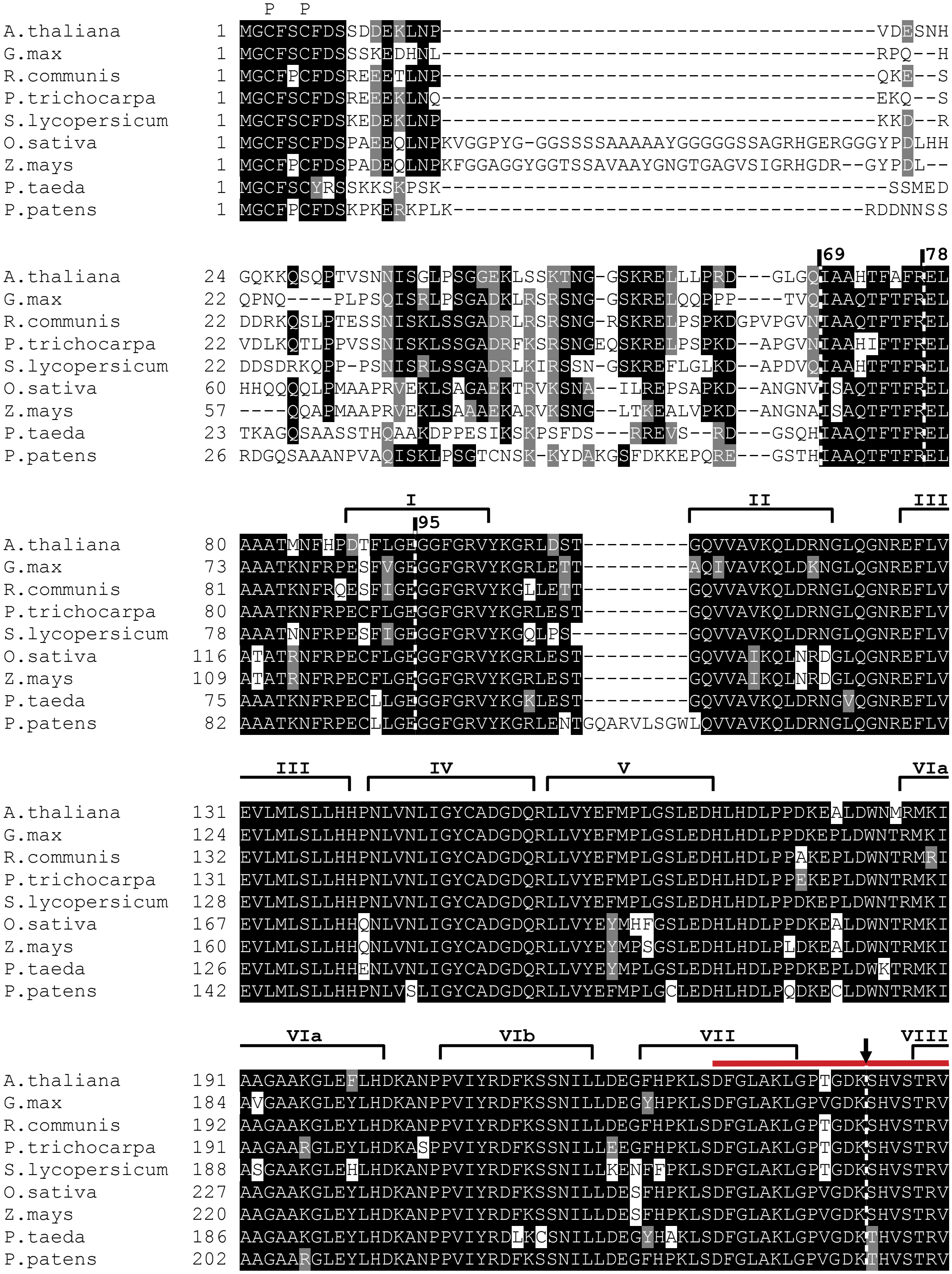
Figure S3



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                       P  P
A.thaliana         1 MGCFSCFDSSDDEKLNP-------------------------------------VDESNH
G.max              1 MGCFSCFDSSSKEDHNL-------------------------------------RPQ--H
R.communis         1 MGCFPCFDSREEETLNP-------------------------------------QKE--S
P.trichocarpa      1 MGCFSCFDSREEEKLNQ-------------------------------------EKQ--S
S.lycopersicum     1 MGCFSCFDSKEDEKLNP-------------------------------------KKD--R
O.sativa           1 MGCFSCFDSPAEEQLNPKVGGPYG-GGSSSSAAAAAYGGGGGSSAGRHGERGGGYPDLHH
Z.mays             1 MGCFPCFDSPADEQLNPKFGGAGGYGGTSSAVAAYGNGTGAGVSIGRHGDR--GYPDL--
P.taeda            1 MGCFSCYRSSKKSKPSK--------------------------------------SSMED
P.patens           1 MGCFPCFDSKPKERKPLK-----------------------------------RDDNNSS

                                                                      69      78
A.thaliana        24 GQKKQSQPTVSNNISGLPSGGEKLSSKTNG-GSKRELLLPRD---GLGQIAAHTFAFREL
G.max             22 QPNQ----PLPSQISRLPSGADKLRSRSNG-GSKRELQQPPP----TVQIAAQTFTFREL
R.communis        22 DDRKQSLPTESSNISKLSSGADRLRSRSNG-RSKRELPSPKDGPVPGVNIAAQTFTFREL
P.trichocarpa     22 VDLKQTLPPVSSNISKLSSGADRFKSRSNGEQSKRELPSPKD--APGVNIAAHIFTFREL
S.lycopersicum    22 DDSDRKQPP-PSNISRLSSGADRLKIRSSN-GSKREFLGLKD--APDVQIAAHTFTFREL
O.sativa          60 HHQQQQLPMAAPRVEKLSAGAEKTRVKSNA--ILREPSAPKD--ANGNVISAQTFTFREL
Z.mays            57 ----QQAPMAAPRVEKLSAAAEKARVKSNG--LTKEALVPKD--ANGNAISAQTFTFREL
P.taeda           23 TKAGQSAASSTHQAAKDPPESIKSKPSFDS---RREVS--RD---GSQHIAAQTFTFREL
P.patens          26 RDGQSAAANPVAQISKLPSGTCNSK-KYDAKGSFDKKEPQRE---GSTHIAAQTFTFREL

                                    I                            II           III
                                   95
A.thaliana        80 AAATMNFHPDTFLGEGGFGRVYKGRLDST---------GQVVAVKQLDRNGLQGNREFLV
G.max             73 AAATKNFRPESFVGEGGFGRVYKGRLETT---------AQIVAVKQLDKNGLQGNREFLV
R.communis        81 AAATKNFRQESFIGEGGFGRVYKGLLETT---------GQVVAVKQLDRNGLQGNREFLV
P.trichocarpa     80 AAATKNFRPECFLGEGGFGRVYKGRLEST---------GQVVAVKQLDRNGLQGNREFLV
S.lycopersicum    78 AAATNNFRPESFIGEGGFGRVYKGQLPS----------GQVVAVKQLDRNGLQGNREFLV
O.sativa         116 ATATRNFRPECFLGEGGFGRVYKGRLEST---------GQVVAIKQLNRDGLQGNREFLV
Z.mays           109 ATATRNFRPECFLGEGGFGRVYKGRLEST---------GQVVAIKQLNRDGLQGNREFLV
P.taeda           75 AAATKNFRPECLLGEGGFGRVYKGKLEST---------GQVVAVKQLDRNGVQGNREFLV
P.patens          82 AAATKNFRPECLLGEGGFGRVYKGRLENTGQARVLSGWLQVVAVKQLDRNGLQGNREFLV

                         III          IV             V                       VIa
A.thaliana       131 EVLMLSLLHHPNLVNLIGYCADGDQRLLVYEFMPLGSLEDHLHDLPPDKEALDWNMRMKI
G.max            124 EVLMLSLLHHPNLVNLIGYCADGDQRLLVYEFMPLGSLEDHLHDLPPDKEPLDWNTRMKI
R.communis       132 EVLMLSLLHHPNLVNLIGYCADGDQRLLVYEFMPLGSLEDHLHDLPPAKEPLDWNTRMRI
P.trichocarpa    131 EVLMLSLLHHPNLVNLIGYCADGDQRLLVYEFMPLGSLEDHLHDLPPEKEPLDWNTRMKI
S.lycopersicum   128 EVLMLSLLHHPNLVNLIGYCADGDQRLLVYEFMPLGSLEDHLHDLPPDKEPLDWNTRMKI
O.sativa         167 EVLMLSLLHHQNLVNLIGYCADGDQRLLVYEYMHFGSLEDHLHDLPPDKEALDWNTRMKI
Z.mays           160 EVLMLSLLHHQNLVNLIGYCADGDQRLLVYEYMPSGSLEDHLHDLPLDKEALDWNTRMKI
P.taeda          126 EVLMLSLLHHENLVNLIGYCADGDQRLLVYEYMPLGSLEDHLHDLPPDKEPLDWKTRMKI
P.patens         142 EVLMLSLLHHPNLVSLIGYCADGDQRLLVYEFMPLGCLEDHLHDLPQDKECLDWNTRMKI

                          VIa               VIb              VII             VIII
                                                                         ↓
A.thaliana       191 AAGAAKGLEFLHDKANPPVIYRDFKSSNILLDEGFHPKLSDFGLAKLGPTGDKSHVSTRV
G.max            184 AVGAAKGLEYLHDKANPPVIYRDFKSSNILLDEGYHPKLSDFGLAKLGPVGDKSHVSTRV
R.communis       192 AAGAAKGLEYLHDKANPPVIYRDFKSSNILLDEGFHPKLSDFGLAKLGPTGDKSHVSTRV
P.trichocarpa    191 AAGAARGLEYLHDKASPPVIYRDFKSSNILLEEGFHPKLSDFGLAKLGPTGDKSHVSTRV
S.lycopersicum   188 ASGAAKGLEHLHDKANPPVIYRDFKSSNILLKENFFPKLSDFGLAKLGPTGDKSHVSTRV
O.sativa         227 AAGAAKGLEYLHDKANPPVIYRDFKSSNILLDESFHPKLSDFGLAKLGPVGDKSHVSTRV
Z.mays           220 AAGAAKGLEYLHDKANPPVIYRDFKSSNILLDESFHPKLSDFGLAKLGPVGDKSHVSTRV
P.taeda          186 AAGAAKGLEYLHDKANPPVIYRDLKCSNILLDEGYHAKLSDFGLAKLGPVGDKTHVSTRV
P.patens         202 AAGAARGLEYLHDKANPPVIYRDFKSSNILLDEGFHPKLSDFGLAKLGPVGDKTHVSTRV
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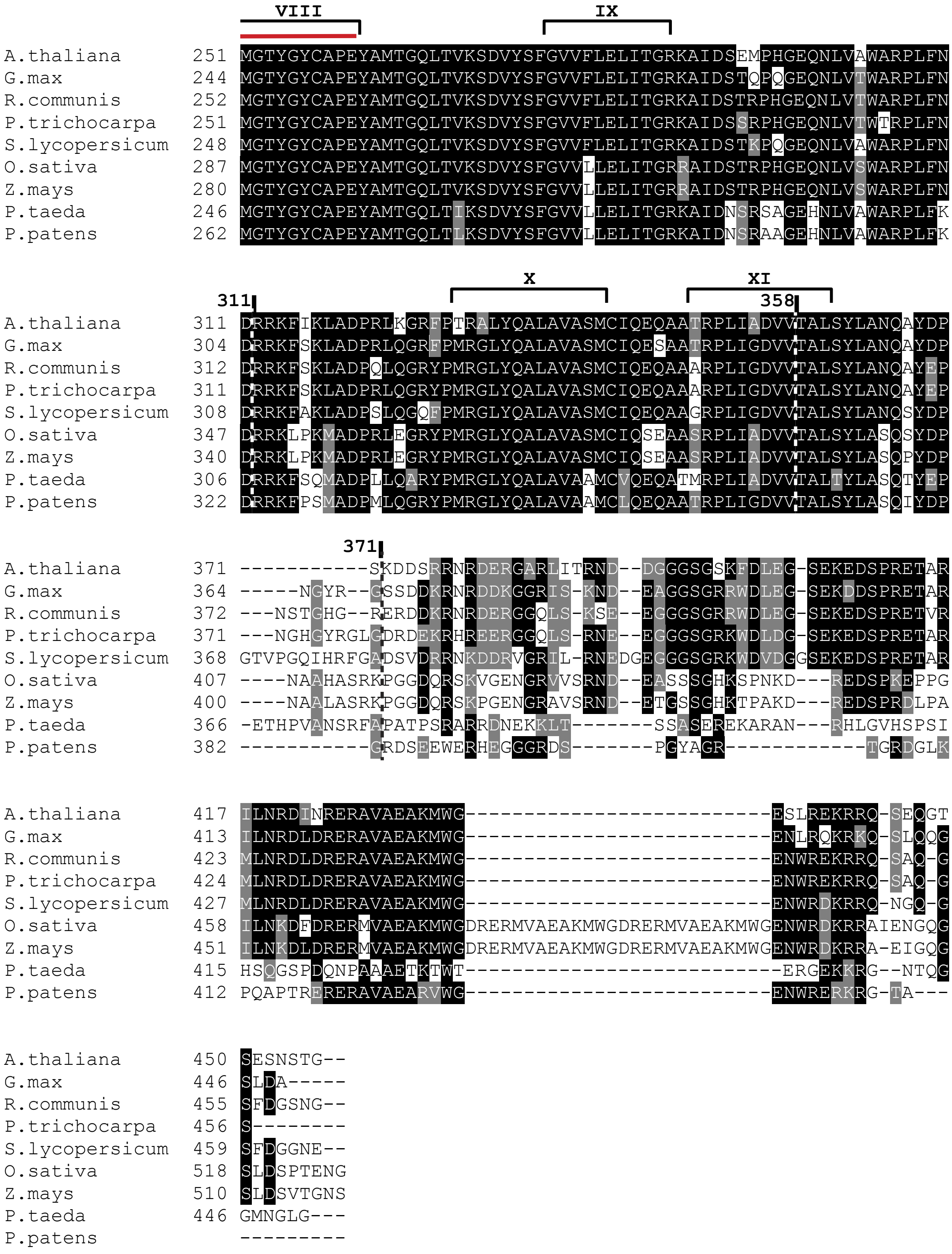

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A.thaliana       251 MGTYGYCAPEYAMTGQLTVKSDVYSFGVVFLELITGRKAIDSEMPHGEQNLVAWARPLFN
G.max            244 MGTYGYCAPEYAMTGQLTVKSDVYSFGVVFLELITGRKAIDSTQPQGEQNLVTWARPLFN
R.communis       252 MGTYGYCAPEYAMTGQLTVKSDVYSFGVVFLELITGRKAIDSTRPHGEQNLVTWARPLFN
P.trichocarpa    251 MGTYGYCAPEYAMTGQLTVKSDVYSFGVVFLELITGRKAIDSSRPHGEQNLVTWTRPLFN
S.lycopersicum   248 MGTYGYCAPEYAMTGQLTVKSDVYSFGVVFLELITGRKAIDSTKPQGEQNLVAWARPLFN
O.sativa         287 MGTYGYCAPEYAMTGQLTVKSDVYSFGVVLLELITGRRAIDSTRPHGEQNLVSWARPLFN
Z.mays           280 MGTYGYCAPEYAMTGQLTVKSDVYSFGVVLLELITGRRAIDSTRPHGEQNLVSWARPLFN
P.taeda          246 MGTYGYCAPEYAMTGQLTIKSDVYSFGVVLLELITGRKAIDNSRSAGEHNLVAWARPLFK
P.patens         262 MGTYGYCAPEYAMTGQLTLKSDVYSFGVVLLELITGRKAIDNSRAAGEHNLVAWARPLFK

A.thaliana       311 DRRKFIKLADPRLKGRFPTRALYQALAVASMCIQEQAATRPLIADVVTALSYLANQAYDP
G.max            304 DRRKFSKLADPRLQGRFPMRGLYQALAVASMCIQESAATRPLIGDVVTALSYLANQAYDP
R.communis       312 DRRKFSKLADPQLQGRYPMRGLYQALAVASMCIQEQAAARPLIGDVVTALSYLANQAYEP
P.trichocarpa    311 DRRKFSKLADPRLQGRYPMRGLYQALAVASMCIQEQAAARPLIGDVVTALSYLANQAYEP
S.lycopersicum   308 DRRKFAKLADPSLQGQFPMRGLYQALAVASMCIQEQAAGRPLIGDVVTALSYLANQSYDP
O.sativa         347 DRRKLPKMADPRLEGRYPMRGLYQALAVASMCIQSEAASRPLIADVVTALSYLASQSYDP
Z.mays           340 DRRKLPKMADPRLEGRYPMRGLYQALAVASMCIQSEAASRPLIADVVTALSYLASQPYDP
P.taeda          306 DRRKFSQMADPLLQARYPMRGLYQALAVAAMCVQEQATMRPLIADVVTALTYLASQTYEP
P.patens         322 DRRKFPSMADPMLQGRYPMRGLYQALAVAAMCLQEQAATRPLIGDVVTALSYLASQIYDP

A.thaliana       371 -----------SKDDSRRNRDERGARLITRND--DGGGSGSKFDLEG-SEKEDSPRETAR
G.max            364 -----NGYR--GSSDDKRNRDDKGGRIS-KND--EAGGSGRRWDLEG-SEKDDSPRETAR
R.communis       372 ---NSTGHG--RERDDKRNRDERGGQLS-KSE--EGGGSGRRWDLEG-SEKEDSPRETVR
P.trichocarpa    371 ---NGHGYRGLGDRDEKRHREERGGQLS-RNE--EGGGSGRKWDLDG-SEKEDSPRETAR
S.lycopersicum   368 GTVPGQIHRFGADSVDRRNKDDRVGRIL-RNEDGEGGGSGRKWDVDGGSEKEDSPRETAR
O.sativa         407 ----NAAHASRKPGGDQRSKVGENGRVVSRND--EASSSGHKSPNKD---REDSPKEPPG
Z.mays           400 ----NAALASRKPGGDQRSKPGENGRAVSRND--ETGSSGHKTPAKD---REDSPRDLPA
P.taeda          366 -ETHPVANSRFAPATPSRARRDNEKKLT-------SSASEREKARAN---RHLGVHSPSI
P.patens         382 -----------GRDSEEWERHEGGGRDS-------PGYAGR-----------TGRDGLK

A.thaliana       417 ILNRDINRERAVAEAKMWG---------------------------ESLREKRRQ-SEQGT
G.max            413 ILNRDLDRERAVAEAKMWG---------------------------ENLRQKRKQ-SLQQG
R.communis       423 MLNRDLDRERAVAEAKMWG---------------------------ENWREKRRQ-SAQ-G
P.trichocarpa    424 MLNRDLDRERAVAEAKMWG---------------------------ENWREKRRQ-SAQ-G
S.lycopersicum   427 MLNRDLDRERAVAEAKMWG---------------------------ENWRDKRRQ-NGQ-G
O.sativa         458 ILNKDFDRERMVAEAKMWGDRERMVAEAKMWGDRERMVAEAKMWGENWRDKRRAIENGQG
Z.mays           451 ILNKDLDRERMVAEAKMWGDRERMVAEAKMWGDRERMVAEAKMWGENWRDKRRA-EIGQG
P.taeda          415 HSQGSPDQNPAAAETKTWT----------------------------ERGEKKRG--NTQG
P.patens         412 PQAPTREREERAVAEARVWG---------------------------ENWRERKRG-TA---

A.thaliana       450 SESNSTG--
G.max            446 SLDA-----
R.communis       455 SFDGSNG--
P.trichocarpa    456 S--------
S.lycopersicum   459 SFDGGNE--
O.sativa         518 SLDSPTENG
Z.mays           510 SLDSVTGNS
P.taeda          446 GMNGLG---
P.patens             ---------
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Figure S3. Alignment of PBS1 Orthologues. Amino acid sequences were aligned using ClustalW2, with default parameters selected. The alignment output was converted to a visual representation using Boxshade 3.21 using the default parameters. Conserved protein kinase domains of PBS1 are indicated with brackets above the alignment. Potential palmitoylation (P) sites are indicated above the alignment. The position of the N- and C-terminal truncations of PBS1 are indicated above the alignment with a vertical line and the position of the terminal amino acid. The activation segment is indicated by the red bar and the site of cleavage by AvrPphB is indicated by a vertical arrow within the red bar.