFGLVYTVYATA	
OsTIP4;1		PMQGLVMEIILTFSLLFVYATI	
OsTIP4;2		PVQGVAAEAVFTFTLLLVICATI	
OsTIP4;3		AARAVAMEAVLTFSLLFVYATV	
OsTIP5;1		GFGAGILEGVLTFMVVYTVHVAG	
ZmTIP1;1		VWEALVLEIVMTFGLVYTVYATA	
ZmTIP1;2		AMNAVVLEMVMTFGLVYTVYATA	
ZmTIP2;1		ELEGVVFEVVITFALVYTVYATA	
ZmTIP2;2		ELEGVVFEIVITFALVYTVYATA	
ZmTIP2;3		EIEGVVMEIVITFALVYTVYATA	
ZmTIP3;1		DWHAVLLEAVMTFGLMYAYYATV	
ZmTIP4;1		PMQGLVMEVILTFSLLFVYAMI	
ZmTIP4;2		PMQGLVMEVILTFSLLFVYAMI	
ZmTIP4;3		PLQGVVAEAVFTFSLLFVIYATI	
ZmTIP4;4		ALRGVLMEAVLTFSLLFVYATV	
ZmTIP5;1		GFGGAVLEGVLTFLLVYTVHVVG	
AtTIP1;1		VLNAFVFEIVMTFGLVYTVYATA	
AtTIP1;2		SLNALVFEIVMTFGLVYTVYATA	
AtTIP1;3		PWNAVVFIEIVMTFGLVYTVYATA	
AtTIP2;1		SIEGVVMEIITFALVYTVYATA	
AtTIP2;2		AIEGVVMEIVVTFALVYTVYATA	
AtTIP2;3		AVEGVVMEIVVTFALVYTVYATA	
AtTIP3;1		AVNGLVLEIILTFGLVYVYVSTL	
AtTIP3;2		ELHGLLMEIILTFALVYVYVSTA	
AtTIP4;1		YTQGIWEIILTFSLLFVYATI	
AtTIP5;1		GFGASVLEGVLAFLVYTVFTAS	

Helix 4 NIP

1J4N	137	SGQGLGIEIIGTLQLVLCVLATT	159
1FX8	145	FVQAFVAVEMVITAILMGLILALT	167
1RC2	131	MLSALVVELVLSAGFLLVIHGAT	153
1Z98	161	KGTALGAEIIGTFVLVYTVFSAT	183
2B6O	127	VGQATIVEIFLTLQFVLCIFATY	149
2F2B	143	YWQAMLAEVVGTFLLMITIMGIA	165
OsNIP1;1		DVQSLVLEFIIITFYLMFVISGVA	
OsNIP1;2		MAQAAALEFVISFFLMFVVSVA	
OsNIP1;3		DVQSLAMEFIIITFYLMFVVSVA	
OsNIP1;4		HAQSLVIEFVITFYLMFVIMAVA	
OsNIP1;5		MAQAAALEFVISFFLMFVVSVA	
OsNIP2;1		HWHSLVVEVIVTFNMMFVTLAVA	
OsNIP2;2		HWHALVIEIVVTFNMMFVTCAVA	
OsNIP3;1		TAQAFFTEFIIITFNLLFVVTAVA	
OsNIP3;2		TVEAFFLEFVTTFVLLFIITALA	
OsNIP3;3		TVEAFFVEFIIITFLLFIITALA	
OsNIP3;4		VKELIAVAVGGTAMMNVLVAG--	
OsNIP3;5		AGEAFVVEVALTFVLSKELVAI-	
OsNIP4;1		TRLPFLMEFLASAVLMIVIATVA	
ZmNIP1;1		EVQSLVIEIITTFYLMFVISGVA	
ZmNIP2;1		HWHSLVIEIIVTFNMMFVTLAVA	
ZmNIP2;2		HWHALLIEIVVTFNMMFVTCAVA	
ZmNIP3;1		TAQAFFTEFIIISFNLLFVVTAVA	
AtNIP1;1		DLQAFVMEFIVTFYLMFVISGVA	
AtNIP1;2		NLQSFVIEFIIITFYLMFVISGVA	
AtNIP2;1		DLQAFVMEFIIITGFLMLVCAVT	
AtNIP3;1		NTTSFVMEFIATFNLMFVISAVA	
AtNIP4;1		PARALVAEIIISFLLMFVISGVA	
AtNIP4;2		SGQALVAEIIISFLLMFVISGVA	
AtNIP5;1		LGQAFALEFIIITFILLFVVTAVA	
AtNIP6;1		LSQAFALEFIIISFNLMFVVTAVA	
AtNIP7;1		CVSAFFVELIATSIVVFLASALH	

Helix 4 SIP

1J4N	137	SGQGLGIEIIGTLQLVLCVLATT	159
1FX8	145	FVQAFVAVEMVITAILMGLILALT	167
1RC2	131	MLSALVVELVLSAGFLLVIHGAT	153
1Z98	161	KGTALGAEIIGTFVLVYTVFSAT	183
2B6O	127	VGQATIVEIFLTLQFVLCIFATY	149
2F2B	143	YWQAMLAEVVGTFLLMITIMGIA	165
OsSIP1;1		LHTGAAAELVLTfVITLAVLWII	
OsSIP2;1		VHHGALAEGLATFMVVIVSVTLK	
ZmSIP1;1		PHTGALAEGVLTfVITLTVLWVI	
ZmSIP1;2		PHTGAGAELVLTfVITLAVLLII	
ZmSIP2;1		AHHGALAEGLATFMVVMVSVTLK	
AtSIP1;1		VHTGAIAETILSFGITFAVLLII	
AtSIP1;2		AHNGAISEVVLsFSVTFVLVLLII	
AtSIP2;1		IHHGALTEGILTFFIVLLSMGLT	