

Table S1 Primers for cloning *P. xylostella* protein serine/threonine phosphatases genes

Gene	Primer name	Sequence(5'-3')
PxPP1	P1-3'RACE-1	CCTCGGAGATTATGTGGACC
	P1-3'RACE-2	GCCTACCCGTGGCGGCGATA
	P1-5'RACE-1	CTCTATTTTCGGTCAACTGTA
	P1-5'RACE-2	TACCAGGCTTTTCGCCCCGT
	P1-ORF-F	CATATGGCAGACAGAGACACAGATG
	P1-ORF-R	CTCGAGTTACGGCTTCAGGATCTGG
PxPP2A	P2-CR-F	GCCCGAGACCAACTACCTGttyatggngga
	P2-CR-R	CGTTGCCGCACCGGtarcartartt
	P2-3'RACE-1	GCTGTGGAGCGACCCTGATGATAG
	P2-3'RACE-2	TACAACTGGTGCCACGACAGAAAT
	P2-5'RACE-1	CGGTTCTGTAGAGCCTCAGCAAGTTG
	P2-5'RACE-2	TATGCCCAAGATGCTGCTCACGGACG
	P2-ORF-F	CATATGGAAGACAAGGCGTCGCTAAAGG
	P2-ORF-R	AAGCTTCTACATGAAGTAATCCGGCGTCCGC
PxPP4	P4-CR-F	CGAGGTGAAGGCCCTGtgygcnaargc
	P4-CR-R	GGGGCGGCCTCGaadatngtraa
	P4-3'RACE-1	GTGGAGACTTTCTGTTGCTACTGGC
	P4-3'RACE-2	TCTTTGACTACCTCTCGCTGTCCGGCT
	P4-5'RACE-1	ACTCGTCGTAGAACCCGTAT
	P4-5'RACE-2	AACGAATAGTTGGTCTCGGG
	P4-ORF-F	CGGAATTCATGTCAGATACGAGTGATTTGGAC
	P4-ORF-R	CCCAAGCTTTTATAAGAAGTAGTCCGCTTGAGG
PxPP5	P5-CR-F	CACATGTCCCTGGGCAAGtwyaaarytngc
	P5-CR-R	GGCGGAGAACACGGTGatrcayttnc
	P5-3'RACE-1	TCAGTGTGGAGTGTATCTTTGTGC
	P5-3'RACE-2	CCAACTTCCTCGCCCGCAACCGCC
	P5-5'RACE-1	CCGCAGACTGTGAACTTGGC
	P5-5'RACE-2	TTGGACTTGCCAGGGGGACT
	P5-ORF-F	CATATGcaccaccaccaccacGCAAGTAACGATGAAATTACC
P5-ORF-R	AAGCTTCTACTGACAGAGCATGCTGAGGAATG	
PxPP6	P6-ORF-F	CATATGACCGACGTAGATAAATGGA
	P6-ORF-R	AAGCTTTTAAAGAAAATAAGGGGTTGTGT

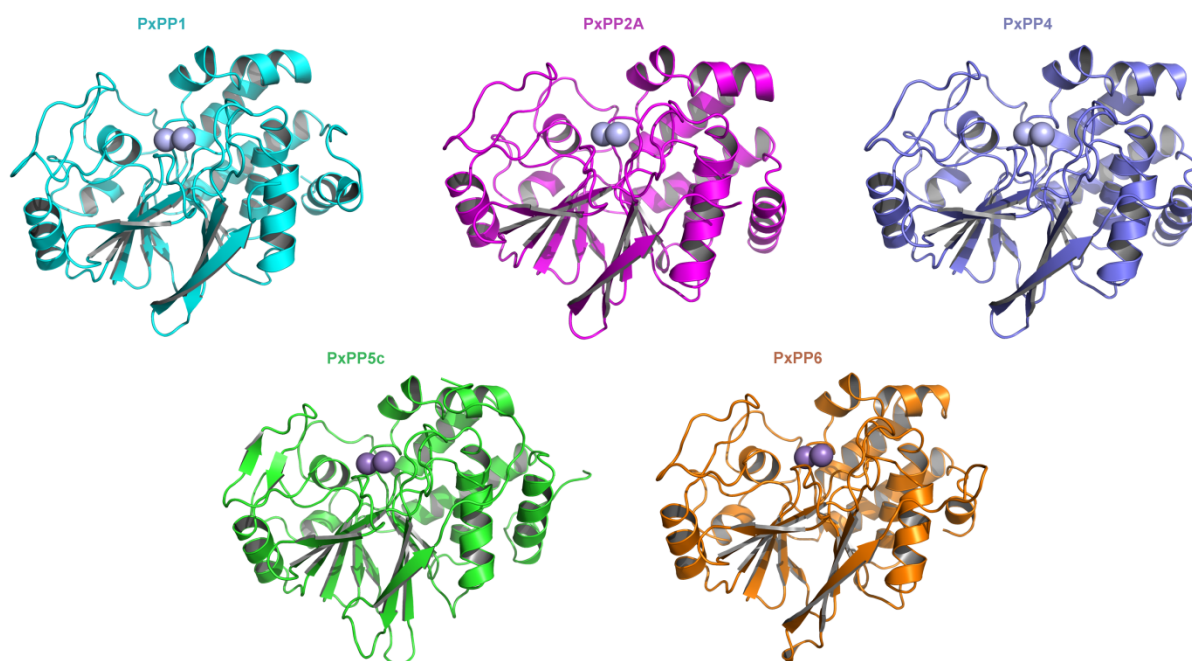


Fig. S1 The cartoon representation of the 3D models of PP1 (Cyan), PP2A (Magenta), PP4 (Slate), PP5 (Green), and PP6 (Orange) from *P. xylostella*. Two manganese ions are shown as slate balls.

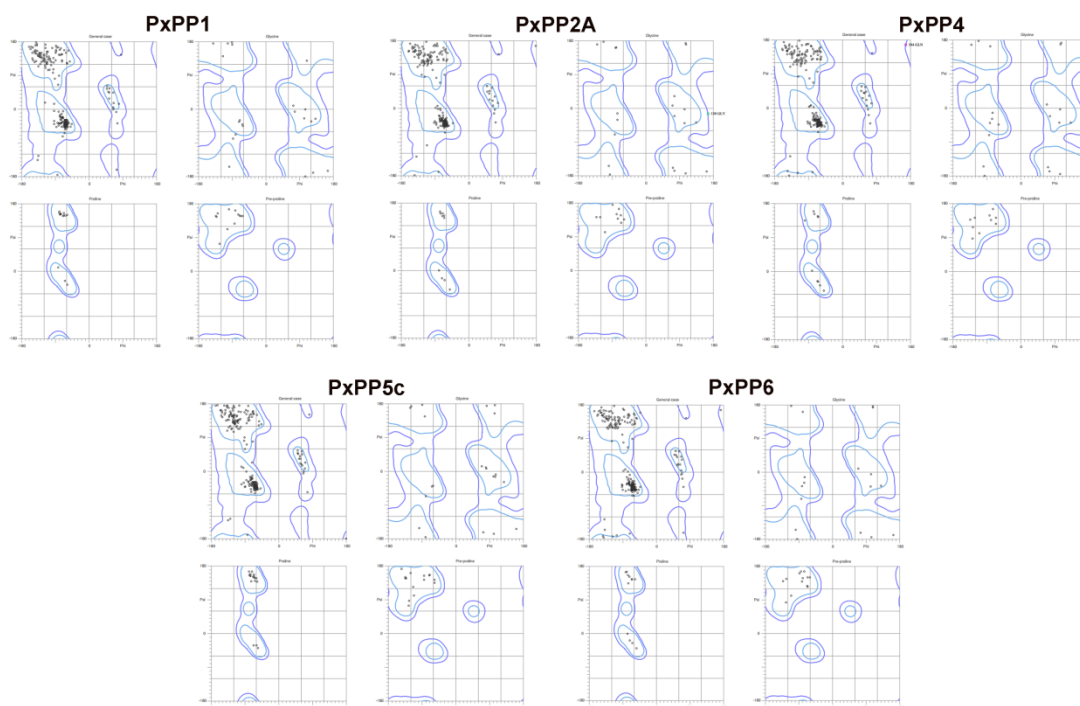


Fig. S2 Ramachandran Plots of *P_xPP1*, *P_xPP2A*, *P_xPP4*, *P_xPP5*, and *P_xPP6* 3D models.

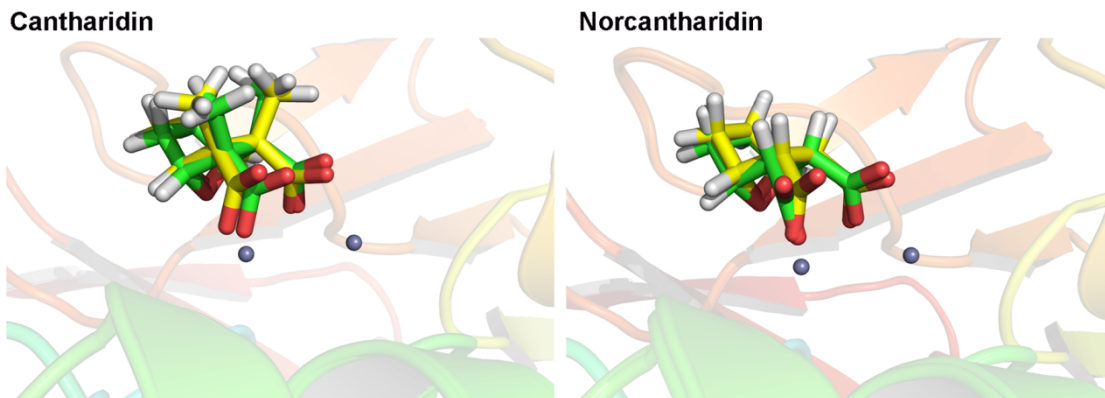


Fig. S3 The superimposition of the conformations of cantharidin and norcantharidin in *PxPP5* 3D model with those in the 3H63 and 3H61, respectively.

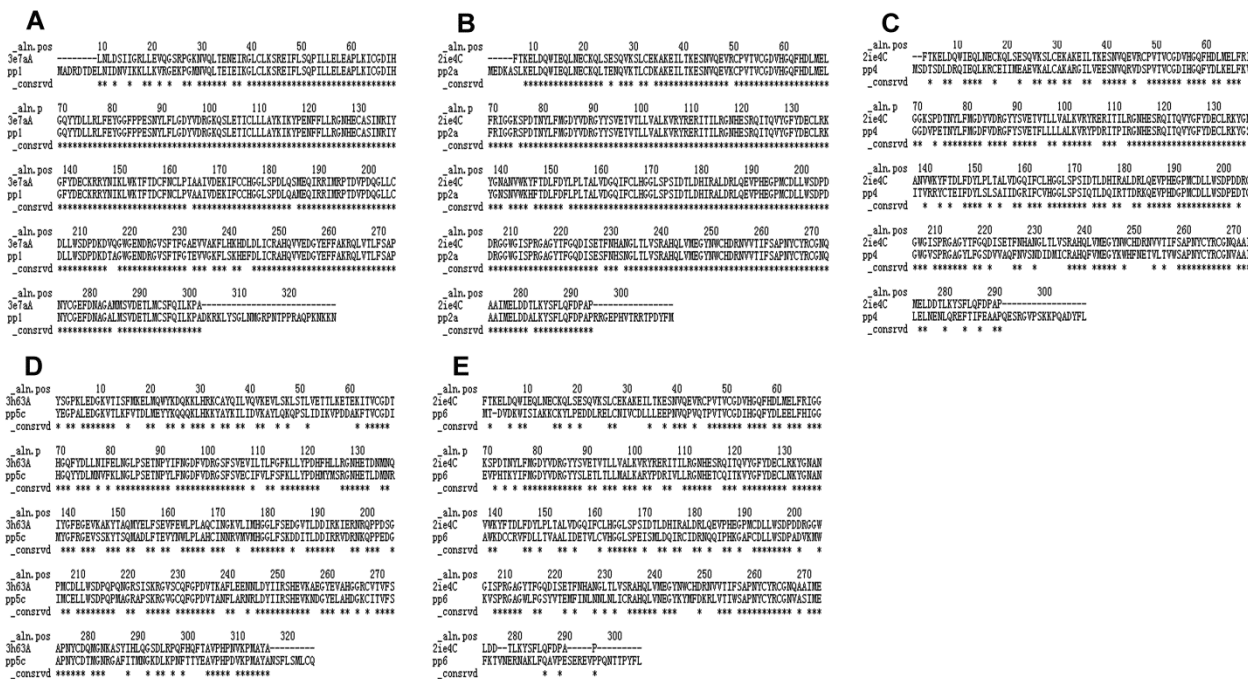


Fig. S4 Sequence alignment of *PxPSPs* and templates. (A) *PxPP1* and 3E7A, (B) *PxPP2A* and 2IE4, (C) *PxPP4* and 2IE4, (D) *PxPP5c* and 3H63, (E) *PxPP6* and 2IE4.