

>OsRR1 A-type response regulator, Cytokinin signaling

MEGGRGVTRVLLVDDSPVDRRVVQLLLSSSACAGSFHVIIVDSAKKAMEFLGLKEEGKE
QAIDMVLTDYCMPMTGYELLKAICALSPLKPIPVIMSENENPQRISRCMNAGAEDFIVK
PLQSKDVQRLRNCSPANTQCCDAGSDGKPLLLPSDHVVVDATAASPPPPSRRAHFAG
VAMVLHSSSVELSHYFPFLFKFILLVYAILCLGELLHRWSNGCFLNLWCA*

>OsRR2 A-type response regulator, Cytokinin signaling

MGAEAVRVLVDDSPVDRRVVELLLRAHCGGGGGAAAGEAAPFHVTAVDSGKKAMELL
GRRRGDRDHLTPSSPAAAAAANDQAIDIVLTDYCMPMTGYDLLKAICALGSPNPIPVV
MSENENPQRISRCMTAGAEDFILKPLKMNDVQRLRKCSGATRPKSAVAGDDDRCCNTAKK
AAAAAATPEQQQQQQRSSHLAGLAMVMNASSFEVSHYFQLIFKLILLAYAVLCLSQLLH
RWSNGSSLLSLWCA*

>OsRR3 A-type response regulator, Cytokinin signaling

MSTKTVPEPEPHVLAVDDSIIVDRVISRLLRSSKYRVTTVDSGKRALEVLSDLRNVHMIIT
DYCMPMTGFDLLKRVKESAELEIPVVMSENENPSTRIRRCLEEGAEDFLIKPVRPSDVS
RLCNRVIMK*

>OsRR4 A-type response regulator, Cytokinin signaling

MTVVDAESRFHVLAVDDSLIDRKLIELLLKNSSYQVTTVDSGSKALELLGLRDEGDDSSS
SPSSSPDHQEIDVNLITDYCMPGMTGYDLLKRVKGSSSLKDIPVIMSENENPARINRCL
EDGAEEFFLKPVKLADMKKLKSHLLKRKQQLPMAAAPDKPPHKPDEAAASAAIAEA
ATAQTDGIISDCSCSGSSKRKAAAMEQEVISSPDQRTKPLSSTSSGLAVET*

>OsRR5 A-type response regulator, Cytokinin signaling

MATCRSRGVERGGAPHVLAVDDSSVDRAVISGILRSSQFRVTAVDSGKRALELLGSEPNVS
MIITDYWMPMTGYELLKKVKESRLKEIPVIMSENENSTRINRCLEEGAEDFLLKPVPQ
SDVSRLCSRVL*

>OsRR6 A-type response regulator, Cytokinin signaling

MAAAAQAPAAAKVVVATSPRAGGGGGGGDRKVVPVVVAAAAGDEAQSEMHLAVDD
SSVDRAVIAKILRSSKYRVTTVESATRALELLCLGLVPNVNMIITDYWMPGMTGYELLKRV
KESSQLKEIPVIMSENENPNRISRCLEEGAEDFLLKPVRPSDVSRLCSRIR*

>OsRR7 A-type response regulator, Cytokinin signaling

MRVPAAVTGGCGCGVDGGGGCCRGGGKGLADWEEGKDDMKSVVVKGWTRMAQVVPL
HDNASAEDDDDEEDDEDDDDDDDEDEEEAAPPYVMAVDDSSVDRAVITALLRRSK
YRDSGKRALEILGSEPNVSMIITDYWMPMTGYDLLKKIKESSELKQIPVIMSENENPTRI
SRCLEEGAEDFLLKPVRPADISRITSRMLQ*

>OsRR8 A-type response regulator, Cytokinin signaling

MSSPHVLVDDTHVDRHVSMALMRHNVRTAVESVMQALMFLDSEHDVDMIVSDYC
MPDMTGYNLLMEVKKSPKLAHLPVVIASSDNIPERIRKCLDGGAKDYILKPKIVDVPRI
MKYI*

>OsRR9 A-type response regulator, Cytokinin signaling

MAVAIEAPFHVLAVDDSLPDRKLIERLLKTSSFQGLAFVCVTTVDSGSKALEFLGLHDHE
DSPISTQSDQGEVAVNLIITDYCMPGMTGYDLLKKIKESSYLRDIPVIMSSDNIPSRINRCL
EEGADEFFLKPVRLSDMSKLKPHILKSRCKEHYQQEQNLQSNSESNNSSNPTSENSSSSTSS
NSHKRKAVDEEILPHTIRPRHS*

>OsRR10 A-type response regulator, Cytokinin signaling

MAVAIEAPFHVLAVDDSLPDRKLIERLLKTSSFQVTTVDSGSKALEFLGLHDHEDSPISTQS

DQQEVGVNLIITDYCMPGMTGYDLLKKIKESSYLRDIPVVIMSSDNIPSRINRCLEEGADEF
FLKPVRLSDMSKLPKPHILKSRCKEHYQQEQHLQSNSESNNSSNPTSSENSSSSTSTNSHKRK
AVDEEILPHTIRPRHS*

>OsRR11 A-type response regulator, Cytokinin signaling

MSSIGAGAGGAVVGAAVA AVAVGGGAPPHVLAVDDSSVDRAVIAGILRSSRFRVTAVDSGK
RALELLGSEPNVSMIITDYWMPMTGYELLKKVKESSKLLKIPVVIMSSENVPTRISRCLE
EGAEDFLVKPVRPSDVSRLFSRVLP*

>OsRR12 A-type response regulator, Cytokinin signaling

MSSPHVLVDDTLVDRHVSMALMRHNVRVTAVESVMQALMFLDSEHDVNMIVSDYC
MPDMTGYDLLMEVKKSPKLAHLPVVIASSDNIPERIRKCLDGGAKDYILKPVKIVDLPRIL
NYI*

>OsRR13 A-type response regulator, Cytokinin signaling

MSSPHVLVDDTHVDRHVISMALMRHNVRVTAVESVMQALVFLDSEHDVNMIVSDYCM
PEMTGYDLLMEVKKSPRLVHLPVIIASSDNIPERIRKCFDGGAKDYILKPVKIADVPRILNY
I*

>OsRR21 B-type response regulator, Cytokinin signaling

MAPVEDGGGVFEFPVGMKVLVDDDDPTCLAVLKRMLLECRYDATTCSQATRALTMLREN
RRGFDVIISDVHMPDMDGFRLLLELVGLEMDLPVIMMSADSRTDIVMKGIKHGACDYLIK
VRMEELKNIWQHVRKKFNENKEHEHSGSLDDTDRTPTNNDNEYASSANDGAEGSWKS
QKKKRDKDDDDGELESGDPSSTSKKPRVVWSVELHQQFVNAVNHGLIDKAVPKKILELM
NVPGLTRENVAHLQKFRLLYKRIAQHAGIANPFCPPASSGKVGSLGGLDFQALAASGQI
PPQALAAALQDELLGRPTNSLVLPGRDQSSRLAAVKGNKPHGEREIAFGQPIYKCQNNAY
GAFPQSSPAVGGMPFSFAWPNNKLGMASTGTGGMSNSQNSNIVLHELQQQPDAMLSG
TLHSLDVKPSGIVMPSQSLNTFSASEGLSPNQNTLMIPAQSSGFLAAMPSPMKHEPV LATS
QPSSSLLGGIDLNVQASTSQPLISAHGGGNLSGLVNRNPNVVPSQGISTFHTPNNPYLVSPN
SMGMGSKQPPGV LKTENS DALNHSYGYLGGSNPPMDSG LLSQSKNTQFGLLGQDDITG
SWSPLPNVDSYGNTVGLSHPGSSSSSFQSSNVALGKLPDQGRGKNHGFVGKGT CIPSRFAV
DEIESPTNNLSHSIGSSGDIMSPDIFGFSGQM*

>OsRR22 B-type response regulator, Cytokinin signaling

MLLGALRMEERKGLMGRERDQFPVGMRVLA VDDDPVCLKVLETLLRRCQYHVTSTNQA
ITALKLLREN RDMFDLVISDVHMPDMDGFKLLELVGLEMDLPVIMLSVNGETKTVMKGIT
HGACDYLLKPVRIEELRN IWQHVVRRKFGNRERNNLDFSKECNKPQSADTDHGPYQPTC
GSSDQNGRSSSRKRELHGEDDDEGDDNDYQENDEPSAAKKPRVVWSVELHRKFVA AVN
QLGIDKAVPKRILELMNVEKLTRENVAHLQKYRLLYKRLGAVASQQASIVAAFGGRDPSF
LHIGAFEG LQSYQPFAPSAALPSFNPHGLLTRTSAAA AFG LQELAAPSSTIQTSTGNVTVGH
CLEENQQANLAQGLTAAIGQPQLQQNWIHQEGNGLSDVFSGSSLTNTLSSTLQRPSSSLP
PQELLECKQAKVSMPPSIRIPPSSSALLERTLGVSTNLGDSSISQQGALPIDGGFSADRLPLH
SSFDGAVATKLDTS LAASQREIGQQGKFSVSM LVSPSDNLALAKNAKTGASSSGSTIILPLD
TARHSDYLQFGGASNSLQKMDGQKQDHIQSSNIIWSSMPSTQLPSDTQIHNTQNQR LDSG
SFNHNIGAHLADQTNASASILPQMKFDTRISEEKM KQKNTYDLGSSKLQGGFNSSGCNFD
GLLSIIKVEKDDLPFMDNELGCDLFLGACI*

>OsRR23 B-type response regulator, Cytokinin signaling

MRAAEERKGVVPAARRRDQFPVGMRVLA VDDDPVCLKVLETLLLRCQYHVTTTNQA AI
ALKMLREN RDMFDLVISDVHMPDMDGFKLLELVGLEMDLPVIMLSVNGETKTVLK GITH

GACDYLLKPVRIEELRNIWQHVIRRKFSTRDRANLDFYEECNKPPNADSDHVGHVTCGS
PDQSGRPSKKRKEYCSEEEDEGEVNTQDIDDPSAPKKPRVVWSVELHRKFVAAVNQLGID
KAVPKRILELMNVEKLTRENVASHLQKYRLYLKRLSAVASQQVSIVAALGGRDPFLHMGG
FEGHQYQAFSTSSAALSSFTPHGLLNSPRNNPAALGTQGVPAKSIQTMSGSHLSHSIND
ANKYHLSLPGNQKGNLGGGLATSLGQTQMQQKWIHEETDDLSTILSGNGLSNGMSGTLQ
SVTSSPLLQELAECTQAKIVSQPSIRTSSVSSEHIEGAVGVSSGLLESRVSSQSTIPLSGFSA
NGLLIHGSFNNTCANKLGGTSSSCAPARSSNDLMVARDTKGGASSFGGAMLLPPDTEQKY
LNFGGGNGLKQKFDRTADSLFDLKFVWSSVPSSQLASNIGAHHAMSQRWNNSSSSNSSNI
GARMIGQATSSGSTVIPQMKTDFLVSGDMAMPKNASDLSIPKLQSELSSSSCSFDGLLSIV
KVEKDDVTFSDDLGCGDFYSLGACI*

>OsRR24 B-type response regulator, Cytokinin signaling, Rice meiosis and fertility

MTVEERQGRVGGHGVSGGGGGRDQFPVGMRLVAVDDPTCLKILENLLLRCQYHVTTT
GQAATALKLLRENKDQFDLVISDVHMPDMDGFKLLELVGLEMDLPVIMLSANGETQTVM
KGITHGACDYLLKPVRLEQLRTIWQHVIRRKNCDAKNRGNDDDAGQKAQGMNNEGESI
GANRNKRQSRKSRDENGDDGDDSDENSNENGDSSTQKKPRVVWSVELHRKFVAAVNQL
GIEKAVPKILDLMNVENITRENVASHLQKYRLYLKRLSTDASRQANLAAAFGGRNPAYIN
MNSFGNYNAYGRYRTVPTAGHTQANNILTRMNSPSAFGVHGLLHSQPIQLGHAQNNLSTS
LNDLGGLNNGNMIRGAQMSTILTPSGNSFPNISNGAPLATANRSLQPLESSNQHLSRVH
SSSADPFSTLVGESPOFPDLGRTTNTWQTAVPSNIQDRGHNDNMSQATLHMNGPKIEPVSS
FTSSNQIPLLGNEMQQQVASLASNVPIAFNQDTSPFNYGSSTNSRDMLNNSHVFSNSSINTS
LPNLSLDNPAVPRQTLDRGNTGIVSPMQDGRHHQAVSNQLNYNDDLMRTTGLQRGLSGG
LDDIVVDMFRPDREDDGVPIYIDGDWELV*

>OsRR25 B-type response regulator, Cytokinin signaling

MAATQATAARKFPEGLRVLAVDDSPVCLMLLEALLRRCKYQPTMTRDAATALRMLRERP
GDFDLVISDVHMLDMDGFKLLELIGLEMDLPVIMQSANGELETMMKGVTHGACDYLVKP
VSLKDIQNIWQHVVWRKRKLDIRNHNGGYNDGGELVGATRTRKRYTRKMRNDGDNYGE
NKENMDSTLKRQRVVWTPELHRDFVIIVHELGVDRVPRKILRMMKVDTYMTRENIASHL
QKYRLYLKRISTQTGMDPDQFPEKWYMNELDALKNYCENGRYRLTPAIASSSSSNPFAR
MNSASALATNGFLPTHSVQLKNSQRNMAMGTVGHGGSPGNNPVFQPLQNSSNARKCFPS
GPSGSSFANISNGLVLDTDDSGSSYAGMFCKSMWETSNGSPSCHSGNSSANKSNNGVSAP
ANQFQVQSKFGFSALANQFPVQSNCGFSAPANQYQVQSNGGFSVPANQFPVQSNGEFLAP
TNQFPVQYPEVNNQPLVQMNQSSTNHFSTIGNDYQFPDLANCSKYWQPTAPSMFPDLGH
NDGTSFRPSQANIANINQLSSFAASSGQEPMFGDELHGQMSPIMSTISLSDFDDQMGSFNIG
NDTSPAEMMHDNFSLGSDSNISSSTPTDSSFGSTFPDFHLDSPEMPAQMLNGGDEDGILLP
VLDDTVDQQDLFDQLDENNGNFQSNNSVVKALVFAS*

>OsRR26 B-type response regulator, Cytokinin signaling

MDATAFPYGLRVLVVDDPTWLKILEKMLRKCSYEVTTCGLARVALDILRERKNKFDIVIS
DVNMPDMDGFKLLEHIGLEMDLPVIMMSIDGETSRVMKGVQHGACDYLLKPVRMKELR
NIWQHVVYRKKMHEVKEIEGNDSCDDLQILRNSFEGLDEKSLFMRSDSDTMRKRKDVK
DHADQESSDGNTVKKARVVWSVDLHQKFVNANVQIGFDKVGPKILDLMNVPGLTREN
VASHLQKYRLYLSRLQKQNEERILGAARQDFSHKGTSENLNLRSSFQEQPSNIANGYPHAS
QNIQTQANMLDSQLEDTKSTVPLPVPDKKRTLASDAADSQNVTSASSLGGVLSFKSMPVN
QDRKPSETMILECQAWTGGPSKQFMQYPKHNERCDLLGDYSCLPKPDLEHPVGPSNLY
APPPLISMSCGMEGDARDFSDVKPAIMDCIKSLSPALTCTVDSVSVQLSDSVVTSIDGDLKS

SGVDGLPSIKDCCLDQTN SQGSLRPSQEPSIIGSTELASLPEDLPSYPLHGV SLENIGLSSIDL
LNYS DAMILSGLQSNWYDDLEFSSEMMDYPSIDECLFASS*

>OsRR27

MAENNGAVPPGCKLPAGGFFGRLHVLVVD DDAAYLEELKLM LLLAGYAVTGKTTAE EAL
KEVDQNPEDYFHIVMTDVHMSGMDGFDLLHRINGRVPVIMFSEGEDVVMVMRTVMNGA
CDYMKPMTSEAIKFIWKHVLRLWRLSALPANASSSLQPSDHLAAALAAVAPPPPAVQLPA
APAQAGNRDGEAHEEAELSTQPPALVPSGVQEAAA AVWSSRGDGEAPPPAVAAAAKAPS
KKRGASEVSDRGSNLEATTGRKKVRTRFTWTTVSHTSFV RAYEQLKDQEGPKKIKQLM
ELDGIFVTKTQVSSH LQKYRSWLENERKKEEATSSSPCNPLSYTNCLDRGYSTWKQSSVIT
EGQQSSSFSGRPIHSMATSNGLT TTD TQAGNYVGVGAKEIENFISSHQRSLGTAIGQESTI
EQASLHSEITSVSRDAHENGNSQARGSAMNGTSGTRGV LVTNENLLHVVSASLPSNMG
QPTQPSQSFC TNELAAANYSIISDQNP GTSHPTSSSAINNQNSKTQEMSVSQTVELGCGNDV
MLDWPELVGLEDQLDNDVLMNSFFDGDLLQQGVVTAIDGTQEMLAFDSTGDLGSPPRG
LNNEIASHENTNGKNGASSGP*

>OsRR28

MAQNEGIPNGTLSAMVIDEDKCHADSTCSMICTQLNFCVTVFTSPIKALDFLQNQAEGVH
LVLADVQMEEMNGFEFLKVARELHKSIQVIMMSTETTIT YTMKRCVQLGAQILVKKPLDVV
TIQNLWQHLDIKVLKMEKIKDMLQGVGDKSTCANEMNSFPENQKDGT KRKYLMWTPH
LQKKFLHALEILGEGQISLMIMDVDNIDRKQISTHLQKHRLQLKKKLSKASFTKGSNEDTS
NPSAKNHLTCRTMTLQPHPYTNQPAETTMQIHSE DVEHDDVYDAMRRALQDGTAFDESK
YSSDPFSNEDEDVVG DGYADKANAISSGDHYQVAVVLTTPHNVDYTQEIMNKVTTSD
VQVTRGGKATVSRLVDYSDSDSD*

>OsRR29 LOC_Os04g28130.1

MAQKEGLPAGRLSAMVIDEDKCHADSTSYMLSAELNFSVTVFTSPIKALDFLQNHAE GV
DLVLADVHMEEMNGFDLKVARELHKSIQVIMMSTETTMYTMKRCVKLGAQFLVNKPL
DAGTIKNLWQYVDLKVLRMEKIKDLLQGIGDESTCANETNSLAENPKNDTKKKYYLMW
TPHLQKKFLHALQILGKDASPKNIKKIMGVDNIDCRQIAAHLQKHRLRLTKDLKKASFTT
DTSKDESNSRIGPAESHVCRNASTLQPRSNTQPTETTMQILSEDAEYDDVYAAMRRALQ
YGIVFDESKHSSDPGDEDEQVVVG DQDGCANEANDIDSSGDHHQVA AVVTKPCNANA
SQEIINKMTNSDGMQATKGSKAAV FRLVDYSES DSD*

>OsRR30 B-type response regulator, Floral inducer to promote short-day (SD) flowering pathway

MDHRELWPYGLRVLVIDDDCSYLSVMEDLLLKCSYKVTTYKNVREAVPFILDNPQIVDLV
ISDAFFPTEDGLLILQEVT SKFGIPTVIMASSGDTNTVMKYVANGAFDFLLKPVRIEELSNI
WQHIFRKQM QDHKNNNMVGNLEKPGHPPSILAMARATPATRSTATEASLAPLENEVRD
DMVNYNGEITDIRDLGKSRLTWTTQLHRQFIAAVNHLGEDKAVPKKILGIMKVKHLTREQ
VASHLQKYRMQLKKS IPTTSKHGATLSSTALDKTQDHP SRSQYFNQDGCKEIMDYSLPRD
DLSSGSECMLEELNDYSSEGFQDFRWDS DKQEYGPCFWNF*

>OsRR31 LOC_Os08g35650.1

MEDQLSFFPGGLRVM PVDGDTKNTRTATKTLSTLHYSLVATHTTASAGLCTLSSDNMTDV
QTVLCDVKKVVS SSGFDFRRVVETEHHIPVIYLLSTTEPEQM VAGEDTEFLNHL LKATYIV
RKPLDQATMAQLWRVVAWRRCCL EERIPRDSMDDIAAHAGVVGKDGNDNDVIII EPQV
HFKVVRSRGSRK RQLTINVDSGSSDGADANPRQKLEHKKDAKGPLGQH VASHLQPQEYC
TKQQKDLDERLLSLDSLFLKAILSTLNVSLCNPLILTVPA AFTPQDGMTM NKDKAPMIEL
PFGLPVDDFLVGQTAYGSAGPSIGAPDDND DDAAMYAYTSALNNNA AVGSLMVPPIESTF

TIIDPIVGTKEGSVPVVVVSEDQNNAAIEATAPNNAELFMMPEQVAVDAPVDVEEGIM
FSLESLLGLDEDMIPMEDAGGEATDDSLNIKEGGMEIGWDLDLDYILMNNTNEFAFLDDM
AWIE*

>OsRR32 LOC_Os08g17760.1

MEDMLSFFSSGLHVMLVDDDTKNTRTATKTL SMLHCPVVSTHTTACAGLRTLSGDNMLD
VQTVLCDVSKVVSSGFD FRRVNETEHQIPVIYQERVPGDSMDDIAAHAGAGGEDGNDDD
VVVIEEPQVHF KLVRSRGRSRKRQLTINVDSGSSDSA AFKYAVWLIISIRSTDIDLSDANQRK
KIEHMNDAKGPVGQHVASHLQLPAQEYCTKQQKDLDERRLISSDSLFLKAIFPTLNVSPSS
PLILAGGAGPSCIPTTTIAGSRTAAPFQVPVFQQQPSGTTVISFSNTAVQAPIGNAFISFNNA
SPAATGNTVISFNNAAPAAMQVPAMRQRLSGGVQPDAPQQRLYMGPF SYQGPPPPPTMR
NHINIVPTAFIPRVGMTVNIGKAPMIELPFGVPVDDFLVGETAYGGAGPSIGAPSNDAAVAY
AYTGALNNNTAVGSLMAPPIDEPTFTLTDP IVGTKEGGVVHIVITSEDQNALAAVEAGAPN
NAEPFMMPDQVDLEEDIMFSLESLLGLDEDMIPMEDAGGEAAEGSLNIGEGGMEIGWDL
DLDDILMNNTNEFAFLDDLAWIE*

>OsRR33 Signal transduction response regulator, receiver region domain containing protein

MDQARISFFPDGLRVMIIDDDAKAVRRATATLSQLQYAVVATHSTASAGLRALSGDNVVEI
QAILCDVHKVVSSGFD FRRVVESELRIPIVYLLSKMEEEDMVAGEDAEFLNHL LLLTATYIV
RKPLNPTVMARLWRVVAWRMYCLEERIQANVAANAGAGGEDDDDDDDDVVIEEPQVHF
KVVRRTSGGSRKRQLTINVDDGNRSGSGSGGGGGGADANPTRILQHITSNLQEFR TKHQ
KKDMAIERPLISSDSMFLKAILPTLKISPCNPLTLTGGIGSSSVAAEAFAGGSSSAAPLQIPVF
QQQSTGNGNTVISFSNNASPMAMRPTDNTMISFN NVSAAPVANAVISFSNISRSAAMQAP
AARGQHLSGDVQQLD FFPQQKLYFGPF SYQGPPPPSMHNNHINLLPPTSSPVTCSDMKGKVPI
IELPYGMPVDDFLVSQTTYGGAGPSIGATDA AAAAYPYTDAPSNNVATGCLMVPPMGPAF
SITEPTVVAQGE GTGTGVDAGTSEKNAIVEAPNNAPLMVLDQVAADAAMDVQEDIMFSL
ESLLGPDYDLLPMEDVSAPDTAAAGDAAGGSLDGEEGMDIGWDLDLDDILVENVNDFA
FLDNLAGSE*

>OsRR41 Signal transduction response regulator, receiver region domain containing protein

MARKMIRVLLVEDEEINRVVARAALKAAGGGDVVDEAENGEVAVQRVRDAAAPYDLVL
MDKQMPVMDGHEATRIRGMGVTTPIVAVSSDGLPADVDAFITAGADDFTSKPLSKEKLG
VILAKFRLA*

>OsRR42 Hypothetical conserved gene

MAFQTQGSNLRALLVEDIKVNRMILSQMLRK FQVETTVVQNGKEAVELFLGGETFDIVLT
DNLMPIMTGPEAISKIRAMGATDVMIVGVSDANSMEEFKDAGADLCV PKL KLEILEHIL
QETR SKKNKSSA*