

Group I

Group IA

GmGAGA-BP	NGIDMDISSIPIPVCSCTGAPQQCYRWGSGGWQSA	ACCTTGMSVYPLPMSTKRRGAR	IAGRKM	SIGAFKKVLEKLA	AEG-YNFSNP	IDLRTY	WAKHGTN	KFVTIR
PtBPC8	NGINMDISVPIPVCSCTGNPQQCYRWGCGGWQSA	ACCTTCISVYPLPMSTKRRGAR	IAGRKM	SLGAFKKVLEKLA	EG-YDFSNP	IDLRTH	WAKHGTN	KFVTIR
PtBPC9	NGINMDISVPIPVCSCTGNPQQCYRWGCGGWQSA	ACCTTCISVYPLPMSTKRRGAR	IAGRKM	SLGAFKKVLEKLA	EG-YDFSNP	IDLRTH	WAKHGTN	KFVTIR
PtBPC10	NGINMDMSVVPVCSCTGNAQQCYRWGCGGWQSA	ACCTTCISMYPLPMSTKRRGAR	IAGRKM	SSGAFKKVLEKLA	EG-YDFSNP	IDLRTH	WAKHGTN	KFVTIR
PtBPC11	NGISMDISLPIPVCSCTGTPQQCYRWGCGGWQSA	ACCTTCISVHPLPMSTKRRGAR	IAGRKM	SLGAFKKVLEKLA	EG-YDFSNA	IDLRTH	WAKHGTN	KFVTIR
VvBBR/BPC2	NGIDMDISGIPIPVCSCTGAPQQCYRWGSGGWQSA	ACCTTGMSIYPLPMSTKRRGAR	IAGRKM	SLGAFKKVLEKLA	AEG-YNFSNP	IDLRTH	WAKHGTN	KFVTIR
LjBBR/BPC1	NGIDMDISSIPIPVCSCTGAPQQCYRWGSGGWQSA	ACCTTGMSMYPLPMSTKRRGAR	IAGRKM	SIGAFKKVLEKLA	AEG-YNFSNP	IDLKTY	WAKHGTN	KFVTIR

Group IB

AtBPC2	NGVSMDISGLPVPVCSCTGAPQQCYRWGCGGWQSA	ACCTTNISMHPLPMSTKRRGAR	ISGRKM	SQGAFFKVLEKL	ASDG-FNFGNP	IDLKSH	WARHGTN	KFVTIR
AtBPC3	NGVSMDISGLPVPVCSCTGMPQQCYRWGCGGWQSA	ACCTTNVMSYPLPVNTKRRGAR	IAGRKM	SQGAFFKVLEKL	SSDG-FDFSNP	IDLKSH	WAKHGTN	KFVTIR
AtBPC1	NGVSMDISGLPVPVCSCTGTPQQCYRWGCGGWQSA	ACCTTNISVYPLPMSTKRRGAR	ISGRKM	SQGAFFKVLEKL	STEG-YSFNA	IDLKSH	WARHGTN	KFVTIR
LotuS_2	NGIDMDISGLPVPVCSCTGSPQQCYRWGCGGWQSA	ACCTTNVSIYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	AEG-YNFANP	IDLRTH	WARHGTN	KFVTIR
PtBPC1	NGIDMDISGIPITVCSCTGTPQQCYRWGCGGWQSA	ACCTTNVSIYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	EG-YNFANP	IDLRTY	WAKHGTN	KFVTIR
PtBPC2	NGIDMDISGIPIPVCSCTGIPQQCYRWGCGGWQSA	ACCTTNVMSYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	AEG-YNFANP	IDLRTH	WARHGTN	KFVTIR
SlBBR/BPC5	NGINMDISVPIPIVCSCTGAAQQCYRWGCGGWQSA	ACCTTNLSSYPLPMNVRKRGSR	IAGRKM	SLGAFKKVLEKLA	EG-YNFSNP	IDLKPH	WARHGTN	KFVTIR
AaBBR/BPC1	NGIDMDISGIPIPVCSCTGSPQQCYRWGAGGWQSA	ACCTTISMYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	EG-YNFANP	IDLRTY	WAKHGTN	KFVTIR
AaBBR/BPC2	NGIDMDISGIPIPVCSCTGVQQCYRWGSGGWQSA	ACCTTISMYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	ES-YNFANA	IDLRH	WAKHGTN	KFVTIR
VvBPC1-like	NGIDMDISGIPIPVCSCTGNPQQCYRWGCGGWQSA	ACCTTISMYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	AEG-YNFANP	IDLRH	WAKHGTN	KFVTIR
NtBBR/BPC1	NGIDMDISGIPIPVCSCTGAPQQCYRWGCGGWQSA	ACCTTISMYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	AEG-YSFANP	IDLRTH	WAKHGTN	KFVTIR
StBBR/BPC1	NGIDMDISVPIPVCSCTGSPQQCYRWGCGGWQSA	ACCTTISMYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	AEG-YNFANP	IDLRTH	WAKHGTN	KFVTIR
SlBBR/BPC1	NGIDMDISVPIPVCSCTGSPQQCYRWGCGGWQSA	ACCTTISMYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	AEG-YNFANP	IDLRTH	WAKHGTN	KFVTIR

Group IC

OSBBR-likeB	NGIDLDLRIPTPIVCSCTGAPQQCYRWGAGGWQSA	ACCTTISTYPLPMSTKRRGAR	IAGRKM	SHGAFKKVLEKLA	EG-YNLNNP	IDLKTF	WAKHGTN	KFVTIR
OSBBR-likeC	NGIDLDLRIPTRIVCSCTGAPQQCYRWGAGGWQSA	ACCTTIVSTYPLPMSTKRRGAR	IAGRKM	SHGAFKKVLEKLA	EG-YNLNNP	IDLKTF	WAKHGTN	KFVTIR
HvBBR	NGIDFDISRIPTFVCSCTGAPQQCYRWGAGGWQSA	ACCTTISTYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	EG-YNLNNP	IDLKTF	WAKHGTN	KFVTIR
Elaeis_1	NGIDLDISGIPITPIVCSCTGTPQQCYRWGVGWQSA	ACCTTISMYPLPMSTKRRGAR	IAGRKM	SQGAFFKVLEKLA	EG-YNLSNP	IDLKTY	WAKHGTN	KFVTIR

Group ID

PinTaeBPC1	NGIFLIFQLCLFLFALALEWLNNTGGNGGWQSA	ACCTTISMYPLPMNPNRRGAR	VAGRKM	SGGAFFKLLERL	GAEG-FNLNYP	IDLKSY	WAKHGTN	KFVTIR
PinSitBPC1	NGIVFDISAMPIPVCSCTGVAAQQCYRWGNGGWQSA	ACCTTISMYPLPMNPNRRGAR	VAGRKM	SGGAFFKLLERL	GAEG-YNLNYP	IDLKSY	WAKHGTN	KFVTIR
Pin_C0362400	LMEFFDISTMPIPVCSCTGVAAQQCYRWGNGGWQSA	ACCTTISMYPLPMNPNRRGAR	VAGRKM	SGGAFFKLLERL	GAEG-FNLNYP	IDLKSY	WAKHGTN	KFVTIR

Group III

AtBPC7	DISSFDTSGVPPPVCSCTGVSRVCYKWMGGWQSA	SCCTTISISTYPLPMSTTR	PGARL	AGRKM	NGAYVKLLAR	LAD	EG-YDLSHP	LDLKNH	WARHGTN	KFVTIK
PtBPC7	GKINFDPGVSPPFCSCTGMPRVCCYKWAGGWQSA	SCCTDSISEHPLMSSTR	PGVRMA	GRKM	NGAYVKLLKL	LSAES-YNLSHP	LDLMDKNH	WARHGTN	KFVTIK	
SlBBR/BPC3	GRASADFSGLPQPFCSCTGVSRRCYK-CGGGWQSA	SCCTTSLSEYPLPFPNPSR	PGNRKA	GRKM	NGAYNKL	LCTLAT	EG-HDLSNP	VDLKD	HNWAKHGSN	KFITLK

Group II

Group IIA

AtBPC6	NQVVYDETTPMPVCSCTGVLRQCYKWNGGWQSA	SCCTTTL	SMYPLPALPNKRHAR	VGRKM	SGSAFNKL	LSRLAAEG	HHDLSNP	VDLKD	HNWAKHGTN	RYITIK
PtBPC6	NQVAFDETTPMPVCSCTGVPRQCYKWNGGWQSA	SCCTTTL	SMYPLPAVPNKRHAR	VGRKM	SGSAFSKL	LSRLAAEG-QDLSNP	VDLKD	HNWAKHGTN	RYITIK	
VvBPC6-like	NQVTFDESTMPAPVCSCTGVLRQCYKWNGGWQSA	SCCTTTL	SMYPLPAVPNKRHAR	VGRKM	SGSAFNKL	LSRLAAEG-HDLSI	PVDLKD	HNWAKHGTN	RYITIK	
NtBBR/BPC3	NQVSFDESTMPVCSCTGDLRPSYKWNGGWQSA	SCCTNNLS	SMYPLPMLPNKRHAR	IGRKM	SGSAFTKL	LSRLAAEG-HDLSNP	VDLKD	HNWAKHGTN	RYITIK	
StBBR/BPC3	NQVAFDETTPMPVCSCTGVLRPCYKWNGGWQSA	SCCTTNLS	SMYPLPAVPNKRHAR	IGRKM	SGSAFTKL	LSRLAAEG-HDLSNP	VDLKD	HNWAKHGTN	RYITIK	
SlBBR/BPC4	NQVAFDETTPMPVCSCTGVLRPCYKWNGGWQSA	SCCTTNLS	SMYPLPAVPNKRHAR	IGRKM	SGSAFTKL	LSRLAAEG-HDLSNP	VDLKD	HNWAKHGTN	RYITIK	

Group IIB

AtBPC4	NLVTFDETTPVPMCSCTGSTRCYKWNGGWQSA	SCCTTTL	SQYPLPQMPNKRHSRM	GGRKM	GNVFSRLLSRL	SAEG-YDLS	SCPVDLKD	YWARHGTN	RYITIK	
AtBPC5	VLVTFDEMTMPVPMCSCTGTARQCYKWNGGWQSA	SCCTTTL	SEYPLPQMPNKRHSRV	GGRKM	GSVFSRLLSRL	AGEG-HELSSP	VDLKNY	WARHGTN	RYITIK	
PtBPC3	NLINFDETMTAPVCSCTGVPRQCYKWGSGGWQSA	ACCTTMS	SYPLQLPNKRRAVR	GGRKM	GNVFTRLLSRL	AAEG-HDLSI	PDLKD	YWARHGTN	RYITIK	
PtBPC4	NLINFDETTPAPVCSCTGVPRQCYKWGSGGWQSA	ACCTTMS	SYPLPQMPNKRHAR	IGRKM	GNVFTRLLSRL	AAEG-HDLAI	PDLKD	YWARHGTN	RYITIK	
VvBPC4-like	NLVTFDESTMPVCSCTGVPRQCYKWNGGWQSA	SCCTTTL	SSYPLPQMPNKRHARM	GGRKM	GSVFTRLLSRL	AAEG-HDLSM	PDLKD	YWARHGTN	RYITIK	
StBBR/BPC4	DQIQFDESTMPIPVCSCTGTGIPRCYKWGSGGWQSA	SCCTTYL	SEYPLQLPNKRHAR	LGRKM	GSVFSRLLTRFA	VAAD-RDLSM	PDLKTY	WAKHGTN	RYITIK	
HaBBR/BPC1	DQISFDESTMPIPIVCSCTGVARQCYKWGSGGWQSA	SCCTTTL	SVYPLPQMPNKRHSRM	GGRKM	GTVFTRLIGRL	ASQG-HDLSA	PVDLKNY	WANHGTN	RYITIK	

Group IIC

Elaeis_2	NQVTFDEATMPTEVCSCTGKYQCYKWNGGWQSA	ACCTTTL	SMYPLFVMPNKRHTR	MGRKM	GGAFKLLSRL	AAEG-HDL	LQPVDLKD	HNWAKHGTN	RYITIK	
OSBBR-likeD	NQVAFDDSTMPAPVCSCTGKLRQCYKWNGGWQSA	SCCTMNI	SMYPLFVMPNKRHARM	GGRKM	GGAFTKL	LSRLAAEG-HDL	STPVDLKD	HNWAKHGTN	RYITIR	
HvBBR_2	NQVSFDESSMPAPVCSCTGVLRQCYKWNGGWQSA	SCCTTMS	SLYPLFVMPNKRHARM	GGRKM	SGAFTKL	LSRLAAEG-HDLSA	SASGDLKD	HNWAKHGTN	RYITIP	

Group IID

SlBBR/BPC2	LKINFDDAMPVPVCSCTGTQPCCYKWGHGGWQSA	ACCTTTL	SMYPLPQISNKRYSR	VGRKM	GGAFSKL	LNRLAAQG-YDLSI	PDLKD	HNWAKHGTN	RYSTLK	
StBBR/BPC2	FQINFDESAMPVPVCSCTGTQPCCYKWGHGGWQSA	ACCTTTL	SMYPLPQISNKRYSR	VGRKM	GGAFSKL	LNRLAAQG-YDLSI	PDLKD	HNWAKHGTN	RYSTLK	
NtBBR/BPC2	NQINFDESAMPVPVCSCTGTQPCCYKWGHGGWQSA	ACCTTTL	SMYPLPQISNKRYSR	VGRKM	GGAFSKL	LNRLAQGG-YDLSV	PDLKD	HNWAKHGTN	RYSTLK	
HaBBR/BPC2	NQVNFDETAMPVPVCSCTGVQPCCYRWGSGGWQSA	ACCTTMS	MYPLPLVTNKRYSR	VGRKM	GGAFTKL	LRLAS	EG-YDLS	TPDLKD	HNWAKHGTN	RYSKLK
AaBBR/BPC3	NQVNFDESAMPVPVCSCTGAPQCCYRWGSGGWQSA	ACCTTMS	MYPLQLANKRYSR	VGRKM	GGAFTKL	LRLSSEG-YDLS	SSQDLKD	HNWAKHGTN	RYSTVK	

Group IIE

PinTaeBPC2	LPITFDASALPIPVCSCTGVPPQCYRWGSGGWQSA	ACCTTIS	SMYPLPMNPNKRGAR	LGRKM	GGAFAKLLAR	LADI	EG-YSLEY	PVDLKNH	WAKHGTN	RYIRIQ
PinSitBPC3	NKITFDTASALPIPVCSCTGVPPQCYRWGSGGWQSA	ACCTTIS	SIYPLPLNPNKRGAR	LGRKM	GGAFAKLLAR	LADI	EG-YSLEY	PVDLKNH	WAKHGTN	RYIRIQ

Group IV

PinSitBPC2	KSCVYNPSMPIPVCSCTGANQPCYRWNGGWQSA	ACCTTMS	SMYPLPMNPNKKG	YRFPGRKM	SAGAFQKL	LVRLSLQG-IDVTK	PDLKEH	WAKHGTN	RYVTIK	
Ceratopteris	YVPPYDLASTVPVFCSCTGTKRQCYRWGSGGWQSA	ACCTTFL	SAYPLPVNHARN	SRVAGRKM	SGGAFKKL	LDRLAGTG-VDV	TQPIDLKNH	WAKHGTN	KYVTIR	
Adiantum	QKDLNFTVTTPIPVCSCTGSSQCCYRWNGNGWQSA	ACCTTSL	SVHPLPMPLKRGYR	LGRKM	SAGAFQKL	VKRLTQEG-VDLS	QPIDLKNY	WAKHGTN	RYITIK	
Selaginella	AESSTTRKYPAPFCSCTGTNQCCYRWNGNGWQSA	ACCTTKI	SMYPLPMNPKKGS	RVAGRKM	SAGAFMKL	LDRLTAE	EG-YVDN	SSVDLKNH	WAKHGTN	RYVTIK
Physcomitrella	RIFRSQTVPTPIPVCSCTGMNQCCYRWNGNGWQSA	ACCTTIL	SMFPLPLNPKKGS	RLAGRKM	SAGAFDKL	LEKLVS	EG-VNIN	LPVDLREH	WAKHGTN	RYVTIR
Marchantia	BEIYVENVRYPIPVCSCTGVKQCCYRWNGNGWQSA	ACCTTMI	SMYPLPMNPTKRGS	RLAGRKM	SAGAFKLE	KLAL	EG-VNVN	YPVDLKD	HNWAKHGTN	RYVTIR