

Cyrtopogon haitianensisMA...EKDGHFDA 10
Chondrus crispusMGGACENTDFHFQA 14
Gracilaria gracilisMG...SEDHYVA 10
Cyandioschyzon_merolae_strain_10DMK...EDGETRFR 11
Galdieria sulphurariaMK 2
Arabidopsis_thalianaEAVTEDDQHMUVKERSVVERI 115
Zea_maysDISEETTCG_AGVADQALNRVY 111
Oryza_sativaMASFAVSGARLG_VVRAGG.....GGGGG.GGPAARSGGVLDPSVLFRRK.DFSRGRVVCAGAPGVKVLPPGGSGDLLLSAERFDVETQEQPEESQIPDDNKVVFEEEEIEPAVAEASIKVVAEKDLESSEVIQDIENVTGVIKDAEPTVDEKRV 152

Pyropia_haitianensisWRCKRDTQVIAARVYEPYADSRHFTVNEIKNNEESGGGAGCAVNSHFEHAVEGVYREWRWFSQSVSVGSDNGNRRNSHQLTRGEGEWITTIIPONEISPAVHGGSKVYKCVITFGGHHLRNPA.....WATYLLIKNESTLLFD 162
Chondrus crispusWRKNDSDGTAICDRVYEPYADSRHFTVNEIKNNEESGGGAGCAVNSHFEHAVEGVYREWRWFSQSVSVGSDNGNRRNSHQLTRGEGEWITTIIPONEISPAVHGGSKVYKCVITFGGHHLRNPA.....WATYLLIKNESTLLFD 166
Gracilaria gracilisWRKNDSDGTAICDRVYEPYADSRHFTVNEIKNNEESGGGAGCAVNSHFEHAVEGVYREWRWFSQSVSVGSDNGNRRNSHQLTRGEGEWITTIIPONEISPAVHGGSKVYKCVITFGGHHLRNPA.....WATYLLIKNESTLLFD 162
Cyandioschyzon_merolae_strain_10DWASQTDDGVIADSEVPEFFCGDILNKNRKLKSEEMRGGGDCGYSQRLLFGLNLDDGVYREWRWFAVEVTLFDGNGNRRSLPKKREEGRSVGLFENHISGSAITFKYRVLVITFGGHHLRNPA.....WASQFLLIKNESTLLFD 163
Galdieria sulphurariaWNEKFCPLKVVKDESEVPEFFCGDILNKNRKLKSEEMRGGGDCGYSQRLLFGLNLDDGVYREWRWFAVEVTLFDGNGNRRSHPGLKCRDSEGHYGLIDNAGSPATVASHRKLVLVITFGGHHLRNPAVYQVFLNRRATFLDNETSFVYD 162
Arabidopsis_thalianaVFFFGDGRKRTYDSEVPEYVYNNVDRGRKRLRDESRGGRGSRGKELRSLSDAQVYREWRWFAASRLSDGNGNRRNSMDITRNEEGWETIIPONEISPAVHGGSKVYKCVITFGGHHLRNPA.....WIKFSWAGSEIFEN 266
Zea_maysVFFFGDGRKRTYDSEVPEYVYNNVDRGRKRLRDESRGGRGSRGKELRSLSDAQVYREWRWFAASRLSDGNGNRRNSMDITRNEEGWETIIPONEISPAVHGGSKVYKCVITFGGHHLRNPA.....WIKFSWAGSEIFEN 262
Oryza_sativaIFPFGDGRKRTYDSEVPEYVYNNVDRGRKRLRDESRGGRGSRGKELRSLSDAQVYREWRWFAASRLSDGNGNRRNSMDITRNEEGWETIIPONEISPAVHGGSKVYKCVITFGGHHLRNPA.....WIKFSWAGSEIFEN 303

Pyropia_haitianensisTVFNWPEEEKYQMKQKHFAPFCQRYVDFEENSGSDNKLKGYTDSYDINLILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 322
Chondrus crispusAMEWHKE...SYKXKSEFHVRRPQSRIVDFEENSGSDNKLKGYTDSYDINLILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 324
Gracilaria gracilisTVFNWPEEEKYQMKQKHFAPFCQRYVDFEENSGSDNKLKGYTDSYDINLILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 320
Cyandioschyzon_merolae_strain_10DTLFNWPEEWYVYHNCDFHVRQCDARVDFEENSGSNNEERITVYAGRDVILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 323
Galdieria sulphurariaAVESVPEEKYVYVYHNCDFHVRQCDARVDFEENSGSNNEERITVYAGRDVILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 322
Arabidopsis_thalianaGIYDPEEKYVYVYHNCDFHVRQCDARVDFEENSGSNNEERITVYAGRDVILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 425
Zea_maysGIYDPEEKYVYVYHNCDFHVRQCDARVDFEENSGSNNEERITVYAGRDVILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 421
Oryza_sativaGIYDPEEKYVYVYHNCDFHVRQCDARVDFEENSGSNNEERITVYAGRDVILRFDLSTYDIAHMAIDMDFVYVSGYHVYVNFVAFSSRGGPELLEKDAIDRAGGLVIMVYVHSHASNSDGNIDGDTHTHYFFGRRGSHWRSHRYAQ 462

Pyropia_haitianensisMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 482
Chondrus crispusMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 484
Gracilaria gracilisMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 480
Cyandioschyzon_merolae_strain_10DMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 482
Galdieria sulphurariaMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 482
Arabidopsis_thalianaMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 583
Zea_maysMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 579
Oryza_sativaMVEVRELLSNRWMVDEVPDGRFRDGVTSVMHGGGQVSGSDYEVFGCTDIDCVYMLNDELVSHLHVAVAVLDVGVGMPFLGVDPGGGGLFYDRGADAPDPVTEIETEKEDDNRNINVTILNRRNNSKIGQCESHDQALVGRKM 620

Pyropia_haitianensisAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 630
Chondrus crispusAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 633
Gracilaria gracilisAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 629
Cyandioschyzon_merolae_strain_10DAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 631
Galdieria sulphurariaAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 731
Arabidopsis_thalianaAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 631
Zea_maysAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 737
Oryza_sativaAFRLMDMNSMVFSTLCLIRGALHKMRIRLITMGEGVYFMGMEGHPEDDFRR.....AGNNSGQYARRRWVLDGADYVHGMLNACENHALSQSHGCRSNLHWITVHNGCQVIVAVPBGGLLVFVNSHHTSWRSDR 778

Pyropia_haitianensisGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....AAAATAETVAEVDAAKAAFAAKTAASFTDAAAEFAEAKDAGAKASA..... 755
Chondrus crispusGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....EAAHKAAF.....EPQAVTEYFSSCGVQVYVASHL.EATININGAGNGARFPEAGAKA..... 754
Gracilaria gracilisGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....EAAHKAAF.....EPQAVTEYFSSCGVQVYVASHL.EATININGAGNGARFPEAGAKA..... 766
Cyandioschyzon_merolae_strain_10DGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....EAAHKAAF.....EPQAVTEYFSSCGVQVYVASHL.EATININGAGNGARFPEAGAKA..... 789
Galdieria sulphurariaGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....EAAHKAAF.....EPQAVTEYFSSCGVQVYVASHL.EATININGAGNGARFPEAGAKA..... 695
Arabidopsis_thalianaGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....EAAHKAAF.....EPQAVTEYFSSCGVQVYVASHL.EATININGAGNGARFPEAGAKA..... 805
Zea_maysGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....EAAHKAAF.....EPQAVTEYFSSCGVQVYVASHL.EATININGAGNGARFPEAGAKA..... 799
Oryza_sativaGTHWGRVRLVDSGTVNGGCGVWVHVHRSSSFFGCSHSLQLVLSSTCGVHGFSLDSKAE.....EAAHKAAF.....EAAHKAAF.....EPQAVTEYFSSCGVQVYVASHL.EATININGAGNGARFPEAGAKA..... 841

Pyropia_haitianensisMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 755
Chondrus crispusMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 754
Gracilaria gracilisMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 766
Cyandioschyzon_merolae_strain_10DMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 789
Galdieria sulphurariaMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 695
Arabidopsis_thalianaMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 805
Zea_maysMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 799
Oryza_sativaMANSQAHSERATPAGESMQAADDSSRFSPAETATAAQPQAADFDSDRRSGSTDRREHAERNRAGLFGRW 841

Pyropia_haitianensisg g y l d d g g r c x r y p r v y 755
Chondrus crispusg g y l d d g g r c x r y p r v y 754
Gracilaria gracilisg g y l d d g g r c x r y p r v y 766
Cyandioschyzon_merolae_strain_10Dg g y l d d g g r c x r y p r v y 789
Galdieria sulphurariag g y l d d g g r c x r y p r v y 695
Arabidopsis_thalianag g y l d d g g r c x r y p r v y 805
Zea_maysg g y l d d g g r c x r y p r v y 799
Oryza_sativag g y l d d g g r c x r y p r v y 841