

**Table S2 ADK amino acid sequences of different plant species for phylogenetic tree construction**

**Arabidopsis (*Arabidopsis thaliana*)**

>At5g50370

MATSSAASVDMEDIQTVDLMSELLRRMKCASKPDKRLVFIGPPGSGKGTQSPVIKDEFCL  
CHLSTGDMRLAAVAAKTPLGVKAKEAMDKGELVSDDLVVGIMDEAMNRPKCQKGFILD  
GFPRTVTQAEKLDEMLNRGAQIDKVLFNAIDDSVLEERITGRWIHPSSGRSYHTKFAPPK  
VPGVDDLTGEPLIQRKDDNADVLRSRLDAFHKTQPVVIDYYAKKENLVNIPAEKAPEEVTK  
KVKKKVVST

>AT5g63400

MATGGAAADLEDVQTVDLMSELLRRLKCSQKPDKRLIFIGPPGSGKGTQSPVKDEYCLC  
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RTVTQAEKLDEMLKRRGTEIDKVLFNAIDDAILEERITGRWIHPSSGRSYHTKFAPPKTPGV  
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KALS

>AT5g47840

MTGCVNISPPPVTLYRHRAASPSSFSLSGDALHSLYRHRVSRSPSIIAPKFQIVAAEKSEP  
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EIVVMMVKDRLSQTDSEQKGWLLDGYPRSASQATALKGFGFQPDFIVLEVPEEILIERVV  
GRLDPVTGKIYHLKYSPPETEEIAVRLTQRFDDTEEKAKLRLKTHNQNVDVLSMYDDIT  
IKIEGNRSKEEVFAQIDSSLSELLQERNTAPSSLLS

>AT5g35170

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KEFMNSGSLVPDEIVIAMVAGRLSREDAKEHGWLLDGPRSFAQAQSLDKLNVKPDIFILL  
DVPDEILIDRCVGRRLDPTVGKIYHIKNYPESDEIKARLVTTRPDDTEEKVKARLQIYKQNS  
EAIISAYSDVMVKIDANRPKEVVFEETQTLLSQIQLKRMKTDKASPVQDKWRGIPTRLNN  
IPHSRDIRAYFYEDVVLQATIRSIKDGNTLRVDINIPELNPEMDVYRIGTLMELVQALALSFA  
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VDEEDDMFILVAPQNAVNCIIDDLQAMTTAAGKRPVVLINPRLKDLPASSGIMQTMGRE  
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>AT3g01820

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LPVKSVVFALLSKRLEEGYARGETGFILHGIPRTRFQAETLDQIAQIDLVNLKCSEDHLVN  
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WQGLLAALHLKQVNLTTSQKLT

>AT2g39270

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EFIISLSKRLQAGKDKGESGYILDGFPRTVTQAEILEGVTNIDLVINLKLREEALLAKCLGR  
RICSEC GGNNVACIDIKGDDDTPRM YMPP LLPPP NCESKLISRADDTEEVVKERLRIYNK  
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>AT2g37250

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LEAGEARGESGFILDGFPRTRMRQAEILGDVTIDLVNLKLPEEVLDKCLGRRTCSQCGK  
GFNVAHINLKGENGRPGISMDPLLPHQCMSKLVTRADDTEEVVKARLRIYNETSQPLEE  
YYRTKGKLMFDLPGGIPESWPRLL EALRLDDYEEKQSVA A

**Tomato (*Solanum lycopersicum*)**

>SIADK1

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KSGSENGTMISNMIKEKIVPSEVTVKLLQRAIQENGNDKFILDGFPRNEENRAAFELVTGI  
EPEFVLFFDCPEAEMEKRLLGRNQGREDDNIETIKKRFNVYMESSLPVIEHYN SKGKVRKI  
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>SIADK2

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GHPMTQRHVYA QWLSKLM DVPYISMGS LVPQQLNPHYNKISSVVNEGKH VPEEVIFGLLS  
KRLEEGHCRGENGFILDGIPRTMLQAEILDKVVDIDL VLNLCVS KNDRSNGIYSTEDQL  
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>SIADK3

MALLS RIRAAKPLIRTESL RSYGSAAAQLVDYDYDDYEYEEFQNRSCVMEESEGSP R  
GVQWVIM GDPMAQRHVYA QWLSKLLGVPHISMGS LVRQELH PRSSLYKQIA DAVNQGKL  
VPEEVIFGLLSKRLEEGYCSGESGFILDGIPRSKIQAEILDKTVDIDL VLNLCRAEDLVSKKD  
KSTGLYPPLEFLRM GASGISTS RQPEGGHFRPSSIMEDVSRK NLHV HAEQVN PLEYYYRKQ  
RKLLDFQVAGGPGETWQGLA ALHLQHRNAVGSTQLTAGC

>SIADK4

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SGKG TQCLKIAETFGFDHIGAGD L RKE MHS DSENGAMIQKLMKEG SIAPSEVTVKLI KK  
AIESAENRKFLIDGFPRSEENRVAYERIIGAEPNFVLFDCPEEV MVKRV LNRNEGRVDDNE  
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>SIADK5

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QA EKLDVMLQNRGT KVDKVLNFA IDDAILEERITGRWIHPASGRSYHTKFAPPK VPGIDDV  
TGEPLIQRKDDTA AVLKS RLEAFHRQTEPVIDYYAKKG NVVNLPAEKPPQAVTAEVKKV  
S

>SIADK6

MVVWTRAVVRTWRCRPTNFSRAFSEKLPTSEP KGRNIQWVFLGCPGVKG TYAARLSKL  
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GF PRTIRQAEILEGVTDJDLV INKL REDALIAKCLGR RTCS EC GG NYNVACIDMKG DDGE  
TRMYMP PLLPPP HCETKLITRSD DTENV VKERL RIYHEMSKP VEDFYRQRGKL LEFDLPG  
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>SIADK7

MAASLEDVPS ELSMSEVL RRLCSSKPDKRL L I GPPGSGKGTQ SPIKDEYCLCHLATGDM  
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KLDEMLQKQGSKIDKVLFNFAIDDAILEERITGRWIHPSSGRSYHTKFQPPKVPGVDDVTGE  
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RAKEYMDKGQLVPNEIVVTMVKERLMCPDSQEKGWLLDGYPRLSQAVALKEFQPNLFIL  
LEVPEEILVERVVGRRLDPTGRIYHLKYSPPETDEIAARLTQRFDDTEEKVKLRLHTR  
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>SIADK9

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AGKSIDEVFESIKVIFSPGKDKNMPPSKHKCKCLIL

>SIADK10

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AKGEAGFILDGFPRTRQAEILTEVTDIDLVNLKPERVLVEKCLGRRICSECGKNFNVAS  
IDVAGENGAPRISMALNPPSQCISKLITRADDTEAIVKERLSIYWDKSQPVEDFYRSQGKL  
LEFDLPGGIPESWPKLLEVNLDEQEHKLSAAA

>SIADK11

MAMIASVTMFPHISTHNISSNQTFSPICTNNPNSFSSSSSIPISSNSIRLSSSIAYSEQLIAS  
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GSERFLQYWSYATQILFSQTNGLIEQQKFKVFCFGFLVHISTGDLLRAELSAGTDIGNKAKE  
YMNAGRLVPDEIVTAMVTRLSKEDAKEKGWLLDGYPRTLAQAESLERLNIRPDIYIVLD  
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AILPVYSDIMNKIDGNRGKDSVFAIDSLLSRVQKEEQDARKSEESAISSTRADMASLSKD  
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Potato (*Solanum tuberosum*)

>Sotub04g013920

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>Sotub09g006620

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S

>Sotub05g016010

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KLDEM LQKQGAKIDKVLNFAIDDAILEERITGRWIHPSSGRSYHTKFQPPK VPGVDDVTGE  
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>Sotub01g028550

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AA FELVTGIEPEFVLFFDCPEAEMEKRL GRNQGREDDNIETIRKRFNVYMESSLPVIEYY  
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>Sotub08g022760

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>Sotub11g015570

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FILLEVPEEILVERVVGRR LD PITGKIYHLKYSPPETEEIASRVTQRFDDTEEKACIVKLRLQ  
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>Sotub06g024300

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>Sotub12g007490

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Rice (*Oryza sativa*)

>Os12t0236400

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>Os08t0118900

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TM

>Os08t0109300

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>Os07t0412400

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YNDMSQPVEGFYRQQKLLEFDLPGGIPESWPKLLHVLNLEDQEEMKLATA