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At 1 -----MGETPAEKS LNLIRGRLCDPSYVFRPLSASD SNYS
Zm 1 -----MVAAVSLP SQAQAVLR SRLCDPVFIHSALSSLD TNYS
Os 1 -----MAAAAAA SVASQAQAVLR SRLCDQAVVHSALRSSPDTNYS
Xl 1 -----MSKRKSKDLCTIPVGECTSKVHGILRORLEFQH--HGKPFQ--VDSQHK
Hs 1 -----MSSRKSKSNL IHTECLSQVQRILRERFCRQSPHSNLFG--VQVQYK
Dm 1 -----MPEADRELVSIRRFLEKRLQRD--YTTLRG--YAKERS
Sc 1 MTISEARLSPQVNL LPIKRHSNEEVEETAAILKKRTIDNEKCKSDP GFGSLQRRLLQQLYGLTLPD EKIITFTYIQDCQQ

At 38 KLFKFIIVSTSITE CNNSMLLLGPRGSGKAAVLDLVVGDLL--EQFPDSV SVIRLNGLLHSDDNCA-----
Zm 39 KLYLVASSVSEACNNSVLLLGPRGCGKAAVVDMLDDIK--EEHPDAI SVIRLNGMLHNDNCA-----
Os 42 KLYLVASSVSEACNNSVLLLGPRGCGKAAVVDMLDDIPK--KDHPDAI SVIRLNGMLHSDDNCA-----
Xl 44 HLVELLKRTVIHGESNSALTI GPRGSGKSMILKGALEDIFGMKQMKETALQVNLNGLLOITDKIA-----
Hs 46 HISELLKRTALEHGESNSVLIIGPRGSGKTMILINHALKELMEIEEVSENVLQVHNLNGLLOINDKIA-----
Dm 35 NVRLLLQRTAEMGESNS LLLGPRGSGKTTILINSVLADLLPNKSFSGENTLIVHLDGNLHTDDRVA-----
Sc 81 EDRIIRKQSI IQESHSVILVGP RQSYKTYLLDYELSLIQ--QSYKEQF IIRLNGFTI HSEQTAINGIATQLEQLQKIH

At 101 -FKEIARQLCMEHHLF SKMASFDDNSOFITAMLRACG-----LAHKTIIFVLEDFDFFAOQK-QRLLYSLLDAM
Zm 102 -MKEIARQLCSEHQLSFSKMAS SDDNTEFMDMLRECC-----LAHKTIIFILEDFDLFAOQK-QRLLYSLLDAM
Os 105 -TKEIARQLCLEHQLSFSKMAS SDDNTEFMDMLRECC-----LAHKTIIFVLEDFDLFAOQK-QRLLYSLLDAM
Xl 109 -LKEITRQLHLENVVGDRVFGSFAENLSFLEALKTGDR-----KSSCPVIFVLEDFDLFAHKKNOTLLYNLFDIA
Hs 111 -LKEITRQLALEHGESNSVLIIGPRGSGKTMILINHALKELMEIEEVSENVLQVHNLNGLLOINDKIA-----
Dm 100 -LKSITVOMOLENAADGKVFSGSFAENLAFLLQCLKAGC-----KHSKSVIFILEDFDLFAHKNOTLLYNLFDVS
Sc 159 GSEKIDDTSLTISSGSITVEF EKILLDSTTKTRNEDSGEVDRESITKITVVFIFDEIDTFAGPVRQTLLYNLFDVM

At 169 QSVTSQAVVIGLSSRLADOLLEKRVRSRFSHRKFLFPPSR--EELDGLFVHLLSLPAISGFPVSGYVS-----
Zm 170 QSLTSQAVVIGVSCRLDADOLLEKRVRSRFSHRKFLFSPSL--DDMQRLVEHLLILAKDSGLPSKYIA-----
Os 173 QSLTSQAVVIGVSCRLDADOLLEKRVRSRFSHRKFLFVPSV--DSLQRLMEHLLALPEISPLPTKYVR-----
Xl 179 QSAQTPVAVIGLTCRLDVMELLEKRVKSRFSHRQIHLINSFS-FSQYLOTFQEKLSLPASFPDSQFAEK-----
Hs 181 QSAQTPVAVIGLTCRLDILELLEKRVKSRFSHRQIHLINSFG-FPQYKIFKEQLSLPAISFPDKVFAEK-----
Dm 169 QSAQAPICVLGVTCLRDVIELLEKRVKSRFSHRQVFLFSPSLRRFEDYVDLCRDLLSLPTGNSLLLAAEKIYNLQNIQSGA
Sc 239 EHSRVPVCFIFGCTITKLNILLEYLEKRVKSRFSQRVVIYMPQIQN-LDDMVDAVRNLLTVRSIISPWVSQWN-----

At 236 -----RENDKIKNLTSTRFRKDLKTLFNANTVNSFLKFIICAVSLNLESCLLSLENFKAAL
Zm 237 -----DYNRLTSLFSDKKFKGCLNSLMDADATSNQRFLFRVAVSYMDMESCLLSVESFLKAL
Os 240 -----EMNARTSIFNDKFKGCLSSITDADATSHLRFLEFRVVSYMDIDSCLLSMQSFMNAL
Xl 247 -----WNESIKSLVESKLVEDVLOKQYNASKDVRS LHMMLLAVCRVNVSHPHITAADELEVF
Hs 249 -----WNENVQYLSEDRSVQVLEKHFNISKNLRS LHMMLLALNRVTASHPMTAVDLMEAS
Dm 249 LYFSRNHFDPGEYGFSPRLRDAWVKQICKVLA TQQA RSTLQALHDFDISEAYKNFLFRVAHRPOSPHITAEKMAAVG
Sc 307 -----ETLEKELSDPRSNLNRHIRMNFETFRSLPTLKNSIPLVATSKNFGSCTAIKSCSFLDIYN

At 295 SSMORQPKLEAVRDCSVLELYLLVCMRRL E-VKEQSSVNFISVMKEY-KATHDSFHTSDYQAQNVCLRAFEHLRERO---
Zm 296 SSMORQPKMDSLQDLSILELYLLVCMRRL E-SKEQTSYNFRIMKEY-RSIODAYKTSDKYASTVCFRAFEHLLDRE---
Os 299 SSMORQPKMDGLQDLSILELYLLVCMRRL E-DKEKSSVNFITMKEY-KSVQDAYKTSDKYSHITVCFRAFEHLLDRE---
Xl 305 RLRNQDSKANIHLGVSVLELCLITAMKHLQDIYDGEFNFQMVHNEFOKFIQORKAHSVYNFERAVVIKAFEHLHQLE---
Hs 307 QLCMSDSKANIYHGLSVLEICLITAMKHLNDIYEPEFNFQMYNEFOKFEVQORKAHSVYNEEKPVVMKAFEHLQOLE---
Dm 329 SQFEGDDKIELEICGLSVLELCLITAIKHSQIYDRDSNFFEIT YARESKFAK-VSTTMOAVERSIVLKAFEHLRIAE---
Sc 369 KNQLSNLNTGRQLSLSLELAHLISAARVALRAKDGSFNENIAYAEYERMIKAINSRIP TVAPITNVGTGCTSTFSIDNTI

At 370 -----VICYAEENRGQ----SQTGEYRLQKLLISASLHQGRSHACCP RHPQVIGPLISVFCPLEIRQVSQGNVICM
Zm 371 -----LISFGDNRRW----NQALEYRPVKLLISSRELAESLKLNTTCPAVIQKLFDRERYM-----
Os 374 -----LISFADNKGR----NQALEYRPVKLLISSLELADSLNLNTTCPAVIQKLLDRERYM-----
Xl 382 -----LIKPMRGLSV----RTQKEYRLMKLLLDNTQIVEALOKYPNCP TDVRCWAMSSLS-----
Hs 384 -----LIKPMRRTSG----NSQREYQLMKLLLDNTQIMNALOKYPNCP TDVRCWATSSLSWL-----
Dm 405 -----LIMPLTGGAGGGVGVQKEFEMHKLALTYSCVHHCQRYQALPTEVAQWAQSSLI-----
Sc 449 KLWLKDPVKNVWENLVQLDFDFFTEKSAVGIRDNATAAFYASNYQFQGTMTIFDITRSYQMQLILQELRRIIPKSNMYYSWTQ

At 439 FISW
Zm ----
Os ----
Xl ----
Hs ----
Dm ----
Sc 529 L----

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## Supplemental Figure 2

Comparison of the *AtORC4* predicted protein sequence (At) with ORC4 proteins from rice (Os: accession BAC77041), maize (Zm: accession AAL10455), *Xenopus* (Xl: accession CAA76187), human (Hs: accession AAH14847), *Drosophila* (Dm: accession AAD39473) and budding yeast (Sc: accession NP\_015488).