

**Supplementary Table S1.** Sequences of conservative motifs in CqTPS proteins.

Motif name	Sequence	Length (aa)
MOTIF1	GFFLHSPFPSSEIYRTLPRDEJLRALLNADLVGFHTFDYARHFLSCCSR	50
MOTIF2	PVMEYYTERTDGSTIELKESALVWNYKYADPDFGSLQAKELLDHLETVLA	50
MOTIF3	LSGAIRVNPWNITEVAEAIGKALNMPDEEKQLRHZKHFRYVSEHDVAEWA	50
MOTIF4	LTKLLEEFKCVPVFLPPELVKKFYHGYCKQILWPLFHYMLP	41
MOTIF5	FKGKKVILGVDDMDIFKGISLKJLAFEKLLEZNPDWRGKVVLVQIANPAR	50
MOTIF6	YPEDDYVWVHDYHLMVLPTFLRKNSRVK	29
MOTIF7	LDLKKPEVFACTVGQKPSKAKYYLEDSEVVSLEGLAEAS	41
MOTIF8	CALVTAVRDGMNLVPYEYVAC	21
MOTIF9	NEPVEVVRGSNIVEVKPQGVTKGLVIERI	29
MOTIF10	LCNDPKNTIFIVSGSRRDDLSEWFSPYE	28

**Supplementary Table S2.** Sequences of conservative motifs in CqTPP proteins.

Motif name	Sequence	Length (aa)
MOTIF1	AFMSDDMRAAVREVAKYFPTAIISGRSRDKVYDFVKLTELYYAGSHGMDI	50
MOTIF2	HGRKVLEIRPTIDWDKGGKALEFLLESLGLANSDDVLPYIGDDKTDEDAF	50
MOTIF3	JFQPASEFLPMIDEVYKSLVEKTKEIKGAKVEDNKFCLSVHFRNVEEKNW	50
MOTIF4	AYSSWLLKHPSALDSFEZITKAAKGKKIVMFLDYDGTLSPIVDDPDR	41
MOTIF5	LRKRNQGYGILVSKIPKETNASYSLQDPSEVMEFLZRLVKW	50
MOTIF6	IPKKKTGKLDDVKSNAWLDAMKASSPPK	29
MOTIF7	EVKEVLKEYPRLKLT	41
MOTIF8	MTRQTVVVADEPTPMKSRVAIHSSLPPYS	21
MOTIF9	GHKVFDGNPNCNKLTDKQGKE	29
MOTIF10	MAPLQPLRIRDWKYHAKAVD	28