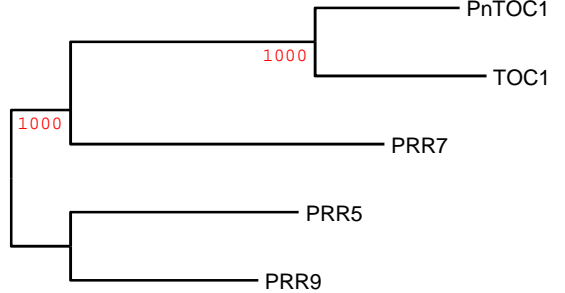


Supplementary figure 1

A

PnTOC1	1:-----	1
PRR5	1:MQQTWERQPIILLDFISNFNTLSTVRSWSVRHFLSIITVKTFFARFFLIDFFSFFHYRNRK	60
PRR7	1:-----	1
PRR9	1:-----	1
TOC1	1:-----	1
PnTOC1	1:-----M-NVYVYCLI--VLR-----TAM-M-EKN-----	19
PRR5	61:VLFALFSSFISLNTILI-CFVTVSLSELSSSS--SLIF-L-GFSLSVCVIMTSSS	114
PRR7	1:-----MNAEEGEGSRYFDFPKRTGETFDR--VESRTEK	33
PRR9	1:-----M--G-E--I-VV--LSS-D	10
TOC1	1:-----M-L--NG-----	5
PnTOC1	20:---ETV--KFG---D---G-----F---I--D---RSRVPLILCND	43
PRR5	115:EVVIVVVKAF---EA--GGGLSRRIRKMDAGVDGLVWERFELKIALRVLLVE-D	167
PRR7	34:HSEEE-KINGITMDVRNGSSGL---CIFLSQQTANT-V-CNERFLHVRTIRVLLVEND	87
PRR9	11:DGME-I-IR-----N-----RVKSSE--V--VQNKYLFKTVLRVLLVEE	46
TOC1	6:---EC--KFG---D---G-----F---I--D---RSRVPLILCND	28
PnTOC1	44:K-SSEEDF-TLL-CKCSYQVTVRSFRQV---DANNAEQFDIDILFELVIL-ELFMSK	94
PRR5	168:DSIR-QITALLRK-CSYFVAVPE--DGLK-AWEMKGRFESVILILTEVDFPSI-SQ	219
PRR7	89:CFRVI-TALLRNC-SYEV-VKASND-ELAKVLEELNHFID-VLITE-VDFPLS-S	138
PRR9	47:SR-ETITALLR-CKHWVVS-DGLA-KWVLEKESMNDLITLDFPSI-SQ	97
TOC1	29:TSIG-DF-FLSF-CSYFVAVKSARQV---DANNAEQFDIDILFELVIL-ELFMSK	79
PnTOC1	95:LRILKVIYMRDKE-IR---RFEVIMSSQDFVIVKCLK-L-GAADYLVKFLRNE-EL	146
PRR5	270:YALL-TLIMEHDIC---NIFVIMSSQDFVIVKCLK-L-GAADYLVKFLRNE-EL	271
PRR7	139:IGLL-CKI---LNHKSRRNIFVIMSSQDFVIVKCLK-L-GAADYLVKFLRNE-EL	191
PRR9	98:FALL-ALVMEHACK---NIFVIMSSQDFVIVKCLK-L-GAADYLVKFLRNE-EL	149
TOC1	80:MRMLRYITRDKL-IR---RFEVIMSSQDFVIVKCLK-L-GAADYLVKFLRNE-EL	131
PnTOC1	147:NLWTFVRRRMRMGLA---E---ENIL-NYDFDLVV-SDP---SDANNSIT	187
PRR5	272:NLWQVWRRTIS---L-----AF-----D-----SEF---WNE--S	294
PRR7	192:ELWQVWRK---CQSSGSGSSTGHTQTE--VRSKS---IKKEDDSGSEEDNNSIT	242
PRR9	150:NLWQVWRK---R---D-----DE-T-AHQ---K---E---FA-----	174
TOC1	132:NLWTFVRRRMRMGLA---E---E---ENML-SYDFDLVVG-SDP---SDANNSIT	172
PnTOC1	188:LFSD-DTDEK---SRKSLNET---GPSTQED-E---TNAI-T-NA-ASPE-----	225
PRR5	295:VG-----CQKA-EGASANN-S-N-GKR-D--D-H-VVSGNGGD-AQSSC-TRF-E-	332
PRR7	243:GLNASDGSDDSGAQSSWTKRAVDVDSFRAVSLWDR-VDSTCAQVHNSPEFESNQLVA	301
PRR9	175:--S-----QHNL-EDT--DET-EDSRYSHS--D---C-GSQAQAI--NYNGHN-K-	209
TOC1	173:LFSD-DTDDRS--LRS-TNQR-GNL---SHQENE-NSDAPFVHARDGGLGADGT-AT-	221
PnTOC1	226:--TLVIGSF-E-FLP--DVVSS-E-R---RT--GRF--SF--FK--SE--E--E--G--E	262
PRR5	353:--M--E--E--E--E--E--E--E--E--E--E--E--E--E--E--E--E--E--E	366
PRR7	302:EPF-EKETQ-HDKRF-EDVMTG-DELEISIRRNCDLA-LE--EDEF-ELRITGMRQD	363
PRR9	210:--L-M---ENG--KSV--D--E--D--E--E--E--E--E--E--E--E--E--E--E	236
TOC1	222:--SSLAVIAIEFF--L--HLASSHHEFM-K-RNSNFAQS-SAFK-SRL-E--E--G--E	266
PnTOC1	263:SS-AFETVYV---SN---MPSK-NEQ-----GTV-----	283
PRR5	367:LSKQAEALDFMGASER---RTGR--RNREE--S---A-QYESRIE-E	403
PRR7	354:N-S--E-E--SS--KRWKRVGKGLDLSSESFSKQMHEDGSSFKAMSSHLQDNRE	405
PRR9	237:ID-KRFD-SYDK-S-----RDE-C---G--F--E-----	258
TOC1	267:SS-AFETVYV---SV---L-RT--NGQDF--F---L-D-G-NGSLH---H-R--R-	299
PnTOC1	284:-----R-K-NI--THD---S-----R-I-NEGGNV--D-IET	303
PRR5	404:-----D-L-SR-R-FNA-SE--N--GS-S--GERF--S--LH-----PSSA	431
PRR7	406:EAFNHKLTLTINEASIKISELMHVE-HSSRHRGKDDGLVRRDR-NVLR-EGCSA	462
PRR9	259:-----G-L-SK-RS-CVSFE--N--CD-E--SKW---KLSL-----SDASA	288
TOC1	300:-----G--LAEK-QVAV-EGINNTCA-R-RATF--KSTVLRN-G-QDFPLVNG	341
PnTOC1	304:PE-----H---G---FG--DAI-GN---H-SG-DGYPS-SNSI-----EP--SL	331
PRR5	432:FRVYVHR--E-LQTQCSAS-E-VV-TDQRNVAASQDNIVLMNQYNTS-EP-PE--NA	480
PRR7	463:FRVY-N-FAANAN--ISGGN-LGSTSLQDN-N-ED--LHR--FEA--AVDCHM--S	506
PRR9	289:FRVY-F-----EESK-A-----E-KAVV---A--LE-ESHGEEFKTIT--E	316
TOC1	342:NGSHHLRGA-NEKQVVA-SEGI-NNTKQ-AHRSKGTQYHSQGETLQNGASVH--SL	395
PnTOC1	332:SM-ESK---TPPELSL-----EFP-C-QMDEF--KV-TN-----ESHHDIS--GVA	370
PRR5	481:F---RRND--SFYI-GADF-EFFSNLNSWFGG--SYPTF-IPINNIQFRDENT--	528
PRR7	507:MNE-----S-LFH-NRSHVG---SNMFD-SSITENN-AFT-KPQAFVSSAGSS	550
PRR9	319:SH-EKLRKV---SDQG--SA-TIS-SN-CE-NIG-S-S-----SV-S--FRN-C--	352
TOC1	396:---EP-SR--LPTS--M-ESH-GNY--QEGM-NIE--QVAMNRSKSS-QVDGSEFA	440
PnTOC1	371:HAAYVFPFYIYR-IMNQVMP--SQMYHQRLNLP-LHNHANFAMLYYS-HLHCFPF	425
PRR5	529:---AITSAMAFAS-----LSPFSS-VSPH-EYSS-MFH-----E-F-NSRPEGLQD	567
PRR7	551:VHSSFC-----FLPDCDH-N-NHASY-----NLV-HVAERKLL--F--E-CGSS	588
PRR9	353:-----VYQ-----S-T-VTNGQCSF-E-----EVE-S-N	372
TOC1	441:FN--VY--PYMHG-VMNQVMMQ-SAA-----MM-----EYGHQIHCDF	475
PnTOC1	426:HMF---G-MGSF--EFT--EM--N-----MCLQ-F--E--E--E--E--E--E--E	455
PRR5	568:RDC---SMDVDER--RWS--SA--EHS--A--I-----ENHIDQLI--EK-KN	601
PRR7	589:N-VYNETIEGNNITVNSVNGSVSGS-HGSNGFYGSSNGMAG--NMGSDNGAG-RNG	644
PRR9	373:R-EKAASKEVE---AG--SGSTNE--G--IA-----R-CSS-ST--EKPE	404
TOC1	476:NHEN--G-MTGY--FVYH-FMNSLQCH-SQMSLQ--N-----E-SMVHH--SWS-	515
PnTOC1	456:Y--E--SS--E--DCH-MGRIDH---EAAIKFRKRRRCFDR-RLRYVNRFLAEFR	504
PRR5	602:ED-YSL--EYKIQ-QSL-Q---EAAIKFRKRRRCFDR-RLRYVNRFLAEFR	650
PRR7	645:NGDES-GSGS--SGSGLNLRNKISCEAAIKFRKRRRCFDR-RLRYVNRFLAEFR	701
PRR9	405:EE--S-----A-PCRW-SRQC---EAAIKFRKRRRCFDR-RLRYVNRFLAEFR	449
TOC1	516:FA--SNFP--ENE-VRVNKIDR---EAAIKFRKRRRCFDR-RLRYVNRFLAEFR	565
PnTOC1	505:FRVGGQVRFVNG-VVDL-NGHFAS-DEDEDEDDDDQITTLVS--S-PEDDTSISLL	557
PRR5	651:FRVGGQVRFV---VQST-QAF-----	667
PRR7	702:FRVGGQVRFVTA--TDDNDIKNIE-E-S-----	727
PRR9	450:FRVGGQVRFV---VNS--DASTPE-----	468
TOC1	566:FRVGGQVRFVNGVN-VDL-NGQDFADYQDEEEEEEEEEEE--ENRDSFQDD-A-LGT	618

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Supplementary figure 2

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FKF1 1:AREHAIG-EATGKRKRK---RVEEHEVCNDG--TE--CVEE---KLFLEV-- 44
LKP2 11:-----MQLNQ-VHSDSDLSGGD--FYAE--D---GRF---G 27
ZTL 1:-----MVGSGDLSADASSLAD---DEEGGLF---PFG 29
OsFKF1 1:MF-DAGDRGGGGVVAVRKM--KICEEEEEEG-M-EY---DEEEL--EVGVVWRPFGG 50
PnFKF1 1:M--EES-EEEE-ELWN-RGR--RL---KFRAGNDRMVEL---EAESEKEDRKL-REHG- 44

FKF1 45:--GMF--YY-F---MTPF-SFDVSDALEPDMFLIYVNVFVEVF--TGYRADEVLGRNCRFL 94
LKP2 28:DNCAIFFPVGS-LPGLTFCGFLVSDALEPDMFLIYVNVFVEVT--GYRAEVT---GF-- 80
ZTL 30:--CFIPFVGNLLH--LPCGFLVSDALEPDMFLIYVNVFVEVMT--GYRAEVLGRNCRFL 85
OsFKF1 51:LAC-ED-EAA--AWEGRAAAVSDALEPDMFLIYVNVFVEFAA--TGYRADEVLGRNCRFL 105
PnFKF1 45:G-S-FFLY-F--ILADPSS--LVSDALEPDMFLIYVNVFVEF--ISGYRADEVLGRNCRFL 97

FKF1 95:QRD-FRAQRHPLVDFVWVEIIRRCLEEGIEFQCELLNFRKDGPIVNLRLIETRD 153
LKP2 81:----F-TERRHPLVDSITVARNKCLLEIEFQCELLNFRKDGSPINRLIPIRED 134
ZTL 86:CRGPF-ARRRHLVDSMIVVSEIRRCLEEGIEFQCELLNFRKDGSPINRLIPIRED 144
OsFKF1 106:QRD-FRAQRHPLVDFVWVEIIRRCLEEGIEFQCELLNFRKDGPIVNLRLIPIRED 164
PnFKF1 98:QRD-FRAQRHPLVDFVWVEIIRRCLEEGIEFQCELLNFRKDGPIVNLRLIPIRED 156

FKF1 154:ETIIRVIGIQVSEITIDLDVSYFV---RHKQ-QLDQTS-ECLFSSP--RFK---E 203
LKP2 135:E-ITIRVIGQLLFDPAKIDIGSPD-LSA--KEIPR-ISR-S-FSALPKC-ERNVS-R-G- 184
ZTL 149:ETIIRVIGIQVSEITIDLDVSYFV---RHKQ-QLDQTS-ECLFSSP--RFK---E 216
OsFKF1 169:ETIIRVIGIQVSEITIDLDVSYFV---RHKQ-QLDQTS-ECLFSSP--RFK---E 216
PnFKF1 157:ETIIRVIGIQVSEITIDLDVSYFV---RHKQ-QLDQTS-ECLFSSP--RFK---E 202

FKF1 204:--H---MEDFCGLQLSDEVLHNLSRLTFR-DVASIGSA-CRRLRQLTNEVVRMVC 256
LKP2 185:L-----CGIFLSDDEVLNKLSLTLTFCGASV-CVCRRLNELTKNDLWRMVC 233
ZTL 194:M-----CGIFLSDDEVLNKLSLTLTFCGASV-CVCRRLNELTKNDLWRMVC 242
OsFKF1 219:E--Y-----CGLQLSDEVLHNLSRLTFR-DVASIGSA-CRRLRQLTNEVVRMVC 268
PnFKF1 203:QLQCHQKEMCGIFLSDDEVLNKLSLTLTFCGASV-CVCRRLNELTKNDLWRMVC 260

FKF1 257:QNAWGRVETD-LELMTK-R-IRNGRLARELTILEAVCRKRFV-VSILQVPSRCNFSAC 311
LKP2 234:QNAWGRVETD-LELMTK-R-IRNGRLARELTILEAVCRKRFV-VSILQVPSRCNFSAC 290
ZTL 243:QNAWGRVETD-LELMTK-R-IRNGRLARELTILEAVCRKRFV-VSILQVPSRCNFSAC 299
OsFKF1 269:QNAWGRVETD-LELMTK-R-IRNGRLARELTILEAVCRKRFV-VSILQVPSRCNFSAC 323
PnFKF1 261:QNAWGRVETD-LELMTK-R-IRNGRLARELTILEAVCRKRFV-VSILQVPSRCNFSAC 315

FKF1 312:AVGNRLVLFGGEGVNMGMEDDTFVNLDAEC-PEWPRV-VSSP-FGRWHTLSC-LNG 367
LKP2 291:AVGNRLVLFGGEGVNMGMEDDTFVNLDAEC-PEWPRV-VSSP-FGRWHTLSC-LNG 346
ZTL 300:AVGNRLVLFGGEGVNMGMEDDTFVNLDAEC-PEWPRV-VSSP-FGRWHTLSC-LNG 355
OsFKF1 324:AVGNRLVLFGGEGVNMGMEDDTFVNLDAEC-PEWPRV-VSSP-FGRWHTLSC-LNG 379
PnFKF1 316:AVGNRLVLFGGEGVNMGMEDDTFVNLDAEC-PEWPRV-VSSP-FGRWHTLSC-LNG 371

FKF1 368:SNLVVFGGCGRQGLLNDVFLDLDAQETWREVS-GSTH-ELFRSWHSSCTIDGSKLVVS 425
LKP2 347:SNLVVFGGCGRQGLLNDVFLDLDAQETWREVS-GSTH-ELFRSWHSSCTIDGSKLVVS 404
ZTL 356:SNLVVFGGCGRQGLLNDVFLDLDAQETWREVS-GSTH-ELFRSWHSSCTIDGSKLVVS 413
OsFKF1 380:SNLVVFGGCGRQGLLNDVFLDLDAQETWREVS-GSTH-ELFRSWHSSCTIDGSKLVVS 437
PnFKF1 372:SNLVVFGGCGRQGLLNDVFLDLDAQETWREVS-GSTH-ELFRSWHSSCTIDGSKLVVS 429

FKF1 426:GGCTDQGVLLSDTFLDLTDRFHWREIPTSNAFPSRLGHTLSVYGRKILMFGGLAKSG 485
LKP2 405:GGCTDQGVLLSDTFLDLTDRFHWREIPTSNAFPSRLGHTLSVYGRKILMFGGLAKSG 464
ZTL 414:GGCTDQGVLLSDTFLDLTDRFHWREIPTSNAFPSRLGHTLSVYGRKILMFGGLAKSG 473
OsFKF1 438:GGCTDQGVLLSDTFLDLTDRFHWREIPTSNAFPSRLGHTLSVYGRKILMFGGLAKSG 497
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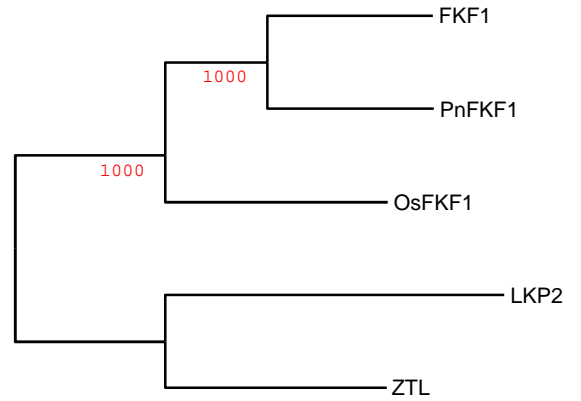
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ZTL 474:HLRER-SEAYVTDLEDEE-ERWRCLECGA--FG---VV-VFR-FRLDHVAVSMFC 527
OsFKF1 498:HLRER-SEAYVTDLEDEE-ERWRCLECGA--FG---VV-VFR-FRLDHVAVSMFC 545
PnFKF1 490:HLRER-SEAYVTDLEDEE-ERWRCLECGA--FG---VV-VFR-FRLDHVAVSMFC 543

FKF1 535:RILH-IFGGSAGLHSPQLFLDFEERFNRILNVGQPPRFARWGHSTCVVGGTRVIVL 593
LKP2 517:RILH-IFGGSAGLHSPQLFLDFEERFNRILNVGQPPRFARWGHSTCVVGGTRVIVL 575
ZTL 528:RILH-IFGGSAGLHSPQLFLDFEERFNRILNVGQPPRFARWGHSTCVVGGTRVIVL 586
OsFKF1 546:RILH-IFGGSAGLHSPQLFLDFEERFNRILNVGQPPRFARWGHSTCVVGGTRVIVL 604
PnFKF1 544:RILH-IFGGSAGLHSPQLFLDFEERFNRILNVGQPPRFARWGHSTCVVGGTRVIVL 602

FKF1 594:EGHTGEWII---NELHELCLA-----SRLQSDL 619
LKP2 576:EGHTGEWII---NELHELCLA-----SRLQSDL 601
ZTL 587:EGHTGEWII---NELHELCLA-----SRLQSDL 626
OsFKF1 605:EGHTGEWII---NELHELCLA-----SRLQSDL 630
PnFKF1 603:EGHTGEWII---NELHELCLA-----SRLQSDL 625

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B



Supplementary figure 3

A

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CDF1 1: MLETRDFAILKFGM-KD-FF-FTV--L-E--V-AD-----E-E-----EE 30
SiCDF1 1: M-SEVRDFAILKFGKTI--GMTQQETNC-----VYLHDD-HITSSPESIDDDK 44
CDF2 1: MAD---FAIKLFGK-TDLEF-----ELGVVDSSSSYGFLEFQIFVRE--S--D 42
CDF3 1: MMEIRDFAILKFGM-KD-FF-ESV--F-E-BAVTV-----E-D-----EE 34
SiCDF3 1: MFCDS---ERLFGK-R-L---FVVV--SGVSGLSGSDGVI--YDGNRNGS-D----DR 44
PnCDF2 1: MFEATDFAILKFGM-TDQFFDAFFFFFFFFEHD-VDFGG-AA--S--GAN-S--L--A-RD 48

CDF1 31: K-----N--QN-----R-----T----- 36
SiCDF1 45: I--I--LE-G-----EFT-QS--KDDDELVDFTADSS-I-EP--ETSSG---- 76
CDF2 43: S-CT---SDDDEEMGDSGL-G--REED--D--V--GDGG-GESE-IDKKEEKDSE 84
CDF3 35: D-DWS-----GG--DDKSFETV---IPELS-----D-KNNN--N 59
SiCDF3 45: ---CLE-GKASSVKEDESEYEKQAEK--DNIT-----GELSEAKS-E-EGDQ-NQ 88
PnCDF2 49: SSSCEAEFDFEQQKRNEN-G--E-RMDGSKREDEGTVMGE-GIMD-QTVD--EIR--- 97

CDF1 97: ---L-----L-----FQSEK-----D-----K--T- 46
SiCDF1 77: -I--S-D-DIKM-Q-DA-D--R-----E--T-LSS-KSIFEF-DS-SE-E---KA- 106
CDF2 85: CQEFSLRNES-N-DVI---TITSGI-FEK-TE-TTKAANTNE--ESGTCASQEG---K 130
CDF3 60: CNDNSFNNSK-P-ETL---DREATSDECISSD---IPEINQQTTPD---GK--T- 102
SiCDF3 89: MIEESE-NPKTSE-SESSPKSS---TEEDFQAVKS-SMT-ENE---FTNVINSEQNN- 136
PnCDF2 98: --D-GLKA-F---HVD--EDC-GS--EIST--T-----DEE-E-GRM-S-N-GKD-RT 131

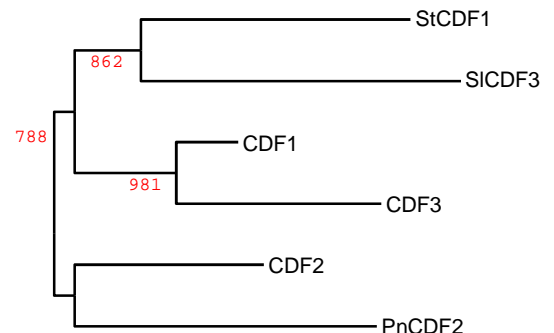
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CDF2 131: LKKPDRILECFRCNSMETRFICYNNY--NVNQERHCFRCQRYWTAGGTM--RVFVGSRR 188
CDF3 103: LKKPDRILECFRCNSMETRFICYNNY--NVNQERHCFRCQRYWTAGGTM--RVFVGSRR 160
SiCDF3 137: LKKPDRILECFRCNSMETRFICYNNY--NVNQERHCFRCQRYWTAGGTM--RVFVGSRR 194
PnCDF2 132: LKKPDRILECFRCNSMETRFICYNNY--NVNQERHCFRCQRYWTAGGTM--RVFVGSRR 189

CDF1 105: KRNNSPTSHVH--RVTI--SE--ING-----F-V-----LSP----SQ- 132
SiCDF1 165: KNR-SSSISVH--P-----LQGRVEAAAHGMH-L-FALRT--NGKVLKESGSKPE- 207
CDF2 189: KNSSPA--SHVNRHVS-IT-SA-E-A--MQKV-ARTLQ--H--P--NGANL-- 226
CDF3 161: KNSSS--SHVH--HITI--SEA-LEA--A-----R--LDF-G-LQ-ANIRVLESP-- 198
SiCDF3 195: KRNLA--SHVH--NISTI--PEGLLA--GIESP-NG--LIHHLKFE--NGHILSESP--DL 242
PnCDF2 190: KNSA--SHVH--HINA VKSFQ--NAC--VDHF-ERI--QH-H-ALKANG--RV-- 229

CDF1 221: -KQRNG-----SVLVFKTLRIDDFNE--AAKSSIWITLGI--KNEV-----MNGE 261
SiCDF1 358: NR-E---GERCVLDFKTLRIDDFNE--AAKSSIWITLGI--VIRVQE----- 394
CDF2 371: -GREKSPER--CLWVFKTLRIDDFNE--AAKSSIWITLGI--KRDENA-DT-FG-A--F 418
CDF3 367: -KQKAG-----CVLVFKTLRIDDFNE--AAKSSIWITLGI--KNEAMC-KA-GG-MFKCF 413
SiCDF3 413: --RY--SEG--SILVFKTLRIDDFNE--AAKSSIWITLGI--KYDS--TNR---GE-F-F 455
PnCDF2 403: -FKDS--NEEK--CLWVFKTLRIDDFNE--AAKSSIWITLGI--QHD-RV-DSIRGGAFKA 453

CDF1 262: GS--KVKV-LSN--FEE--TETSIV--LC--ANPAALSRSL--NFH--QW- 298
SiCDF1 395: ---KVKV-LSN--FEE--TETSIV--LC--ANPAALSRSL--NFH--QW- 395
CDF2 419: RSST--KKSLSSEG--R-LGRRPE--LQANPAALSRSL--NFH--ESS 457
CDF3 414: DH--KT--RMYNNDFAE-N-SFV--LS--ANPAALSRSL--SHNFH--EQI- 448
SiCDF3 456: KALQPKSNDKHN--KANTF---FV--LHINPAALSRSL--TF--CGA- 492
PnCDF2 454: ---KMDDE--NSHASKNC-----RVLLENPAALSRSL--NFH--ESS 488
    
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B



Supplementary figure 4

