

Supplementary Information

Figure S1. Disorder prediction by CSpritz [1] algorithm of human Drosha showing two different regions: a N-terminal disordered region and a C-terminal structured region comprising the two RNase domains and the dsRNA binding domain.

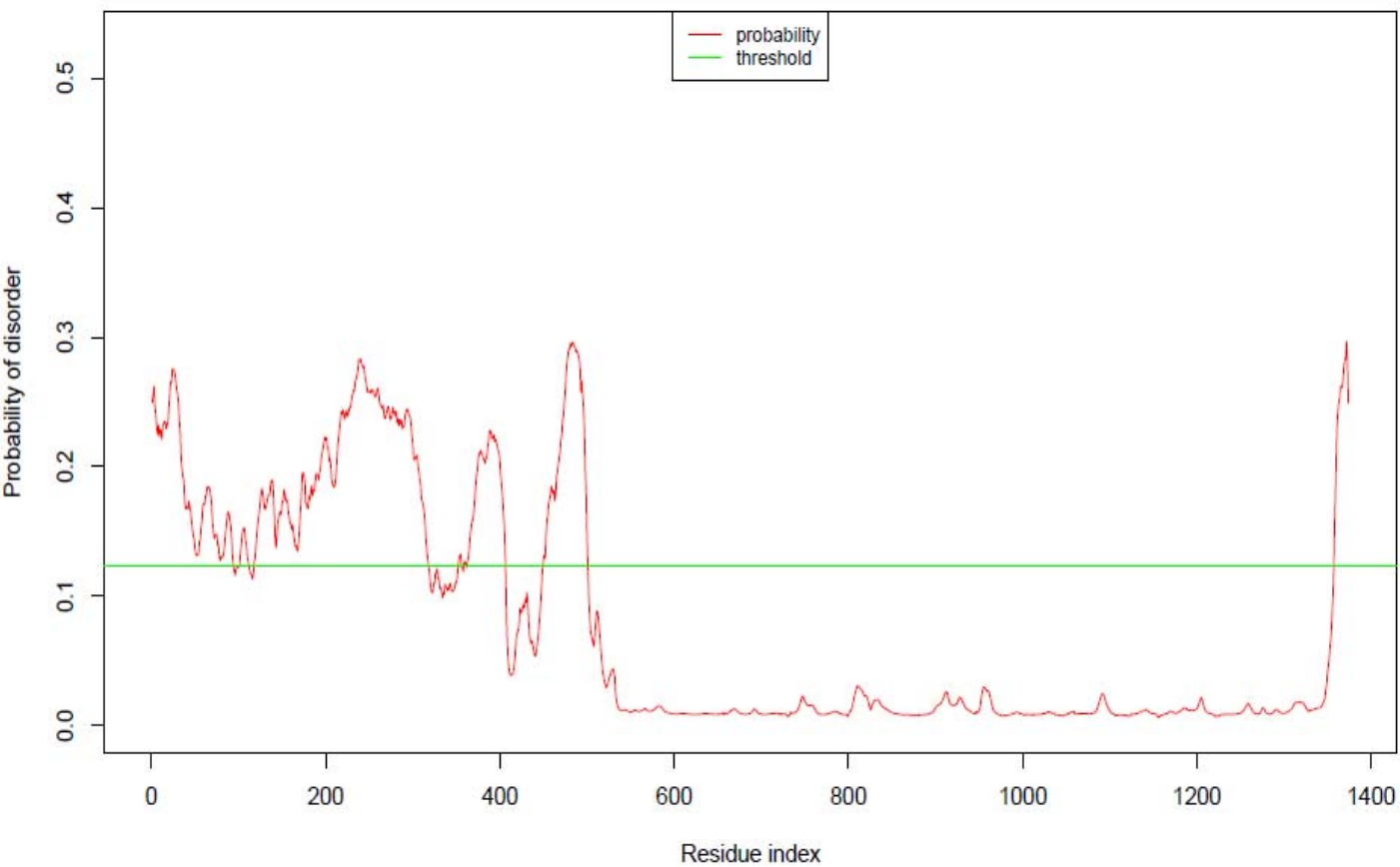


Figure S2. Alignment of Dicer proteins from several eukaryotic organisms constructed by PRALINE software [2]. Color codes refer to the conservation of a particular residue in each protein position.

Results colour-coded for amino acid conservation

The current colourscheme of the alignment is for amino acid conservation. The conservation scoring is performed by PRALINE. The scoring scheme works from 0 for the least conserved alignment position, up to 10 for the most conserved alignment position. The colour assignments are:

Unconserved 0 1 2 3 4 5 6 7 8 9 10 Conserved

	..... 10	..... 20	..... 30	..... 40	..... 50
Homo_sapiens	-	-	-	-	-
Bos_taurus	-	-	-	-	-
Mus_musculus	-	-	-	-	-
Gallus_gallus	-	-	-	-	-
Xenopus_tropica	-	-	-	-	-
Danio_rerio	-	-	-	-	-
Caenorhabditis	-	-	-	-	-
Drosophila_mela	-	-	-	-	-
Oryza_sativa_Ja	MAGGGGVGGG	AGEHA-AAAY	WYDACEGAS	LLCGIDFAAS	ADFDPGLIPA
Arabidopsis_tha	MV---MEDE	PREATIKPSY	WLDACED---	ISCDLIDDLV	SEFDPSSVAV
Neurospora_cras	-	-	-	-	-
Chaetomium_glob	-	-	-	-	-
Coccidioides_im	-	-	-	-	-
Aspergillus_nig	-	-	-	-	-
Aspergillus_fum	-	-	-	-	-
Aspergillus_cla	-	-	-	-	-
Phaeosphaeria_n	-	-	-	-	-
Schizosaccharom	-	-	-	-	-
Emericella_nidu	-	-	-	-	-
Cryphonectria_p	-	-	-	-	-
Neosartorya_fis	-	-	-	-	-
Candida_albican	-	-	-	-	-
Kluyveromyces_l	-	-	-	-	-
Schizosaccharom	-	-	-	-	-
Consistency	0000000000	0000000000	0000000000	0000000000	0000000000
	..... 60	..... 70	..... 80	..... 90	..... 100
Homo_sapiens	-	-	-	-	-
Bos_taurus	-	-	-	-	-
Mus_musculus	-	-	-	-	-
Gallus_gallus	-	-	-	-	-
Xenopus_tropica	-	-	-	-	-
Danio_rerio	-	-	-	-	-
Caenorhabditis	-	-	-	-	-
Drosophila_mela	-	-	-	-	-
Oryza_sativa_Ja	MDTGADDG--	--FVAEIDRI	LESINAESSP	APPPPPPPPL	PEPVPVAPPE
Arabidopsis_tha	NESTDENGVI	NDFFGGIDHI	LDSIKNGG--	-----	GLPN
Neurospora_cras	-	-	-	-	-
Chaetomium_glob	-	-	-	-	-
Coccidioides_im	-	-	-	-	-
Aspergillus_nig	-	-	-	-	-
Aspergillus_fum	-	-	-	-	-
Aspergillus_cla	-	-	-	-	-
Phaeosphaeria_n	-	-	-	-	-
Schizosaccharom	-	-	-	-	-
Emericella_nidu	-	-	-	-	-
Cryphonectria_p	-	-	-	-	-
Neosartorya_fis	-	-	-	-	-
Candida_albican	-	-	-	-	-
Kluyveromyces_l	-	-	-	-	-
Schizosaccharom	-	-	-	-	-
Consistency	0000000000	0000000000	0000000000	0000000000	0000000000
	..... 110	..... 120	..... 130	..... 140	..... 150
Homo_sapiens	-	-	-	-	-
Bos_taurus	-	-	-	-	-
Mus_musculus	-	-	-	-	-
Gallus_gallus	-	-	-	-	-
Xenopus_tropica	-	-	-	-	-
Danio_rerio	-	-	-	-	-
Caenorhabditis	-	-	-	-	-
Drosophila_mela	-	-	-	-	-
Oryza_sativa_Ja	LPIQEKQLQV	ASAPVANNAV	AVVGVVQRS-	-KGVVARKEP	RRESHGCAAN
Arabidopsis_tha	NGVSDTNSQI	NEVTVTPQVI	AKETVKENGL	QKNGGKRDEF	SKEEGDKDRK

Neurospora_cras	-----	-----	-----	-----	MAVAT	RI--	PFIPPE
Chaetomium_glob	-----	-----	-----	-----	MNAEM	REGSSALPQL	
Coccidioides_im	-----	-----	-----	-----			ME
Aspergillus_nig	-----	-----	-----	-----	MPSAH		AFDMR
Aspergillus_fum	-----	-----	-----	-----	MAEQI		SL-VD
Aspergillus_cla	-----	-----	-----	-----			
Phaeosphaeria_n	-----	-----	-----	-----			
Schizosaccharom	-----	-----	-----	-----			
Emericella_nidu	-----	-----	-----	-----			
Cryphonectria_p	-----	-----	-----	-----			
Neosartorya_fis	-----	-----	-----	-----			
Candida_albican	-----	MI	IFATPKVC	KGKT		RILYFYLSK	LFFYVYFFFL
Kluyveromyces_l	-----	-----	-----	-----			MFCK
Schizosaccharom	-----	MI	VI	-----		RDSSDYSDS	EVDLPST---
Consistency	0000000000	0000000000	0000000000	0000000000	0000000000	0000000000	0000000000

	.....	160	.....	170	.....	180	.....	190	.....	200
Homo_sapiens	-----		-----		-----		-----		-----	
Bos_taurus	-----		-----		-----		-----		-----	
Mus_musculus	-----		-----		-----		-----		-----	
Gallus_gallus	-----		-----		-----		-----		-----	
Xenopus_tropica	-----		-----		-----		-----		-----	
Danio_rerio	-----		-----		-----		-----		-----	
Caenorhabditis_	-----		-----		-----		-----		-----	
Drosophila_mela	-----		-----		-----		-----		-----	
Oryza_sativa_Ja	GGGGGEWRDG	KRPRLASGGV	GGPRQEWRRR	PMLPPPPSRG	WDD--	RRGRR				
Arabidopsis_tha	RARVCSYQSE	RSNLSGRGHV	NNSREGDR--	FMNRKRTRN	WDEAGNNKKK					
Neurospora_cras	ATSQIIGGDE	DLIDLSE-D	VVSDNDDR--	-----	GNA	SDV--	ESEDG			
Chaetomium_glob	QAHSPVADNI	DLMDIDEPAS	NGSFEEESPAT	PFDDDAFVNA	GDT--	DQEDD				
Coccidioides_im	EPQRINDEPN	D-----	SVVPD-----	-----	PAGPS	EPA--	ESDSE			
Aspergillus_nig	ITSDIYKPDQ	HL-PMETMKV	CAVT-----	-----	MTE	DLQ--	EDDGS			
Aspergillus_fum	VSSSVSLRGE	DSSNVALLRD	VFLPDVAAS-	-----	DPAESSV	DVQ--	DEHSS			
Aspergillus_cla	MSSDLISQAE	SISNIEILRA	LFITDTHTTV	GDVAVPSAEP	GVE--	HDQIS				
Phaeosphaeria_n	-----	-----	-----	-----	MTWAG	DVE--	EQDDY			
Schizosaccharom	-----	-----	-----	-----						
Emericella_nidu	-----	-----	-----	-----						
Cryphonectria_p	-----	-----	-----	-----						
Neosartorya_fis	-----	-----	-----	-----						
Candida_albican	IYYSIQKHSY	INSTMPIIPL	EDDEDDD--	-----	WIL	EDEDDPEFQA				
Kluyveromyces_l	QKHKTRKKPA	VNALMADLSD	LSDDDL--	-----	SLL	ENN--	VNRSV			
Schizosaccharom	EVNGERGNV	PTSVL-----	-----	-----	SLL	NSNPALRQPN				
Consistency	0000000000	0000100000	0000000000	0000000000	0000000000	0010001000				

	.....	210	.....	220	.....	230	.....	240	.....	250
Homo_sapiens	-----		-----		-----		-----		-----	
Bos_taurus	-----		-----		-----		-----		-----	
Mus_musculus	-----		-----		-----		-----		-----	
Gallus_gallus	-----		-----		-----		-----		-----	
Xenopus_tropica	-----		-----		-----		-----		-----	
Danio_rerio	-----		-----		-----		-----		-----	
Caenorhabditis_	-----		-----		-----		-----		-----	
Drosophila_mela	-----		-----		-----		-----		-----	
Oryza_sativa_Ja	DFDRVRKHEH	HRREARGFWE	RDRG--	GKMV	FRSGTWEQES	DREAKRARTQ				
Arabidopsis_tha	RECNNYRRDG	RDREVRGYWE	RDKVGSNELV	YRSGTWEADH	ERDVKKVSGG					
Neurospora_cras	--VKRWTVN	PEPKPKKISA	KKLA--	DTAA	FNSWIEEHQE	TLA--	RDQRKA			
Chaetomium_glob	DPDTKKWIVN	DSRKPRKISE	KKRA--	DHAA	FDVWIEENQQ	DLS--	KGLDKF			
Coccidioides_im	DEHTHP----	-----	NNADEPS	IRRK--	QNLR	FKELLSARAE	EITAEDIKEV			
Aspergillus_nig	SDESDN--DER	EDHSKTGVSQ	QRIT--	QNAK	FKALLAQRAD	TGPIHD--	VSV			
Aspergillus_fum	DDSDNE--NE	VFPKQNDFSQ	RRRI--	QNAQ	FEALLSKCTD	ADSNEAFDRA				
Aspergillus_cla	PGESDEEIEE	NISDQNNSSS	QKRL--	QNAQ	FEALLTRRAE	DTSNENIDRV				
Phaeosphaeria_n	FSCSD-----	-----	VSTSGDR	RKRA--	PQTV	TQEEVDQATS	KIANEG----			
Schizosaccharom	-----	-----	-----	-----						
Emericella_nidu	-----	-----	-----	-----						
Cryphonectria_p	-----	-----	MAYYTD	SSSS--	ESED	FEDVINQVVA	EEDITGAAWY			
Neosartorya_fis	-----	-----	-----	-----						
Candida_albican	ILQGN-----	-----	SSKGPA	QRTL--	EGSV	AAVSTRPQND	KYETIPVPVK			
Kluyveromyces_l	NQTVT-----	-----	RHRIPV	QRDL--	FMNV	L-----	PNQQ	TFYEETHTDV		
Schizosaccharom	LKCIK-----	-----	HNQDVE	NTTF--	QLDL	R-----	GCRV	PSSQPQVITE		
Consistency	0000100000	0000111011	1111001111	1101112212	2122222212					

	.....	260	.....	270	.....	280	.....	290	.....	300
Homo_sapiens	TPAS--	SPMGP	FFGLPWQQEA	IHDNI--	YTP	RKYQVELLEA	ALDHNTIVCL			
Bos_taurus	TPAS--	SPMGP	FFGLPWQQEA	IHDNI--	YTP	RKYQVELLEA	ALDHNTIVCL			
Mus_musculus	TPAS--	SPMGP	FFGLPWQQEA	IHDNI--	YTP	RKYQVELLEA	ALDHNTIVCL			
Gallus_gallus	TPAS--	SPMGP	FFGLPWQQEA	IHDNI--	YTP	RKYQVELLEA	ALDHNTIVCL			

Xenopus_tropica	TPAS-SPMGP	FFGLPWQQA	IHDNI--YTP	RKYQVELLEA	ALDHNTIVCL
Danio_rerio	TPAS-SPMGP	FFGLPWQQA	IHDNI--YTP	RKYQVELLEA	ALEHNTIVCL
Caenorhabditis	-----	-MV-----RVR	ADLQC--FNP	RDYQVELLDK	ATKKNTIVQL
Drosophila_mela	-----	-MAFHWCDDN	LHTTV--FTP	RDFQVELLAT	AYERNTIICL
Oryza_sativa_Ja	DGGSMKKAE	ADRMGAAQRE	KPVAE--ERA	RQYQLEVLEQ	AKSRNTIAFL
Arabidopsis_tha	NREC-DVKAE	ENKSKPEERK	EKVVE--EQA	RRYQLDVLEQ	AKAKNTIAFL
Neurospora_cras	AIEA-ARVAG	VDVLPAGFD	SERII--TSP	REYQVELFER	AKQQNTIAVL
Chaetomium_glob	IVDD-DGKTF	QSLIR--DFE	NKRII--TSP	RDYQLELFER	AKTQNTIAVL
Coccidioides_im	IKAT-KDDEL	SMSNLLAKQD	FASVI--HDP	REYQVELFEK	AKKDNIIAVL
Aspergillus_nig	THDL-PDAQ	STAHLVAKQD	LGIGT--LDP	REYQLELFER	AKVQNTIAVL
Aspergillus_fum	PIAL-SDGEL	SIAHLVKKQD	LGNGM--LDP	REYQIELFER	AKTQNTIAVL
Aspergillus_cla	PLNL-SDNEL	SIAHLVAKQD	VGGGL--LDP	REYQIELFER	AKAQNTIAVL
Phaeosphaeria_n	-----	QLSIRDILASQD	TAVRI--TNP	RDYQMELFLR	AKMQNTIAVL
Schizosaccharom	-----	-----MDI-	-SSFLLPQLL	RKYQQDVYNI	ASKQNTLLVM
Emericella_nidu	-----	-----MASI	PEERSAEHRA	RSYQLEMFEA	SLKGNIIIVM
Cryphonectria_p	DGHL-SEEDS	PGGKPRPKEQ	LPKDIVKMDA	RAYQLEMLEA	SLKENIICAM
Neosartorya_fis	-----	-----MASSVT	ACQGASPYQP	RNYQLEMLEA	SMKENIIVAM
Candida_albican	INT--PTHH	AMDFENLKTY	IYPTN--FEI	RDYQYNIVER	AFYDNL LVAL
Kluyveromyces_l	SYG--PTHH	QLNEENLDEY	IYPTN--YEV	RQYQYDIVRC	ALFENVLCAI
Schizosaccharom	LEN--NIDI	PKNIDAMQNW	IFPQT--QQY	RNYQKEFCEQ	ALFHNL L LAL
Consistency	2121022222	2232223543	4333500445	*59*687675	9535*79658

	.....310	.....320	.....330	.....340	.....350
Homo_sapiens	NTGSGKTFIA	VLLTKELSYQ	I-RGDFS RN-	-GKRTVFLVN	SANQVAQQVS
Bos_taurus	NTGSGKTFIA	VLLTKELSYQ	I-RGDFNRN-	-GKRTVFLVN	SANQVAQQVS
Mus_musculus	NTGSGKTFIA	VLLTKELAHQ	I-RGDLNPH-	-AKRTVFLVN	SANQVAQQVS
Gallus_gallus	NTGSGKTFIA	VLLTKELSYQ	I-RGDFNKN-	-GKRTVFLVN	SANQVAQQVS
Xenopus_tropica	NSGSGKTFIA	VLLSKELSYQ	I-RGDFS KN-	-TKRTVFLVN	SEKQVSQQVS
Danio_rerio	NTGSGKTFIA	VLLIKELSHQ	I-RGE--N-	-GKRTVFLVN	AASSVAQQAS
Caenorhabditis	GTGSGKTFIA	VLLLKEYGVQ	L-FAPLDQG-	-GKRAFFVVE	KVNLVEQQAI
Drosophila_mela	GHRSSKEFIA	LKLLQELSR	A-RR--H-	-GRVSVYLS	EVGTSTEPCS
Oryza_sativa_Ja	ETGAGKTLIA	VLLIKSVCDK	M-LKENKK--	--MLAVFLVP	KVPL-----
Arabidopsis_tha	ETGAGKTLIA	ILLIKSVHKD	L-MSQNRK--	--MLSVFLVP	KVPLVYQQAE
Neurospora_cras	DTGSGKTLIA	AMLLRWVITG	E-LEDREKGL	PRRIAFFLVD	KVALVFQQHS
Chaetomium_glob	DTGSGKTLIA	ALLLRWTIQN	E-LEDRSKRL	PKRIAFFLVD	KVALVFQQHA
Coccidioides_im	DTGSGKTLIA	VLLLKHIIEQ	E-LIDRSAEK	PHRVSFLLVD	SVTLVFQQAA
Aspergillus_nig	DTGSGKTLIA	VLLLKHTLEK	E-LNDRMEGK	PHRIAFFLVD	SVTLAYQQAA
Aspergillus_fum	DTGSGKTLIA	VLLLRHTILN	E-LDDRANGK	THRVSFLLVD	SVTLAYQQAA
Aspergillus_cla	DTGSGKTLIA	VLLLRHVLQN	E-LNDRANGK	PHRVSFLLVD	SVTLAYQQAA
Phaeosphaeria_n	DTGTGKTHIA	TLLLRHVLEE	E-LENRAKGC	AHKMAFFLVD	SVNLVFQQAN
Schizosaccharom	RTGAGKTLIA	VKLKQKLEE	QILIQESNLE	HKKISVFLVN	KVPLVFQQAE
Emericella_nidu	GTGSGKTLIA	LLRIIHELEN	-----S	DGKLIWFLAP	TVPLCLQQHR
Cryphonectria_p	DTGSGKTHVA	ILRIKAELEE	-----MP	EGQVWFLTP	TVSLCAQQYA
Neosartorya_fis	DTGSGKTHIA	VLRIKAELDI	-----CP	PDKLVWFLAP	TVALCIQQHE
Candida_albican	PTGLGKTFIA	STVMLNFLRW	F-----	PISKIIFMAP	TRPLVAQQIK
Kluyveromyces_l	PTGTGKTFIA	STVMLNYRW	T-----	KSSKIIFTAP	TRPLVAQQIK
Schizosaccharom	PTGLGKTFIA	AVVMLNYFRW	F-----	PESKIIFLAP	TKPLLLQQRV
Consistency	59979*959*	6776644444	3032312220	1364559874	6646648845

	.....360	.....370	.....380	.....390	.....400
Homo_sapiens	AVRTHSD--	LKVGEYSNLE	VNASW-TKER	WNQEFTKHQV	LIMTCYVALN
Bos_taurus	AVRTHSD--	LKVGEYSNLE	VSASW-TKEK	WNQEFTKHQV	LIMTCYVALN
Mus_musculus	AVRTHSD--	LKVGEYSDLE	VNASW-TKER	WSQEFTKHQV	LIMTCYVALT
Gallus_gallus	AVRTHSD--	LKVGEYSSLE	VTESW-TKEK	WSQEFTKHQV	LVMTCYVALT
Xenopus_tropica	AVRTHSD--	LKVGEYSDQE	KTQCW-AKER	WYLEFETHQV	LVMTCYIFLN
Danio_rerio	TVRTHSD--	LQVGDMSE-	DMTSW-PEEM	WNREMIENQV	LVMTCYIFLN
Caenorhabditis	HIEVHTS--	FKVGQVHGQT	SSGLWDSKEQ	CDQFMKRHHV	VVITAQCLLD
Drosophila_mela	IYTMLTHLTD	LRVWQEOPD-	-----MQIP	FDHCWTDYHV	SILRPEGFLY
Oryza_sativa_Ja	-----	-VYQ-----	-----	-----V	LVMTAQILLN
Arabidopsis_tha	VIRNQTC--	FQVGHYCGEM	GQDFW-DSRR	WQREFESKQV	LVMTAQILLN
Neurospora_cras	FLTKNLD--	FPMEKLCGEM	VEGVE-SKAF	WKEALEQNEV	VVCTAEILST
Chaetomium_glob	VLA CNLD--	YPLEKFCGDM	VED-V-TQDF	WHKTFDENMA	IVCTAEILYQ
Coccidioides_im	VLQNNIN--	QRVDKFCGAM	ETDLW-NGET	WERHLAKNMV	IVCTAEVLYQ
Aspergillus_nig	VLRNNLD--	QSVGHFFGAM	GTDLW-SKSV	WDQHFKQNMV	IVCTAEILNQ
Aspergillus_fum	VLRNNID--	QNVAHFFGAM	GTDLW-DKRT	WDKHLQRNMV	IVCTAEILNQ
Aspergillus_cla	VLRNNID--	QNVAHFFGAM	GTDLW-DRQV	WEEHLQQNMV	IVCTAEILNQ
Phaeosphaeria_n	VLR CGLD--	QGV EGISGAM	GQSLF-QKQT	WDKLF AVNMV	IVCTAQVLVD
Schizosaccharom	YIRS QLP--	AKVGMFYGEL	SI-EMSE-QL	LTNII LKYNV	IVITADLFYL
Emericella_nidu	VISQHIPP--	VKSRTL LGSD	KVELWTEQAV	WDAVLEGLQV	IVSTPAVLHD
Cryphonectria_p	VVKAQIPP--	VQTKIVTGAD	KVDSW-SSTT	WDGALLNVKV	IITTPQVLLD
Neosartorya_fis	VIASNLP--	VRTRTL TGLD	KVELWTEQSI	WDAVLNGYRV	IVSTH AVLAD
Candida_albican	ACCSIAG--	IPSSKVAILL	DK----TRRN	RAEIWNSRQV	FFTTPQVVEN
Kluyveromyces_l	ACLGITG--	IPYSDTAILL	DK----SRKN	REEIWQQKRV	FFTTPQVVEN
Schizosaccharom	ACSNVAG--	MSPGATAELN	GEV--SPDR	RLF EYNTKRV	FFMTPQTLQN
Consistency	5654444000	4464443443	3322404543	5443534459	7849557644

	410	420	430	440	450
Homo_sapiens	VLKNGYLSLS	DINLLVFDEC	HLAIL-DHPY	REIMKLCENC	PS-----
Bos_taurus	VLKNGYLSLS	DINLLVFDEC	HLAIL-DHPY	REIMKLCENC	PS-----
Mus_musculus	VLKNGYLSLS	DINLLVFDEC	HLAIL-DHPY	REIMKLCESC	PS-----
Gallus_gallus	VLRNEYLSLS	NINLLVFDEC	HLAIQ-DHPY	REIMKICEDY	PS-----
Xenopus_tropica	VLKSGNVSL	NINLLVFDEC	HLAIQ-DHPY	REIMKICESC	QP-----
Danio_rerio	VLKNGVLP	KINLLVFDEC	HLAIT-GHPY	REIMKICEGC	PS-----
Caenorhabditis	LIRHAYLKIE	DMCVLIFDEC	HHALGSQHPY	RSIMVDYKLL	KK--D---K
Drosophila_mela	LLETRELLLS	SVELIVLEDC	HDSAV-YQRI	RPLFENHIMP	AP--P---A
Oryza_sativa_Ja	ILRHSLIKMD	AIHLLILDEC	HHAVK-KHPY	SLVMSEFYHT	TP--K---E
Arabidopsis_tha	ILRHSLIRME	TIDLILDEC	HHAVK-KHPY	SLVMSEFYHT	TP--K---D
Neurospora_cras	ALHHSWIRMD	QINLLIFDEA	HHTKK-DHPY	ARI IKNFYID	E--QL---E
Chaetomium_glob	CLTHSYIRMD	QVNLLVFDEA	HHTKK-NHPY	ARI IKDFYAE	VKDLN---K
Coccidioides_im	CLLHAFVKME	NINLLIFDEA	HNACK-DHPY	ARIVKDFYLK	D-G-N---A
Aspergillus_nig	CLLNSYIKMS	QINILIFDEA	HHTKK-DHPY	ARI IRDSYLE	E-V-Y---S
Aspergillus_fum	CLLNSYVRMD	QINLLIFDEA	HHAKK-DHPY	ARI IRDSYFK	A-Q-P---S
Aspergillus_cla	CLLNSHVRMN	QINLLIFDEA	HHTKK-DHPY	ARI IRDSYFK	A-S-P---P
Phaeosphaeria_n	CMMHSFMSIS	RMNLLIFDEA	HHAKS-NHPY	ARVMKDYYAH	E-LDT---S
Schizosaccharom	FLARGFLSIN	DLNLLIFDEC	HHAI G-NDAY	ARIMNDFYHR	AKAVLSKKHF
Emericella_nidu	AMTHGFVRIS	RLGLLIFDEA	HH CIR-KHPT	NMIMRNFYHP	ALQE--YGGP
Cryphonectria_p	ALLHGFVNIS	SLALMVFDEA	HH CNK-NHAY	SRVMKEFYWE	SKTK--H--E
Neosartorya_fis	ALSHGFVKMS	RLALLIFDEA	HHCTR-RHAA	NKIMRDFYHP	TLTK--SGPG
Candida_albican	DLASGVVNPK	SIALLVIDEA	HRAKG-NYSY	NNVVKFINRF	SDS-----
Kluyveromyces_l	DLKRGVLNPK	DVLLVIDEA	HRARG-NYAY	VELTKFIDRF	NTS-----
Schizosaccharom	DLKEHLDAK	SIICLIFDEA	HRATG-NHSY	AQVMRAVLRS	NSH-----
Consistency	4945547566	5858998996	*474405868	5597644432	4210000001

	460	470	480	490	500
Homo_sapiens	-CPRILGLTA	SIL--NGKCD	PEELEEEKIQK	LEKIL-KSNA	ETATD-LVVL
Bos_taurus	-CPRILGLTA	SIL--NGKCD	PEELEEEKIQK	LEKIL-KSNA	ETATD-LVVL
Mus_musculus	-CPRILGLTA	SIL--NGKCD	PEELEEEKIQK	LERIL-RSDA	ETATD-LVVL
Gallus_gallus	-CPRILGLTA	SIL--NGKCD	PAELEEEKIKK	LEKIL-KSNA	ETATD-LVVL
Xenopus_tropica	-CPRILGLTA	SIL--NGKCD	PRDLEEEKIQK	LEEIL-RSNA	ETATD-LVVL
Danio_rerio	-CPRILGLTA	SIL--NGKCD	PCDLEEEKIQN	LEKIL-QSNA	ETATD-LVVL
Caenorhabditis	PVPRVLGLTA	SLI--KAKVA	PEKLMEQLKK	LESAM-DSVI	ETASD-LVSL
Drosophila_mela	DRPRILGLAG	PLH--SAGCE	LQQLSAMLAT	LEQSV-LCQI	ETASD-IVTV
Oryza_sativa_Ja	KRPVAVFGMTA	SPVNLKGVTS	QEDCAIKIRN	LESKL-DSVV	CTIKD-RKEL
Arabidopsis_tha	KRPAIFGMTA	SPVNLKGVSS	QVDCAIKIRN	LETKL-DSTV	CTIKD-RKEL
Neurospora_cras	RRPRILGLTA	SPVD-AK---	-VDPRAAAAE	LEALL-HSQI	ATAAD-PAAL
Chaetomium_glob	RLRISRAMTA	SPVD-AQ---	IDPKIARSPE	LEGLL-HSQI	ATVAD-PTAL
Coccidioides_im	KRPKIFGMTA	SPVD-A----	KMDVVKAARN	LETLL-NSQI	ATASN-LSLL
Aspergillus_nig	KRPRIFGMTA	SPID-T----	KGDIVDEATR	LEKLL-DSRI	ATTSN-MSLL
Aspergillus_fum	QRPRVFGMTA	SPID-T----	KGDITEAATR	LETFL-DSRI	ATTSK-ITLL
Aspergillus_cla	QRPRIFGMTA	SPID-T----	KGDIIAAATR	LETLL-DSRI	ATTSK-ITLL
Phaeosphaeria_n	KRPRIFAMTA	SPVD-VKGQS	AEHVREAARE	LETLL-HSRI	ATTSD-SALA
Schizosaccharom	TLPRIFGMTA	SPF---TGK	KGNLYHRLYQ	WEQLF-DSKA	HVVS--ENEL
Emericella_nidu	AVPRILGLTA	SAG-----	--SSREGLQT	IEMNL-NSVC	TTPQAHQEL
Cryphonectria_p	PVPRILGLTA	SPV---VR-	--SDISSLKR	LESTL-DAVC	RSPTRHREEL
Neosartorya_fis	AVPRIMGLTA	SPV---VR-	--SNHQELLT	VESNL-DAVC	RTPRVHRQEL
Candida_albican	--YRILALTA	-----T	PASDVEGVQQ	IIDNLSISKV	EVRTEQSIDI
Kluyveromyces_l	--YRLALTA	-----T	PAADLEGVQE	VVNNLHISKI	ELRTEDSLDV
Schizosaccharom	--FRVLGLTA	-----T	PGSSTASVQK	VVDCLHISKL	IVRNEESIDI
Consistency	1378868899	7341021112	3254354655	8844904846	4856504448

	510	520	530	540	550
Homo_sapiens	DRYTSQPCEI	VVDC-----	-----	GPFT	DRSGLYERLL
Bos_taurus	DRYTSQPCEI	VVDC-----	-----	GPFT	DRSGLYERLL
Mus_musculus	DRYTSQPCEI	VVDC-----	-----	GPFT	DRSGLYERLL
Gallus_gallus	DRYTSQPCEI	VVDC-----	-----	GPYT	DKSGLYGRLL
Xenopus_tropica	DRYASQPCEI	VLDC-----	-----	GPYI	DKSGLYQRLL
Danio_rerio	DRYASQPREE	VLDC-----	-----	GQYQ	DQSGLSERLL
Caenorhabditis	SKYGAKPYEV	VIIC-----	-----	KD-F	EIGCLGIPNF
Drosophila_mela	LRYC SRPHEY	IVQC-----	-----	AP-F	EMDELSLVLA
Oryza_sativa_Ja	EKHVPMPLEV	VVQYDKAATL	WSLHEQIKQM	ESTVEEAALS	SSKRTKWQFM
Arabidopsis_tha	EKHVPMPSEI	VEYDKAATM	WSLHETIKQM	IAAVEEAAQA	SSRKS KWQFM
Neurospora_cras	QHTICKPKTE	LVVE-----	-----	-----	YVRGR
Chaetomium_glob	HNSSTKLKRE	VTVE-----	-----	-----	YGKCL
Coccidioides_im	RQSVPRP-NE	EVWS-----	-----	-----	YDRLD
Aspergillus_nig	RQVARRP-VE	RVWS-----	-----	-----	FNKLE
Aspergillus_fum	REVVS RP-IE	KVWA-----	-----	-----	YNRLE
Aspergillus_cla	RQVVS RP-IE	KVWA-----	-----	-----	YDRLE
Phaeosphaeria_n	RNSITRP-EE	EVAV-----	-----	-----	YTRLR
Schizosaccharom	ADYFCLPEES	YVMY-----	-----	SNK--	LVVPPSDSI
Emericella_nidu	LEYTHMPELR	RVLY-----	-----	TPL--	MKENASLWE

Cryphonectria_p	IANSQRPALF	SIY	-----	-----	-----	NPKLQ	PYAAGFSESL
Neosartorya_fis	VKFTHRPHLQ	QIY	-----	-----	-----	TPTDP	AGFKSASQTL
Candida_albican	VRHMKRKTVE	RKTC	-----	-----	-----	YPSS	EITECIELLA
Kluyveromyces_l	ARYMMRRDRE	MIEI	-----	-----	-----	GLIP	EIEEVVEQIG
Schizosaccharom	RSYVFHKKIQ	LIKV	-----	-----	-----	TISS	EMNILKSDFA
Consistency	3554457144	4834	0000000	0000000000	00000002111	2121243554	

	..... 560	570	580	590	600
Homo_sapiens	MELEEEALNFI	ND	C	NISVHSK	ERDSTLISKQ
Bos_taurus	MELEEEALNFI	ND	C	NISVHSK	ERDSTLISKQ
Mus_musculus	MELEAALDFI	ND	C	NVAVHSK	ERDSTLISKQ
Gallus_gallus	RELDEALHFL	ND	C	NISVHSK	ERDSTLISKQ
Xenopus_tropica	NELDEALNFI	ID	C	NISTHSC	ERDSTLISKQ
Danio_rerio	NELDEALNFI	ND	C	NLSVHRE	DRDPTFISKQ
Caenorhabditis	DTVIEIFDET	VA	FVNT	TTEFHDPDL	LDPRRPIKD
Drosophila_mela	DVLNTHKSFL	LD	HRYPYIY	TDQFMDELKD	IPDPKVDPLN
Oryza_sativa_Ja	GARDAGSRDE	LR	L	VYGVSERT	ESDGAANLIQ
Arabidopsis_tha	GARDAGAKDE	LR	Q	VYGVSERT	ESDGAANLIH
Neurospora_cras	PDSETVLNKQ	LR	K	LV	GGQELFKK
Chaetomium_glob	PEFETGLNRA	LK	D	LV	GEHRLFKK
Coccidioides_im	QPFETRLYKE	LR	S	RF	GDLRALEK
Aspergillus_nig	QPFATSLYKH	LE	D	RF	GDMACLEG
Aspergillus_fum	PPFATELYKL	MD	T	RY	GNIKVLEG
Aspergillus_cla	SPFKTNLHKL	ME	N	RF	GNVKALEG
Phaeosphaeria_n	NEFETPLHQK	VK	A	KY	GDVAPFRK
Schizosaccharom	IKKCEETLQG				CKLISR
Emericella_nidu	GSTLQKLLER	D			NTYCSGQMK
Cryphonectria_p	TKLMAARNKL	NILEDPPYVVS	LRAEISDRSR	RKLEKAIKEK	RTYVQDTMKS
Neosartorya_fis	GALYHAWETL	DIGDDPYIQR	LRKSPLDDTA	LKKALL	KTTCREQLRR
Candida_albican	EGITPVLNTA	KE	R	GLL-DLT	DPTRINFLQC
Kluyveromyces_l	IAIAPVLQEA	IQ	L	GIY-ESC	EPHQINAFVA
Schizosaccharom	NLYRPYFNFL	RQ	K	KLIPINC	ECLNIKAYTL
Consistency	3444446434	000000034	2000000000	0012111111	2133433454

	..... 610	620	630	640	650
Homo_sapiens	ILSDCRAVLV	VLGPWCADKV	AGMMVRELQK	YIKHEQ-EEL	HRKFLFLFTDT
Bos_taurus	ILSDCRAVLV	VLGPWCADKV	AGMMVRELQK	HIKHEQ-EEL	HRKFLFLFTDT
Mus_musculus	ILSDCRAVLV	VLGPWCADKV	AGMMVRELQK	YIKHEQ-EEL	HRKFLFLFTDT
Gallus_gallus	ILSDCRAVLV	VLGPWCADKV	AGMMVRELQK	YIKHEQ-EEL	HRKFLFLFTDT
Xenopus_tropica	ILSDCQTVLL	VLGPWCADKV	AGMMVRELQK	YIKHEQ-EEL	HRKFLFLFTDT
Danio_rerio	VLNDCRAVLT	VLGPWCADKA	AGIMVRELQK	YIKHEQ-EEL	NRKFLFLFTDT
Caenorhabditis	SLKTTRAVFR	QLGPWAAWRT	AQVWEKELGK	IKSQVLPDK	TLRFLNMAKT
Drosophila_mela	VINSLLVVLH	EMGPWCQTRA	AHHFYQCNEK	LKVK-TPHER	HYLLYCLVST
Oryza_sativa_Ja	KLRAINYLALG	ELGQWCAYKV	AQSFLTALQN	DER----	AN YQVDVKFQES
Arabidopsis_tha	KLRAINYLTLA	ELGQWCAYKV	GQSFLSALQS	DER----	VN FQVDVKFQES
Neurospora_cras	PLNFTTSAAS	KLGTWCADRY	WQLFFKQEDI	VKL----	ES RTERDLMKV-
Chaetomium_glob	PFAFTATAAS	ELGPWCADRY	WQLFFRGEEV	VKL----	EA KTEREILRK-
Coccidioides_im	LFTFSLKASS	NLGAWCADWV	WSYALTEESL	PKL----	EG RAARTAMGNL
Aspergillus_nig	IFRFWQASS	ELGRWCSDRA	WARALADDVL	PKL----	EG SVRKTANSET
Aspergillus_fum	VYRFWQASS	ELGRWCSDRA	WWHALADDVL	PKL----	EG NINKLIESNT
Aspergillus_cla	VYRFWQASS	ELGRWCSDRA	WLYALADDVL	PKL----	EG HVNKLAEASTA
Phaeosphaeria_n	LFITAKLHAS	ELGRWASDMY	WSFAFADEQS	RKL----	QI REELKYNRSK
Schizosaccharom	AVKTALAETI	DMGLWFGQV	WLYLVDFVET	K-----	RLKKKALGKQ
Emericella_nidu	FVCKAVHIFQ	ELGIWAAEYF	IRASVEELLS	H-----	AYVHSEKIDLD
Cryphonectria_p	FCRRSMEMAK	ELGAWAADWF	ISEAIRLFLA	G-----	IYRQGAS---
Neosartorya_fis	FVDRSRHIFE	ELGEWAAEYF	IYASIKQLGD	R-----	VRNSYMSGDW
Candida_albican	MEISRKIVAN	PT-IPEGLKW	SNFYILQLLG	MV-----	G QCYRRLNIYG
Kluyveromyces_l	MQQSQKIILN	PS-IPEGLKW	KNFFILQLLS	QV-----	G HMYRRLRIYG
Schizosaccharom	FVSLRKYSFS	SKNVQSKEKS	KIMSCFTLLI	SC-----	A HITYLLDCHG
Consistency	4543433554	5773757554	3344644444	3320000032	4343443333

	..... 660	670	680	690	700
Homo_sapiens	FLRKIHALLCE	EHFS	PASLDLKF	VTPKVIKLE	ILRKYKPYER
Bos_taurus	FLRKIHALLCE	EHFS	PASLDLKF	VTPKVIKLE	ILRKYKPYER
Mus_musculus	LLRKIHALLCE	EYFS	PASLDLKY	VTPKVMKLE	ILRKYKPYER
Gallus_gallus	FLRKIHALLCE	EHFS	PASLDLKF	VTPKVIKLE	ILRKYKPYER
Xenopus_tropica	ILRKIHALLCE	EHFS	PASLDMKF	VTPKVIKLE	ILRKYKPYER
Danio_rerio	ILRKIHALLCE	EHFS	PASLDLKF	VTPKVIRLLE	ILHEYKPFER
Caenorhabditis	SMITIKRLLE	PEMKKIK	SIEALRPY	VPQVRIRLFE	ILETFN----
Drosophila_mela	ALIQLYSLCE	HAFHRHLGSG	SDSRQTIERY	SSPKVRRLLQ	TLRCFKPEEV
Oryza_sativa_Ja	YLKKVVDLLH	CQLT	EGAAMKSE	TSDVEMQNT	KHNTNDLEEG
Arabidopsis_tha	YLSEVVSLLQ	CELL	EGAAAEKV	A-AEVGKPEN	GNAHDEMEEG
Neurospora_cras	AALDEITEK	HV		KQVREAEH	LVNAHTFSPA
Chaetomium_glob	SAYSQEIAA	QV		NKVREAEH	LVGQH--EFA
Coccidioides_im	PIAKIVRPEA	EI		QRIREASE	IIRSHKFGDP

	810	820	830	840	850
Homo_sapiens	PFTNI	LCGIIFVE	RRYTAVVLNR	LIKEAGKQDP	ELAYISSNFI
Bos_taurus	PFTNI	LCGIIFVE	RRYTAVVLNR	LIKEAGKQDP	ELAYISSNFI
Mus_musculus	PFTNI	LCGIIFVE	RRYTAVVLNR	LIKEAGKQDP	ELAYISSNFI
Gallus_gallus	PFTNI	LCGIIFVE	RRYTAVVLNR	LIKEAGKQDP	ELAYISSNFI
Xenopus_tropica	PFTNI	LCGIIFVE	RRYTAVVLNR	LIKEAGKQDP	ELAYISSNFI
Danio_rerio	PFTNI	LCGIIFVE	RRYTAVVLNR	LIKEAGKQDP	ELAYISSNFI
Caenorhabditis	EKA EH	LSA IIFVD	ORV IAYSLLL	MMRHIKSWEP	KFKFVNPDYV

Drosophila_mela	RHHRDHNDGS	DTLCALIIYCN	QNHTARVLF	LLAEISRRDP	DLKFLRCQYT
Oryza_sativa_Ja	TED	FRAIIFVE	RVVTALVLPK	VLAELP	SLSFIRCASL
Arabidopsis_tha	TAD	FRAIIFVE	RVVAALVLPK	VFAELP	SLSFIRCASM
Neurospora_cras	GVGA	QRCIIFVR	QRNTAMLAD	LLQQPEI-KS	HIPSIAAEVL
Chaetomium_glob	VDHK	RRCIVFVR	QRNVASLLTD	LLQQPE--M	RIPGLEPGIL
Coccidioides_im	RHTD	TKCIVFTE	QRHTARILCD	LFSRI	GTKHLRPGVL
Aspergillus_nig	RQTE	TKCIVFTQ	KRYTALILAE	LFQTL	NIPFLRPGVL
Aspergillus_fum	DTTG	TKCIVFTQ	KRYTAKILNE	LFTVL	NIPNLRPGVL
Aspergillus_cla	HAPE	TKCIIFTQ	KRYTAKTLHE	LFTIL	SIPHLRPGVL
Phaeosphaeria_n	RTTL	ARCIVFVE	KRHTAQLLKL	IFDHI	GGPNLHCDVL
Schizosaccharom	SDS	VRTVIFVE	RKATAFTLSL	FMKTLNL	--PNIRAHSF
Emericella_nidu	DIN	FSGLIFVE	QRAAVTVMSY	LLSTHPS	TRDRFRTGSF
Cryphonectria_p	K-D	ARAICFVK	ERATTVVLSH	ILTTHPE	VSSKFRIGTM
Neosartorya_fis	ERE	FSGLIFVK	QRATVSAMTS	LLSVHPC	TRERFRCAAY
Candida_albican	HET-AG	SRVIFTE	FRESALEIVQ	CIEKA	-NDNRKPHIF
Kluyveromyces_l	A-P-SD	SRAIIFTE	LRESALEIVK	SIDIL	NDGALRPHIF
Schizosaccharom	TSEGYQN	QRVMIFTE	FRNTAEYITT	TLLAI	-RPMVRASLF
Consistency	3242000000	0044498977	5747845834	7644411011	3443764446

	860	870	880	890	900
Homo_sapiens	TGHGIGKNQ				
Bos_taurus	TGHGIGKNQ				
Mus_musculus	TGHGIGKNQ				
Gallus_gallus	TGHGIGKNQ				
Xenopus_tropica	TGHGIGKNQ				
Danio_rerio	TGHSIGKNQ				
Caenorhabditis	VGASGR-NL				
Drosophila_mela	TDRVAD-PT				
Oryza_sativa_Ja	IGHNN-N				
Arabidopsis_tha	IGHNN-S				
Neurospora_cras	VGGGT-TG				
Chaetomium_glob	VGGGR-PE				
Coccidioides_im	IGVRS-DA				
Aspergillus_nig	IGVRS-GD				
Aspergillus_fum	IGVRP-GD				
Aspergillus_cla	IGVRS-GD				
Phaeosphaeria_n	VGINN-RA				
Schizosaccharom	IGHGPS				
Emericella_nidu	IGMSNSTNR				
Cryphonectria_p	VGTSFVPGV				
Neosartorya_fis	VGWSNGSAS				
Candida_albican	IGQSKEKEKF	DVENFGKKKQ	KGQTKKKKDE	RPSTRSSS	
Kluyveromyces_l	IGQAKGKEHF	DEETYIRKNK	PKGRTKAARL	RRIEEENRVE	EEKKRQKEQA
Schizosaccharom	IGQAN				
Consistency	7934311420	0000000000	0000000000	0000000000	0000000000

	910	920	930	940	950
Homo_sapiens	-----	--PRNKQMEA	EFRKQEEVLR	KFRAHETNLL	IATSIIVEEGV
Bos_taurus	-----	--PRNKQMEA	EFRKQEEVLR	KFRAHETNLL	IATSIIVEEGV
Mus_musculus	-----	--PRSKQMEA	EFRKQEEVLR	KFRAHETNLL	IATSVVEEGV
Gallus_gallus	-----	--PRNKQMEV	EFRKQEEVLR	KFRAHETNLL	IATSIIVEEGV
Xenopus_tropica	-----	--PRNKQMEV	EFRKQEEVLR	KFRAHETNLL	IATSIIVEEGV
Danio_rerio	-----	--PRNKQMEV	EFRKQEEVLR	KFRAHETNLL	IATSIIVEEGV
Caenorhabditis_	-----	--AS-SDSQG	LHKRQTEVLR	RFHRNEINCL	IATSVLEEGV
Drosophila_mela	-----	--TEPKEAEL	EHRRQEEVLK	RFRMHDCNVL	IGTSVLEEGI
Oryza_sativa_Ja	-----	-----QEM	RACQMQDTIS	KFRDGRVTLL	VATSVAAEGL
Arabidopsis_tha	-----	-----QEM	KSSQMQDTIS	KFRDGHVTLL	VATSVAAEGL
Neurospora_cras	-----	--SSYVNAKI	NFQQQNRRIIR	KFKLGEINCL	FATSVAAEGL
Chaetomium_glob	-----	--ASYDNAKV	TYRDQVLTII	KFKKGELNCI	FATSVAAEGL
Coccidioides_im	-----	--SGG--MNI	SFRQQVLAVV	SFRKGEVNCL	FATSVAAEGL
Aspergillus_nig	-----	--LAG--MNI	TFRQQFISLV	KFRTGEINCL	FATSVAAEGL
Aspergillus_fum	-----	--IGG--MNI	TFRQQFLALV	KFRTGEINCL	FATSVAAEGL
Aspergillus_cla	-----	--IGG--MNI	TFRQQFLALV	KFRKGEINCL	FATSVAAEGL
Phaeosphaeria_n	-----	--GE--ENV	SLRSQILTLQ	KFRRGELNCL	FATSVAAEGL
Schizosaccharom	-----	--DQGEFSM	TFRRQKDTLH	KFKTGKYNVL	IATAVAEEGI
Emericella_nidu	-----	--KTMLGDLI	SAKMQPDITD	DFRYGRKNLI	VATDVLKEGI
Cryphonectria_p	-----	--KRDF-LDI	PETGGSQCLE	AFREGRKNML	VATSVLEEGI
Neosartorya_fis	-----	--KDILGDLI	NMQLQRDTLD	DFRSGRKNLI	IATDVLKEGI
Candida_albican	-----	--ENAQMTGM	SQKLQKEI IK	KFKKGVFNIL	VATSIGEEGL
Kluyveromyces_l	KLERTGRRTG	SSEEAQLSGM	NQKQKKVIS	DFKKGIYNVL	VCTSIGEEGL
Schizosaccharom	-----	--SAYSTGM	NQMQQKETID	QFRAGVINTL	VATSIGEEGL
Consistency	0000000000	0023222446	4465844684	6*84654959	79*8959**8

	960	970	980	990	1000
Homo_sapiens	DIPKCNLVVR	FDLPTEYRSY	VQSKGR-ARA	PISNYIMLAD	

Bos_taurus	DIPKCNLVVR	FDLPT EYRSY	VQSKGR-ARA	PISNYVMLAD	-----
Mus_musculus	DIPKCNLVVR	FDLPT EYRSY	VQSKGR-ARA	PISNYVMLAD	-----
Gallus_gallus	DIPKCNLVVR	FDLPT EYRSY	VQSKGR-ARA	PISNYIMLAD	-----
Xenopus_tropica	DIPKCNLVVR	FDLPT EYRSY	VQSKGR-ARA	PISNYIMLAD	-----
Danio_rerio	DIPKCNLVVR	FDLPT EYRSY	VQSKGR-ARA	PVSNYIMLAD	-----
Caenorhabditis	DVKQCNLVIK	FDRPLDMRSY	VQSKGR-ARR	AGSRYVITVE	-----
Drosophila_mela	DVPKCNLVVR	WDPPTTYRSY	VQCKGR-ARA	APAYHVILVA	PSYKSPTVGS
Oryza_sativa_Ja	DIRQCNVVIR	FDLAKTVLAY	IQSRGR-ARK	PGSDYILMLE	-----
Arabidopsis_tha	DIRQCNVVMR	FDLAKTVLAY	IQSRGR-ARK	PGSDYILMVE	-----
Neurospora_cras	DIPDCNIVIR	FDLYDTLIQC	IQSRGR-ARR	PDSRYIQMIE	-----
Chaetomium_glob	DIPDCNVIIR	YDLNNTLIQY	IQSRGR-ARQ	EGSIYIHMVE	-----
Coccidioides_im	DIPDCNLIVR	FDLASTLTQY	IQSRGR-ARH	MNSTFAHLVE	-----
Aspergillus_nig	DIPDCNLVVR	FDLYQTLIQY	VQSRGR-ARH	FNSTYASMVE	-----
Aspergillus_fum	DIPDCNLVIR	FDLYRTLIQY	VQSRGR-ARH	CTSTYAIMVE	-----
Aspergillus_cla	DIPDCNLVVR	FDLYHTLIQY	VQSRGR-ARH	YHSTYASMVE	-----
Phaeosphaeria_n	DIPQCNLVVR	FDLYRTMIGY	VQSRGR-ARH	RNSKYLHMLE	-----
Schizosaccharom	DVPSCNLVIR	FNICRTVTQY	VQSRGR-ARA	MASKFLIFLN	-----
Emericella_nidu	DVSACSVVIC	YNIPKGFESF	IQRRGR-ARR	QNSTYSMMLS	-----
Cryphonectria_p	DVPACNLIIC	FDKPNNLRAF	IQRRGR-ARM	RQSHLYLFVE	-----
Neosartorya_fis	DISACSVVVC	YDKPPNLKSF	VQRRGR-ARR	KQSTFAIMFP	-----
Candida_albican	DIGEVDLIIC	YDSTSSPIKN	IQRMGRTGRK	RDGKVLMLFS	-----
Kluyveromyces_l	DIGEVDLIIC	FDSTSSPIKN	IQRMGRTGRK	RDGRIVLLFS	-----
Schizosaccharom	DIGD TDMIIC	YDASSSPIRT	IQRMGRTGRK	KSGKVFVLLT	-----
Consistency	*955888996	8964454466	9*67**08*4	3384765756	0000000000

	..... 1010..... 1020..... 1030..... 1040..... 1050
Homo_sapiens	-----
Bos_taurus	-----
Mus_musculus	-----
Gallus_gallus	-----
Xenopus_tropica	-----
Danio_rerio	-----
Caenorhabditis	-----
Drosophila_mela	VQLTDRSHRY
Oryza_sativa_Ja	-----
Arabidopsis_tha	-----
Neurospora_cras	-----
Chaetomium_glob	-----
Coccidioides_im	-----
Aspergillus_nig	-----
Aspergillus_fum	-----
Aspergillus_cla	-----
Phaeosphaeria_n	-----
Schizosaccharom	-----
Emericella_nidu	-----
Cryphonectria_p	-----
Neosartorya_fis	-----
Candida_albican	-----
Kluyveromyces_l	-----
Schizosaccharom	-----
Consistency	0000000000

	.....	1060.....	1070.....	1080.....	1090.....	1100
Homo_sapiens	-	-	-	-	-	-
Bos_taurus	-	-	-	-	-	-
Mus_musculus	-	-	-	-	-	-
Gallus_gallus	-	-	-	-	-	-
Xenopus_tropica	-	-	-	-	-	-
Danio_rerio	-	-	-	-	-	-
Caenorhabditis	-	-	-	-	-	-
Drosophila_mela	NPEVFSKQPP	TACDIKLQEI	QDELPAAAQL	DTSNSSDEAV	SMSNTSPSES	
Oryza_sativa_Ja	-	-	-	-	-	-
Arabidopsis_tha	-	-	-	-	-	-
Neurospora_cras	-	-	-	-	-	-
Chaetomium_glob	-	-	-	-	-	-
Coccidioides_im	-	-	-	-	-	-
Aspergillus_nig	-	-	-	-	-	-
Aspergillus_fum	-	-	-	-	-	-
Aspergillus_cla	-	-	-	-	-	-
Phaeosphaeria_n	-	-	-	-	-	-
Schizosaccharom	-	-	-	-	-	-
Emericella_nidu	-	-	-	-	-	-
Cryphonectria_p	-	-	-	-	-	-
Neosartorya_fis	-	-	-	-	-	-
Candida_albican	-	-	-	-	-	-

Kluyveromyces_l	-----	-----	-----	-----	-----
Schizosaccharom	-----	-----	-----	-----	-----
Consistency	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0
	..... 1110.	..... 1120.	..... 1130.	..... 1140.	..... 1150
Homo_sapiens	-----	-----	-----	TDKIK	SFEEDLKTYK
Bos_taurus	-----	-----	-----	TDKIK	SFEEDLKTYK
Mus_musculus	-----	-----	-----	TDKIK	SFEEDLKTYK
Gallus_gallus	-----	-----	-----	TDKIK	SFEEDLKTYK
Xenopus_tropica	-----	-----	-----	SDKIK	AFEEDLKTYK
Danio_rerio	-----	-----	-----	SERTK	TFQEDLKTYK
Caenorhabditis	-----	-----	-----	EKDTA	AYCSKL-PSD
Drosophila_mela	STEQKSRRFQ	CELSLTEPE	DTSDTTAEID	TAHSLASTTK	DLVHQMAQYR
Oryza_sativa_Ja	-----	-----	-----	RGNI	SHETFLRNAR
Arabidopsis_tha	-----	-----	-----	RGNV	SHAAFLRNAR
Neurospora_cras	-----	-----	-----	KGNY	EHHSRILRAK
Chaetomium_glob	-----	-----	-----	SENE	EHVKKVCQNQ
Coccidioides_im	-----	-----	-----	RDNF	VHRESVNHLQ
Aspergillus_nig	-----	-----	-----	RGNL	EHEQRLLEVQ
Aspergillus_fum	-----	-----	-----	KDNA	EHEGRLKEIR
Aspergillus_cla	-----	-----	-----	KDNS	DHEARLREVR
Phaeosphaeria_n	-----	-----	-----	AENK	ENTERLMNAR
Schizosaccharom	-----	-----	-----	TE	ELLIHERILH
Emericella_nidu	-----	-----	-----	TE	DDGSTLDKWQ
Cryphonectria_p	-----	-----	-----	-----	DEAEADWE
Neosartorya_fis	-----	-----	-----	TD	DASADVSKWQ
Candida_albican	-----	-----	-----	S-NEES	KFDKAMGGYE
Kluyveromyces_l	-----	-----	-----	G-NEKF	KFEQAMNDYE
Schizosaccharom	-----	-----	-----	EDCEDS	KWERSQVSYR
Consistency	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 3 3 4 3	4 4 4 5 4 6 3 4 4 6

	..... 1160.	..... 1170.	..... 1180.	..... 1190.	..... 1200
Homo_sapiens	AIEKILRNKC	SKSVDTGETD	IDPVMDDDDV	FPPYV---	L RPDDGGPRVT
Bos_taurus	AIEKILRNKC	SKSVDTGEAD	TEPVVDDDDV	FPPYV---	L R-PEDGPRVT
Mus_musculus	AIEKILRNKC	SKSADGAED	VHAGVDDEDA	FPPYV---	L RPDDGGPRVT
Gallus_gallus	AIEKILRNKC	SKSVDTSETE	TEPIVDDDDV	FPPYV---	L RTDENS PRVT
Xenopus_tropica	AIEKILRNKC	SKSIDCGNTE	SEPIVDDDEI	FPPYV---	L RQDDGSPRVT
Danio_rerio	AIEKILRNKC	SKSAECNDFE	LEPVTDDDNV	LPPYV---	L RSEDGGPRVT
Caenorhabditis	IFTRLVPHNQ	IIPIE----	-----	-----	-----ENGVT
Drosophila_mela	EIEQMMLLSKC	ANTEPPEQEQ	SEAERFSACL	AAYRP---	K PHLLTGASVD
Oryza_sativa_Ja	NSEETLRKEA	MERTDLSHLD	GTSVLSVPDT	SPGSM---	Y QVESTGAVVS
Arabidopsis_tha	NSEETLRKEA	IERTDLSHLK	DTSRLISIDA	VPGTV---	Y KVEATGAMVS
Neurospora_cras	GAEDVLRKFC	EALPEDRKLT	GNNMNL DYLL	RKEKGKRQ-Y	TVPDTGAKLS
Chaetomium_glob	ESEDALRKFC	EALPADRKLT	GNNFDM EYFL	RKEKDQRQ-Y	TVPETGARLN
Coccidioides_im	SSEEIMKRFC	ISLPKDRILN	--SDDVDALY	ESDRNRKS-Y	TVQTTGAKLT
Aspergillus_nig	DAEMMQSFCR	TLP-EDRLLY	GFDHDLDTVL	QKDEGNRT-F	RIKSTGAKLT
Aspergillus_fum	EAENIMRRFC	EILPEDRILH	GNDHDLDSFL	QEEGRRT-F	TVKSTGAKLT
Aspergillus_cla	EAEKTMQNFC	ETLPEDRILH	GNDHDLDSLL	QHEGRRT-F	TVKSTGARLT
Phaeosphaeria_n	HDENIMREFC	KDLTHDRQLG	DVEQEKAELI	ALEDKLFPSY	TDEKSGAKLT
Schizosaccharom	EEKNLKFALS	ELSNSNIFDS	LVCEERERVT	DDIV-----	Y EVGETGALLT
Emericella_nidu	KFEKIMEEAC	LEDRRRTEEL	RALGSLDEDV	CT-R-----	F CVRSTGAILT
Cryphonectria_p	ALEAQMKLQY	EDEKREHERL	EAIENSEALD	YP EE-----	L RVESTGARLT
Neosartorya_fis	DLEQAMIEAY	QDDERQLQSV	SALE-SLDEE	VMER-----	L TVESTSAVLT
Candida_albican	YIQQHIMKGD	FIQLRP-QHR	MIPDEYKPEA	VKQLI-----	Q IPEENIELKA
Kluyveromyces_l	NLQTAITHNA	L-EYTK-SDR	ILPPNVQPKC	EEKFI-----	I ISNENDEVNK
Schizosaccharom	RVQKVIESGK	KIALKKDVPR	LIPSNIQPIF	KFQAL-----	Q NNADATLILN
Consistency	4 4 8 5 5 7 5 4 3 5	4 3 4 3 4 3 3 3 3 3	2 3 3 3 3 3 5 3 3 4	3 3 3 3 2 0 0 0 0 4	4 3 4 5 5 6 5 4 7 7

	..... 1210.	..... 1220.	..... 1230.	..... 1240.	..... 1250
Homo_sapiens	INTAIGHINR	YCARLPSPDPF	THLAPKCRTR	ELP-----	D G---TFYSTL
Bos_taurus	INTAIGHVNR	YCARLPSPDPF	THLAPKCRTR	ELP-----	D G---TFYSTL
Mus_musculus	INTAIGHINR	YCARLPSPDPF	THLAPKCRTR	ELP-----	D G---TFYSTL
Gallus_gallus	INTAIGHINR	YCARLPSPDPF	THLAPKCKTR	ELP-----	D H---TFYSTL
Xenopus_tropica	INTAIGHINR	YCARLPSPDPF	THLAPKCKTR	EFP-----	D G---LYRSTL
Danio_rerio	MNTAIGHVNR	YCARLPSPDPF	THLAPKCKTV	EMN-----	T G---GYRSTL
Caenorhabditis	-----	-----	-----	-----	-----KYCAEL
Drosophila_mela	LGSAIALVNK	YCARLPSDTF	TKLTALWRCT	RNE-----	R AGVTLFQYTL
Oryza_sativa_Ja	LNSAVGLIHF	YCSQLPSDRY	SILHPEFIMQ	KYE-----	KP GGSVEYSCKL
Arabidopsis_tha	LNSAVGLVHF	YCSQLPGDRY	AILRPEFSME	KHE-----	KP GGHT EYSCRL
Neurospora_cras	YMQSLVCLAN	FTATLPHPPE	TSLSP EYYIT	TV-----	--PGGFQCEV
Chaetomium_glob	YKQSLICLAA	FVASLPHPPE	VNLTAGYLV L	SV-----	--PGGYQCEV
Coccidioides_im	YSSSLVVL AH	FANSLQYEKE	TSTVVSYYHR	FT-----	--KNAFVCEV
Aspergillus_nig	YHSATAILAR	YASSLQYEKE	FSAQVTYVVL	PI-----	--NGAFVCEV
Aspergillus_fum	YHSAIAILAR	YASSLQYEKE	TVPQVTYVVT	IA-----	--SNAYVCEV
Aspergillus_cla	YHSAIAILAR	YASSLQYEKE	TTPQATYVVQ	SV-----	--GNTYVCEV

Phaeosphaeria_n	YRSSLSILSH	FVATYPSPDH	NTMAQPTYVV	NPKISDDPRD	PQRNGFVCEV
Schizosaccharom	GLYAVSLLYN	FCNTLSRDVY	TRYYPFTTAQ	PCLSG---	----WYCFEV
Emericella_nidu	AEYAMQHLVH	FCDTLPRQNY	VEDKPEFSFE	RNDG---G---	----LLRAKV
Cryphonectria_p	INDAKSHLQH	FVSTLASRKF	VQTQPDYLI	KVSQ---GYQP	GDQPLLKATV
Neosartorya_fis	ADMAMAHLLH	FCAVLPPQPY	ADMRPVFSFE	TNED---G---	----LLKGTV
Candida_albican	EDDEDEIIRI	ATSYMLGGKG	KKGKKANNNS	TKKPAKTFFM	PDNVETGFKS
Kluyveromyces_l	LEDSDDEVIKY	ATQAMLGKLG	TKKKEPKP--	-----	-----KK
Schizosaccharom	SYNNNSSSL	PVNTLANQAH	SRSKRYLPFI	VD-----	-----DV
Consistency	4447543734	6554854544	5344433333	3210000001	1000352357

	.....1260.....1270.....1280.....1290.....1300				
Homo_sapiens	YLP--INSPL	RASIV-GPPM	SCVRLAERV-	-----VALIC	CEKLHKIGEL
Bos_taurus	YLP--INSPL	RASIV-GPPM	SCIRLAERV-	-----VALIC	CEKLHKIGEL
Mus_musculus	YLP--INSPL	RASIV-GPPM	DSVRLAERV-	-----VALIC	CEKLHKIGEL
Gallus_gallus	YLP--INSPL	RASIV-GPPM	SCARLAERV-	-----VALIC	CEKLHKIGEL
Xenopus_tropica	YLP--INSPL	RAPIV-GPPM	NCGRADRA-	-----VALIC	CKKLHEIGEL
Danio_rerio	FLP--INSPL	RVPVT-GPVM	NCARLAEKA-	-----VALLC	CEKLHKIGEL
Caenorhabditis	LLP--INSPI	KHAIVLKNPM	PNKKTAQMA-	-----VALEA	CRQLHLEGEL
Drosophila_mela	RLP--INSPL	KHDIV-GLPM	PTQTLARRL-	-----AALQA	CVELHRIGEL
Oryza_sativa_Ja	QLP--CNAPF	EKLE--GPIC	SSIRLAQQA-	-----VCLAA	CKKLHEMGAF
Arabidopsis_tha	QLP--CNAPF	EILE--GPVC	SSMRLAQQA-	-----VCLAA	CKKLHEMGAF
Neurospora_cras	VMP--DASPI	KSAV--GKVH	LSKGVAKCA-	-----AAFEL	CLALLKAGHL
Chaetomium_glob	TLP--ESSPI	RSAT--GKVY	ASKAVAKCS-	-----AAYEM	CLMLIKGKYL
Coccidioides_im	VLP--EKSPI	RGIV--GKPA	SKKLIQKS-	-----AAFET	CLLLRKHGLL
Aspergillus_nig	ILP--EKSPI	RGLT--GSPA	MKKSIAKRS-	-----AAFDT	CLLLRKNKLL
Aspergillus_fum	ILP--EKSPI	RGLT--GSPA	MRKAVAKRS-	-----AAFDT	CLLLRKNRLL
Aspergillus_cla	ILP--EKSPI	RGLT--GSPA	IRKSIQKS-	-----AAFDT	CLLLRRHKLL
Phaeosphaeria_n	ILP--EHCPI	ISMV--GQVY	SRKTIQKS-	-----AAFKM	CIELRRKDHL
Schizosaccharom	ELP--KACKV	PAAQG--SPA	KSIRKAKQN-	-----AAFIM	CLDLIRMGLI
Emericella_nidu	ILPSSVNPKV	RRAEG-KAWW	KTERAAKKE-	-----AAFYA	YKALYEHGLV
Cryphonectria_p	LLPVSVQAL	RQVTS-SRTW	VSEKNACMD-	-----AAFQA	YKALYEAGLV
Neosartorya_fis	ILPSCVHPKV	RRTEG-RRWW	RTERAAMKE-	-----TAFQA	YKALYEFGLV
Candida_albican	AAT--MVRKV	GDNKS-LAER	NKEKTFLDKL	VDSDSDSEVD	KENENVIQEV
Kluyveromyces_l	TTA--KAKKS	SDKTF-FMPD	NVKEGFTSA-	-----SSLLN	KYTINEFGEK
Schizosaccharom	FED--MESNL	RVPTE-DAKI	KRFKSDYRS-	-----CIYNA	RRNVFSKPTY
Consistency	4880045667	6445105443	4445585450	0000068634	6448463647

	.....1310.....1320.....1330.....1340.....1350	
Homo_sapiens	DDHLMFVGKE TVKYEEEL--	-----DLHD EEETSVPGRP GSTKRRQCYP
Bos_taurus	DDHLMFVGKE TVKYEEEL--	-----DLHD EEETSVPGRP GSTKRRQCYP
Mus_musculus	DEHLMFVGKE TVKYEEEL--	-----DLHD EEETSVPGRP GSTKRRQCYP
Gallus_gallus	DDHLMFVGKE TVKYEEEL--	-----DLHD EEETSVPGRP GSTKRRQCYP
Xenopus_tropica	DDHLMFVGKE TVKYEEEL--	-----DLHD EEETSVPGRP GSTKRRQCYP
Danio_rerio	DDHLMFVGKE TVKYEEEL--	-----DLHD EEETSVPGRP GSTKRRQCSP
Caenorhabditis	DDNLLPKGRE SIAKLLEH--	----IDEEPD EYAPGIAAKV GSSKRKQLYD
Drosophila_mela	DDQLQPIGKE GFRALEPDWE	CFELEPEDEQ IVQLSDEPRP GTTKRRQYYY
Oryza_sativa_Ja	TDTLLPDRGS GEGEKT---	-----EQNDEGEPLP GTARHREFYP
Arabidopsis_tha	TDMLLPDKGS GQDAEKA---	-----DQDDEGEPVP GTARHREFYP
Neurospora_cras	DNHLQSVFTK QLPEM-----	-----RNARLA VSSKKKTEYA
Chaetomium_glob	DQHLLRPTFTK QLPAM-----	-----RNARLA VSSKKKEQYK
Coccidioides_im	DDH FVSTYHK RLPAM-----	-----RNARLA ISSKKSNOYD
Aspergillus_nig	DDH FNSIYHR RLPAM-----	-----RNAKLA ITSKRTSQYD
Aspergillus_fum	DGY FNSIYHR RLPAM-----	-----RNAKLA ITCKRTNAYD
Aspergillus_cla	DDF FKS IYHK RLPAM-----	-----RNAKLA ITSKKTNOYD
Phaeosphaeria_n	NEFLLPTISK YLPAM-----	-----RNALLA VSEKKKGNYA
Schizosaccharom	DKHLKPLDFR RKIADLE---	TLEEDDELKDE GYIETYERYV
Emericella_nidu	NDNLLPLTKS R---EFT---	RKDIS--LLP AVQKVSEQYD
Cryphonectria_p	DDHLLPL---	R---DRL---ELELE--VRP GMREVRGLYN
Neosartorya_fis	NDHLLPLTKR P---ELK---	SHDLG--AMP SILETSEQYD
Candida_albican	DKSKNQEQND HIITEL---	DNTEQSVAGN TKSTTNGTSY
Kluyveromyces_l	IS-----LTP SVSKKA---	-----IKPKKEWNML DEIEYDSVEI
Schizosaccharom	MGDKLTKFAK VPHSL---	-----TLSTYRRGRL LQQCSPSSVT
Consistency	6646464345 4433421000	0000000000 2222533345 4557555373

	.....1360.....1370.....1380.....1390.....1400				
Homo_sapiens	KAIPECLRDS	Y---PRPDQ	PCYLYVIGMV	LTTPLPDELN	FRRRKLYPPE
Bos_taurus	KAIPECLRES	Y---PRPGQ	PCYLYVIGMV	LTTPLPDELN	FRRRKLYPPE
Mus_musculus	KAIPECLRES	Y---PKPDQ	PCYLYVIGMV	LTTPLPDELN	FRRRKLYPPE
Gallus_gallus	KAIPECLRDS	Y---PKPDQ	PCYLYVIGMV	LTTPLPDELN	FRRRKLYPPE
Xenopus_tropica	KAIPECLRNS	Y---PKPGQ	PCYLYVIGMV	LTTPLPDELN	FRRRKLYPPE
Danio_rerio	KAIPECLRGC	Y---PVPEQ	PCYLYVIGMV	LTTPLPDELN	FRRRKLYPPE
Caenorhabditis	KKIARALNES	F---VEADK	ECFIYA FELE	RFREAELTLN	PKRRKFEDPF
Drosophila_mela	KRIASEFCDC	R---PVAGA	PCYLYFIQLT	LQCPPIPEQN	TRGRKIYPPE
Oryza_sativa_Ja	EGVADILRGE	W---ILSGR	DGYQNSQFIK	LYMYSVNCVN	V-GTSKDPFV
Arabidopsis tha	EGVADV LKGE	WVSSGKEVCE	SSKLFHLYMY	---NVRCVD	F-GSSKDPFL

Neurospora_cras	MRLKPELWSV	RG	---	V	VT	QLFATAFVL	---	---	ENPDTLG
Chaetomium_glob	MRIKPELWSV	LG	---	E	PT	ELFAMALTL	---	---	ADPTALA
Coccidioides_im	MKVKPKLWET	SR	---	GI	PT	SLNIVVLGF	---	---	RPRRLH
Aspergillus_nig	MISKPSLWGR	KQ	---	GM	PK	ELHGTFITF	---	---	LPSMQLS
Aspergillus_fum	MLLKPSIWAK	QR	---	TT	TE	TFYGIHMSL	---	---	LPSKPLS
Aspergillus_cla	MLLKPSIWRR	HQ	---	GI	PS	KLYGTILSL	---	---	LPSEPLS
Phaeosphaeria_n	MVIKPTFWKQ	DR	---	DT	VE	SLHLTIIDA	---	---	DRG--LD
Schizosaccharom	PKSWMKVPED	I	---	---	T	RCFVSLLYT	---	---	DANEGDN
Emericella_nidu	PWVDWAHLWS	S	---	---	T	NLYQNRILV	---	---	RQNEEDT
Cryphonectria_p	PWLSIAAACT	Q	---	---	G	DVPLCRRAL	---	---	KVSDGNN
Neosartorya_fis	PWIEWAYSWS	S	---	---	P	DIHQSRIVV	---	---	RMNEGRG
Candida_albican	SEPENNQVN	Q	---	ES	TA	NLDSVARVPE	PEVIENS	---	ESEEEQI
Kluyveromyces_l	SPAKSQVEQP	S	---	Q	PKP	TTTQGILTP	---	---	DETTNHI
Schizosaccharom	KYLKYEKFK	R	---	K	MKK	TSNALFQST	---	---	---
Consistency	4364335334	3000022224	4454345351	1000111011	0014433333				

	..... 1410..... 1420..... 1430..... 1440..... 1450								
Homo_sapiens	DTTRCFGILT	AKPIPQIPH	--FPVYTRS	GEVTISIE	--LKKSGFMLS				
Bos_taurus	DTTRCFGILT	AKPIPQIPH	--FPVYTRS	GEVTISIE	--LKKSGFTLS				
Mus_musculus	DTTRCFGILT	AKPIPQIPH	--FPVYTRS	GEVTISIE	--LKKSGFTLS				
Gallus_gallus	DTTRCFGILT	AKPIPQIPH	--FPVYTRS	GEVTISIE	--LKKSGFTLS				
Xenopus_tropica	DTTRCFGILT	AKPIPQIPH	--FPVYTRS	GEVTISIE	--LKKSGFTLN				
Danio_rerio	DTTRCFGILT	AKPIPRIPH	--FPVYTRS	GEVTISIE	--LQKSGFSLS				
Caenorhabditis	NYEYCFGFLS	AKEIPKIPP	--FPVFLRQ	GNMKVRLI	--VAPKKTTVT				
Drosophila_mela	DAQQGFGLT	TKRIPKLSA	--FSIFTRS	GEVKVSL	--LAKERVILT				
Oryza_sativa_Ja	TQLSNFAIIF	GNELDAEVLS	TTMDLFVAR	TMITKASL	--VFRGRIEIT				
Arabidopsis_tha	SEVSEFAILF	GNELDAEVLS	MSMDLYVAR	AMITKASL	--AFKGSOLDIT				
Neurospora_cras	RSSRPLLLLS	RSALPEVAS	--FPLFFGTK	RFSKVRCV	--PIPGSVQAD				
Chaetomium_glob	RHSSPLLLLT	RQPIPQIAS	--FPLYFGKN	RSSAVHCV	--PVPGRVELD				
Coccidioides_im	REYHPLVLLT	REKLPHFPE	--FPLYLEDD	IECDVICS	--SISSGFQVS				
Aspergillus_nig	HEPAPLLLFT	RERLPHFPE	--FPIFLDDD	VETTIITT	--PLEKQLLLS				
Aspergillus_fum	RDHRPILLLT	REKLPEFPA	--FSIYLD	VETKVL	--PLKHGLQIS				
Aspergillus_cla	REHQPIVL	REKLPDFPA	--FPIYLD	IETKVVP	--SLDTGMELS				
Phaeosphaeria_n	RPHQPLAMLT	RRPFPQLPS	--FPIYLTDC	RPSNIVSQ	--SLHIPISLT				
Schizosaccharom	HIFHPLVFVQ	AHSFPKIDS	--FILNSTVG	PRVKIVLE	--TIEDSFKID				
Emericella_nidu	---SMKFIT	PTATPPIAP	--MKLCWDSE	TTYTLEFE	--AAGA-VSLT				
Cryphonectria_p	SELCEFEAL	PVALPEMKP	--MVVWWDHR	AQLTLRIDSD	AVMADTDVRH				
Neosartorya_fis	DELC-MRLMG	PTYLPPLSP	--MTLFWNNS	TTFTVTFE	--AAERVPLVP				
Candida_albican	SKITHNTPAT	SVDLSNG	--PEETSYSKI	DSVLID	--LIDDDFTFS				
Kluyveromyces_l	PSASQGSVQ	TDSHTVQ	--EP-VLKK	LKLAHQ	--IEDPSTSIE				
Schizosaccharom	-----	-----	-----	-----	-----				
Consistency	3333253565	4446744430	0065654341	3445633300	0434334465				

	1460	1470	1480	1490	1500
Homo_sapiens	LQMLELITRL	HQYIFSHILR	LEKPA-LEFK	PTDADSA-YC	VLPLNVV---					
Bos_taurus	LQMLELITRL	HQYIFSHILR	LEKPA-LEFK	PTDADSA-YC	VLPLNVV---					
Mus_musculus	QQMLELITRL	HQYIFSHILR	LEKPA-LEFK	PTGAESA-YC	VLPLNVV---					
Gallus_gallus	LQMLELITRL	HQYIFSHILR	LEKPA-LEFK	PTEADSA-YC	VLPLNIV---					
Xenopus_tropica	LEQLELITRL	HQYIFSHILR	LEKPA-LEFK	PTVADCA-YC	VLPLNVV---					
Danio_rerio	AEQLELITRL	HQYIFSHILR	LEKPA-LEFK	PVEADSA-YC	VLPLNIV---					
Caenorhabditis	AAQLQEIQLF	HNYLFTQVLQ	MCKTGNLEFD	GTSNAPLNTL	IVPLNKR---					
Drosophila_mela	SEQIVCINGF	LNVTFTNVLR	LQKFL-MLFD	PDSTENC-VF	IVPTVKA---					
Oryza_sativa_Ja	ESQLVLLKSF	HVRLMSIVLD	VDVDP--STT	PWDPAKA-YL	FVPVGAE---					
Arabidopsis_tha	ENQLSSLKKF	HVRLMSIVLD	VDVEP--STT	PWDPAKA-YL	FVPVTDN---					
Neurospora_cras	DTLVEQLTRF	TLKAFMDVFS	KE-----YE	ATAVNLP-YF	LSPMDGGHGF					
Chaetomium_glob	DNQIQGLVAV	TLAIFKDIFS	KE-----YE	ATAAQLP-YF	LAPTLMQHGS					
Coccidioides_im	SHDLEVLTTF	TLRIFQDIFH	KV-----YD	RDVGMMT-YW	LAPLNLSCD-					
Aspergillus_nig	EKEVDALTVF	TLRVFRDVFH	KT-----YD	KEPEKMA-YW	LAPAKVQSSY					
Aspergillus_fum	VDKLQSLTVF	TLRIFRDIFH	KV-----YE	HEVQKMP-YW	LAPAEADGR					
Aspergillus_cla	AEEELRALTTF	TLRIFRDVFH	KV-----YE	QSEKLP-YW	LAPAEPLDAN					
Phaeosphaeria_n	PELLEMFTRF	TLRIFEDIYN	KV-----YD	YDVSIMS-YW	MLPVIEHRVA					
Schizosaccharom	SHLLELLKKS	TRYLLQFGLS	T-----SL	EQQIPTP-YW	LAPLNL----					
Emericella_nidu	AENIERMRAA	TSLYLQATTS	T-----PL	AGNKDYI-AL	FGP-----					
Cryphonectria_p	ADQTTINQQD	HTSVLLSLAY	G-----HR	NMTIRDD-CI	LRLVS-----					
Neosartorya_fis	LSSVEDMRAI	TALYLKATNS	R-----VC	SSERDFT-AL	FAPDL-----					
Candida_albican	SDTEGDKVEV	IDAVSPEVCK	LPEK--PAT	PPIRK--SL	GVRKRV----					
Kluyveromyces_l	LYSG-----	-----	-----	YELVP--QY	GATDS-----					
Schizosaccharom	-----	-----	-----	-----	-----					
Consistency	3446435434	4335543643	3210000143	3333423053	5574321000					

	..... 1510..... 1520..... 1530..... 1540..... 1550								
Homo_sapiens	---NDSSTL	DIDFKFMEDI	EKSEARIGIP	STKYTKETP	---				
Bos_taurus	---NDSSTL	DIDFKFMEDI	EKSEARIGIP	STKYSKETP	---				
Mus_musculus	---NDSSTL	DIDFKFMEDI	EKSEARIGIP	STKYSKETP	---				
Gallus_gallus	---NDSSTL	DIDFKFMEDI	EKSEARTGIP	STQYTKEMP	---				

..... 1560 1570 1580 1590 1600

. 1610 1620 1630 1640 1650

Homo_sapiens	----	---FVFKLED	YQDAVIIP--	-RYRNFDQPH	RFYVADVYTD
Bos_taurus	----	---FVFKLED	YQDAVIIP--	-RYRNFDQPH	RFYVADVYTD
Mus_musculus	----	---FVFKLED	YQDAVIIP--	-RYRNFDQPH	RFYVADVYTD
Gallus_gallus	----	---FIFKLED	YQDAVIIP--	-RYRNFDQPH	RFYVADVYTD
Xenopus_tropica	----	---FIFKLED	YQDAVIIPRQ	VIYRNFDQPH	RFYVADVYTD
Danio_rerio	----	---FIFKLED	YQDAVIIP--	-RYRNFDQPH	RFYVADVYTD
Caenorhabditis_	----	---YKFNAED	YKDAIVMP--	-WYRNLEQPV	FYYVAEILPE
Drosophila_mela	----	---QPFDPQR	FQDAVVMP--	-WYRNQDQPQ	YFYVAEICPH
Oryza_sativa_Ja	SDYQNQGKLF	MADSCWNAKD	LAGMVVTA--	-AHSG---K	RFYVDCICYN
Arabidopsis_tha	EEDLSK GKLM	MADGCMVAED	LIGKIVTA--	-AHSG---K	RFYVDSICYD
Neurospora_cras	----	---L-EPDDF	FQDKFVVD--	-PYDG---AR	KFFTHHRRHD
Chaetomium_glob	----	---DDEADEF	FKNKYVAD--	-PYDG---SR	KFFLRGRRHD
Coccidioides_im	----	---S-NSAAF	FANRFVYD--	-RWDG---RY	RYFTHGIDPS
Aspergillus_nig	----	---N-ADPES	WVDLFVFD--	-AWDG---RC	RFFTVGVEHS
Aspergillus_fum	----	---N-LNPES	LVNRFIFD--	-NWDG---RF	RYFTVAVADT
Aspergillus_cla	----	---D-LAPES	LVNRFMFDD--	-KWDG---RS	RFFTIVKVMEG
Phaeosphaeria_n	----	---Q-SRTDD	LIDRYFVD--	-PMNG---GR	RYYSDRLAPH
Schizosaccharom	----	---F-KL	PEPVQNVN--	-----D	LQSDTVLLVN
Emericella_nidu	----	---A-IQ	---VFSSQ--	-----R	PLDRMGVVVD
Cryphonectria_p	----	---V-TA	NGSSYLVR--	-----D	ERDQSRHPYY
Neosartorya_fis	----	---M-EV	YSRGHNPL--	-----L	MGVVDRDHSRY
Candida_albican	--KKSLGVK	RPRPVSIIDQ	LKRQKIRS--	QVIVSRETQS	IIEHESRTQS
Kluyveromyces_l	----	---QEQR	HFLKKYVP--	DTVHWSIAPD	LAKSKTRKIR
Schizosaccharom	----	----	----	----	----

Consistency	0000000000	0001122353	4344454400	0232301123	4554335234
	.....1660.....1670.....1680.....1690.....1700				
Homo_sapiens	LTPLSKF---	---	---	PSPEYE TF---	AEYY KTKYNLDLTN
Bos_taurus	LTPLSKF---	---	---	PSPEYE TF---	AEYY KTKYNLDLTN
Mus_musculus	LTPLSKF---	---	---	PSPEYE TF---	AEYY KTKYNLDLTN
Gallus_gallus	LTPLSKF---	---	---	PSPEYE TF---	AEYY KTKYNLDLTN
Xenopus_tropica	LTPLSKF---	---	---	PSPEYE TF---	AEYY KTKYNLDLTN
Danio_rerio	LTPLSKF---	---	---	PSPEYE TF---	AEYY KTKYNLDLSN
Caenorhabditis	WRPSSKF---	---	---	PDTHFE TF---	NEYF IKKYKLEIYD
Drosophila_mela	LSP LSCF---	---	---	PGDNYR TF---	KHYY LVKYGLTIQN
Oryza_sativa_Ja	MNAENSF---	---	PRK EGYLGPLEYS	SY---	ADYY KQKYGVELIY
Arabidopsis_tha	MSAETSF---	---	PRK EGYLGPLEYN	TY---	ADYY KQKYGVDLNC
Neurospora_cras	MKPTDPVPDG	IVAPNHRWR	GLGTTHDILN	YS---	NSLW SKSRGFMIFQ
Chaetomium_glob	MKPTDMVPEG	IVTPGHRWR	VSCKTHDILN	YS---	LSAW SKSRAFLTPR
Coccidioides_im	LRPSDPPPS-	---	SMARR RHMGNIMDYC	LS---	LFKN ARKKFLENC
Aspergillus_nig	LTPSSPPPP-	---	FVARR RHMNDVMNYC	LS---	LSKN SRAKFLSTCH
Aspergillus_fum	LQPSDPPPP-	---	SVPRR RYMNNIMNYT	LS---	LSKN SRARFLSSCD
Aspergillus_cla	LRAADPPPS-	---	SVPRR RHMDNIMSYC	LS---	LSKN SRARFLAGCH
Phaeosphaeria_n	LKPQDPVPA-	---	NVPRQ NHKFMKNILD	FS---	DSKW MKSRDITRWH
Schizosaccharom	PQSIYE---	---	---	QYAFEG FV---	NSEF MIPAKKK---
Emericella_nidu	RSRYGE---	---	---	LLIFKR WL---	NRSG DLEL--E---
Cryphonectria_p	FESVLP---	---	---	SKPPAE SI---	RKVY RGFDEDP---
Neosartorya_fis	GEPFL---	---	---	---	F--RKWL VSDQNPS---
Candida_albican	SLPSPRNTSD	EISEIDVIID	LDDDDDDDDNK	VNGHDKSQTT	ISKVQPIYEF
Kluyveromyces_l	HVP---	---	---	KIEE I---	LNTC QDMHTNTREK
Schizosaccharom	---	---	---	---	---
Consistency	4463432000	0000000001	0000223343	3400004433	4454344222
	.....1710.....1720.....1730.....1740.....1750				
Homo_sapiens	LNQPLLDVDH	TSSRLNLLTP	RHLNQKGKAL	PLSS	-----AEKRKA
Bos_taurus	LNQPLLDVDH	TSSRLNLLTP	RHLNQKGKAL	PLSS	-----AEKRKA
Mus_musculus	LNQPLLDVDH	TSSRLNLLTP	RHLNQKGKAL	PLSS	-----AEKRKA
Gallus_gallus	LNQPLLDVDH	TSSRLNLLTP	RHLNQKGKAL	PLSS	-----AEKRKA
Xenopus_tropica	LNQPLLDVDH	TSSRLNLLTP	RHLNQKGKAL	PLSS	-----AEKRKA
Danio_rerio	VNQPLLDVDH	TSSRLNLLTP	RHLNQKGKAL	PLSS	-----AEKRKA
Caenorhabditis	QNQSLLDVDF	TSTRNLNLQP	RIQNQPRRSR	TVSNSSTSN	PQASASDSKE
Drosophila_mela	TSQPLLDVDH	TSARLNFLTP	RYVNRKGVAL	PTSS	-----EETKRA
Oryza_sativa_Ja	ARKQPLIRARG	VSCKNLLSP	RFEHSDA---	---	-----REGDFS
Arabidopsis_tha	KQQPLIKGRG	VSCKNLLSP	RF-----E---	---	-----QSGESE
Neurospora_cras	ADQPVVEAAL	ISTRDFLD	---	---	-----D--TLR
Chaetomium_glob	EDQPVVEAEV	LPIRRNLID	---	---	-----D--HIG
Coccidioides_im	WTQPVIKAEI	IQLRRNLID	---	---	-----K--RTN
Aspergillus_nig	WDQPVLRAEL	VRLRRNLID	---	---	-----K--MTD
Aspergillus_fum	WNQPVLQAEI	VRLRRNLID	---	---	-----K--MTT
Aspergillus_cla	WDQPVLQAEI	VRLRRNLID	---	---	-----K--LTT
Phaeosphaeria_n	QDQPVQLQVEK	IPFRRNHILA	---	---	-----NVEDKE
Schizosaccharom	DKAPSALCKK	LPLRLNYSIW	GNRA	---	-----KSIPKS
Emericella_nidu	CDPYPSKRRN	LLQRQTLAKK	RPAE	---	-----DEILGS
Cryphonectria_p	TEATYLSVRK	WPKKTGFFHR	PCSP	---	-----QHSPST
Neosartorya_fis	CSVVELECAP	FPHRRNLHR	QRLA	---	-----NSQVDV
Candida_albican	SNKEDEGFLS	SSQTRELYKN	YYIA	---	-----IDSSDD
Kluyveromyces_l	-----IIG	MNRTNALARS	IGYN	---	-----RSVGME
Schizosaccharom	---	---	---	---	---
Consistency	2465454542	4436466642	2112101000	0010000000	0000432344
	.....1760.....1770.....1780.....1790.....1800				
Homo_sapiens	KWESL---	QN KQILVPELCA	IHPPIP--ASL	WRKAVCLPSI	LYRLFCLLTA
Bos_taurus	KWESL---	QN KQILVPELCA	IHPPIP--ASL	WRKAVCLPSI	LYRLFCLLTA
Mus_musculus	KWESL---	QN KQILVPELCA	IHPPIP--ASL	WRKAVCLPSI	LYRLFCLLTA
Gallus_gallus	KWESL---	QN KQILVPELCA	IHPPIP--ASL	WRKAVCLPSI	LYRLFCLLTA
Xenopus_tropica	KWESL---	QN KQILVPELCA	IHPVP--ASL	WRKAVCLPSI	LYRLFCLLTA
Danio_rerio	KWESL---	QN KQILVPELCA	IHPPIP--ASL	WRKAVCLPSI	LYRLFCLLTA
Caenorhabditis	SNTSVPHSSQ	RQILVPELMD	IHPIS--ATL	WNVIAALPSI	FYRVNQLLLT
Drosophila_mela	KREN---	EQ KQILVPELCT	VHPFP--ASL	WRTAVCLPCI	LYRTNGLLLA
Oryza_sativa_Ja	ENLDK---	TY YVYLPPELCL	VHPLP--GSL	VRGAQRLPSI	MRRVFSMLLA
Arabidopsis_tha	TVLDK---	TY YVFLPPELCV	VHPLS--GSL	IRGAQRLPSI	MRRVFSMLLA
Neurospora_cras	DEDVE---	PQ QCFILILEPMR	ISPIP--ADV	VAMLLCFPSI	IHRVESNLVA
Chaetomium_glob	DDDL---	PK PCFIVLEPLR	ISPLP--VDL	VAMAYNFPAI	MHRTISNLVA
Coccidioides_im	KEKIK---	EG DYYICLEPLT	ISAIP--ASV	AAFAFAFPFI	ISRTFSYLLA
Aspergillus_nig	TERDV---	ET RCFICIEPLK	VSAIP--AST	AFSCLAFPFI	ISRTIAYLLS
Aspergillus_fum	QEKEM---	QT ECFICAEPLR	ISALP--PSI	VSTCLAFPFI	ISRLISYLLA
Aspergillus_cla	EEKKI---	QT ECFICAEPLK	ISAIP--PSI	ASTCLAFPFI	ITRLDSYLLS
Phaeosphaeria_n	KKELA---	NL ETYICPEPLH	ISNLA--TPF	VVMCYVLPFI	IHRFESYLLA
Schizosaccharom	QQVR---	---	SFYINDLY--ILPVS--RHL	KNSALLIPSI	LYHTFNLLVA
			ASE	TVFGRFIPVI	LDRLEAALVA

	.....	1910.	.....	1920.	.....	1930.	.....	1940.	.....	1950.
Homo_sapiens	-----	SVN	CRTLLES	ESPG	KLHVEV	SA--	-----	-----	-----	DL
Bos_taurus	-----	SVN	CRTLFS	ESPG	KLQIEV	ST--	-----	-----	-----	DL
Mus_musculus	-----	SVN	CKRLPA	ESPA	KLQSEV	ST--	-----	-----	-----	DL
Gallus_gallus	-----	SVS	YRTLLE	DESPS	KLQIDV	SA--	-----	-----	-----	EL
Xenopus_tropica	-----	MQI	NDQMSV	----	NCTPPC	Q--	-----	-----	-----	KS
Danio_rerio	-----	NTP	DEKLET	----	LTLPVT	D--	-----	-----	-----	LN
Caenorhabditis	-----	LFN	IGVWD	PEEAV	RIGVEI	SSR-	-----	-----	-----	DD
Drosophila_mela	KLOEAD	DFIE	IGTWSN	DMAD	DIASFNO	EDD	DEDDAFHLPV	LPANVK	FCDO	

	1960		1970		1980		1990		2000	
Homo_sapiens	TAINGLSYNQ	NLANGSYDLA	NRDFCQGNQL	NYYKQEIPVQ	PTTS	-----				
Bos_taurus	TAINGLSYNK	SLANGSYDLA	NRDFCQGNHL	NYYKQEIPVQ	PTTS	-----				
Mus_musculus	TAINGLSYNK	NLANGSYDLV	NRDFCQGNQL	NYFKQEIPVQ	PTTS	-----				
Gallus_gallus	AAINGVSYNK	NLANGNCDLV	NRDFCQGNQL	NYCRQEIPVQ	PTTS	-----				
Xenopus_tropica	LSHLQTVCFs	---DDYKAIN	GISCNGLTNG	DWEAESAACF	QKDE	-----				
Danio_rerio	KDCFPNLPNG	TQADSDDLPH	RSDVCQCSQL	GPLERDLSTQ	TTTS	-----				
Caenorhabditis	RMDGEDQD--	TVGLTQGLHD	GNISDEDDEL	PVMHDYTAR	LTSNRNGIGA					
Drosophila_mela	QTRYGSPTFW	DVSNGESGFK	GPKSSQNKQG	GKGKAKGPAK	PTFN	-----				

Oryza_sativa_Ja	-	-	-	-	-
Arabidopsis_tha	-	-	-	-	-
Neurospora_cras	-	-	-	-	-
Chaetomium_glob	-	-	-	-	-
Coccidioides_im	-	-	-	-	-
Aspergillus_nig	-	-	-	-	-
Aspergillus_fum	-	-	-	-	-
Aspergillus_cla	-	-	-	-	-
Phaeosphaeria_n	-	-	-	-	-
Schizosaccharom	-	-	-	-	-
Emericella_nidu	-	-	-	-	-
Cryphonectria_p	-	-	-	-	-
Neosartorya_fis	-	-	-	-	-
Candida_albican	-	-	-	-	-
Kluyveromyces_l	-	-	-	-	-
Schizosaccharom	-	-	-	-	-
Consistency	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0

	2010			2020			2030			2040			2050		
Homo_sapiens	----	YSIQN	LYSYENQPP	SD	----	ECT	L L S N K Y L D G N	ANKSTSDG	----						
Bos_taurus	----	YPIQN	LYNYENQPKP	SD	----	ECT	L L S N K Y L D G N	ANTSTSDG	----						
Mus_musculus	----	YPIQN	LYNYENQPKP	SN	----	ECP	L L S N T Y L D G N	ANTSTSDG	----						
Gallus_gallus	----	YPIQN	LYSSENQPKP	SN	----	ECT	L L S N K Y L D G N	ANRSTSDG	----						
Xenopus_tropica	----	RITCK	QEIKEKSTSF	HV	----	QNL	P K E N Q P I L K E	CTLSNSDG	----						
Danio_rerio	----	VSVRP	SPAGEPQPWP	SD	----	ECT	G R S S D L C D P H	V K K P T S K H	----						
Caenorhabditis	WSGSES	I V P S	GWGDWDGPEP	DNSPMP	FQIL	GGPGGLNVQA	LMADVGRVFD								
Drosophila_mela	Y Y D S D N S L G S		SYDDDDNAGP	LN	----	Y M H H	NYSSDDDDVA	DDIDAGRI	----						
Oryza_sativa_Ja	-----				-----				-----						
Arabidopsis_tha	-----				-----				-----						
Neurospora_cras	-----				-----				-----						
Chaetomium_glob	-----				-----				-----						
Coccidioides_im	-----				-----				-----						
Aspergillus_nig	-----				-----				-----						
Aspergillus_fum	-----				-----				-----						
Aspergillus_cla	-----				-----				-----						
Phaeosphaeria_n	-----				-----				-----						
Schizosaccharom	-----				-----				-----						
Emericella_nidu	-----				-----				-----						
Cryphonectria_p	-----				-----				-----						
Neosartorya_fis	-----				-----				-----						
Candida_albican	-----				-----				-----						
Kluyveromyces_l	-----				-----				-----						
Schizosaccharom	-----				-----				-----						
Consistency	0000000000		0000000000		0000000000		0000000000		0000000000		0000000000		0000000000		

	.....	2060.....	2070.....	2080.....	2090.....	2100
Homo_sapiens	-----	SPVM	AVMPGTTDTI	QVLKGRMDSE	QSPSIGYSSR	TLGPNPGLIL
Bos_taurus	-----	SPVT	AAVPGTTETG	EAPPDRTASE	QSPSPGYSSR	TLGPNPGLIL
Mus_musculus	-----	SPAV	STMPAMMNAV	KALKDRMDSE	QSPSVGYSSR	TLGPNPGLIL
Gallus_gallus	-----	CPKM	TVTTSTSTAL	NLSKDKVDSE	KNTSSGYSSK	TLGPNPGLIL
Xenopus_tropica	-----	NVSK	PTSDECPSTC	TSDMHYDSGL	SNRHSSKTLG	---PNPGLIL
Danio_rerio	-----	CPKS	ETATSTPAPS	ETSSEDCRSA	CAGPAWDSPK	TLGPNPGLIL
Caenorhabditis	PSTASSLSQ	TVQESTVSP	KQLTKEEEQF	KKLQ	-----N	DLLKQAKERL
Drosophila_mela	-----AFTS	KNEAETIETA	QEVEKRQKQL	SIIQATNANE	RQYQQTKNLL	
Oryza_sativa_Ja	-----		-PATKILEAL	TAASCQ	----	E-----
Arabidopsis_tha	-----		-PTSKILEAL	TAASCQ	----	E-----
Neurospora_cras	-----		-RPDLALEAF	TKDSDN	----	----SDEHDA
Chaetomium_glob	-----		-RPDLALEAF	TKDSDN	----	----SGEHDA
Coccidioides_im	-----		-SPELALEAL	TKDSDN	----	----TDEHRA
Aspergillus_nig	-----		-KLDLALEAF	TKDSDN	----	----TDEHRA
Aspergillus_fum	-----		-RPDFALEAF	TKDSDN	----	----TEEHRG
Aspergillus_cla	-----		-RSDYALEAV	TKDSDN	----	----TEEHRG
Phaeosphaeria_n	-----		-SPALALEAL	TKDSDN	----	----SEEHGE
Schizosaccharom	-----		-KIDTACQAL	TSAESQL	----	-----
Emericella_nidu	-----		-----QF	QDLRHVITAI	TMPLAQA	----
Cryphonectria_p	-----		-----RI	SNVSMLVEAI	CAKSART	----
Neosartorya_fis	-----		-----GF	KSTDHIITAI	STPFAHA	----
Candida_albican	-----		-----	-----	-----	-----
Kluyveromyces_l	-----		-----	-----	-----	-----
Schizosaccharom	-----		-----	-----	-----	-----
Consistency	0000000000	0000000000	1333233453	4324330000	0000212111	

	..... 2110	2120	2130	2140	2150
Homo_sapiens	QALTLSN---	-ASDGFNLER	LEMLGDSFLK	HA-----	-----
Bos_taurus	QALTLSN---	-ASDGFNLER	LEMLGDSFLK	HA-----	-----
Mus_musculus	QALTLSN---	-ASDGFNLER	LEMLGDSFLK	HA-----	-----
Gallus_gallus	QALTLSN---	-ASDGFNLER	LEMLGDSFLK	HA-----	-----
Xenopus_tropica	QALTLSN---	-ASDGFNLER	LEMLGDSFLK	HA-----	-----
Danio_rerio	QALTLSN---	-ASDGFNLER	LEMLGDSFLK	HA-----	-----
Caenorhabditis	EALEMS---	DMEKPRRLED	TVNLEDYGD	Q-----	-----
Drosophila_mela	IGFNFKHEDQ	KEPATIRYEE	SIAKLKTEIE	SGGMLVPHDQ	QLVLKRSDAA
Oryza_sativa_Ja	-----	---TLCYER	AELLGDAYLK	W-----	-----
Arabidopsis_tha	-----	---TFCYER	AELLGDAYLK	W-----	-----
Neurospora_cras	EKENFQT---	--GMGDNYER	LEFLGDSFLK	M-----	-----
Chaetomium_glob	EQISFQS---	--GMGNMYER	LEFLGDCFLK	M-----	-----
Coccidioides_im	QQIHFQR---	--GMGKNYER	LEFLGDCFLK	M-----	-----
Aspergillus_nig	QQIHFQR---	--GMGRNYER	LEFLGDCFLK	M-----	-----
Aspergillus_fum	QQIHFQR---	--GMGKNYER	LEFLGDCFLK	M-----	-----
Aspergillus_cla	QQIHFQR---	--GMGKNYER	LEFLGDCFLK	M-----	-----
Phaeosphaeria_n	EKINFKS---	--GMGPNYER	LEFLGDCFLK	V-----	-----
Schizosaccharom	-----	---NFDYDR	LEFYGDCFLK	L-----	-----
Emericella_nidu	-----	---PTDYQR	YEFFGDSVLK	F-----	-----
Cryphonectria_p	-----	---PENYER	IEFLGDSILK	T-----	-----
Neosartorya_fis	-----	---LTNYQR	YEFLLGDSILK	F-----	-----
Candida_albican	-----	-----	-----	-----	-----
Kluyveromyces_l	-----	-----	-----	-----	-----
Schizosaccharom	-----	-----	-----	-----	-----
Consistency	2 2 2 1 2 2 1 0 0 0	0 0 2 1 4 2 5 5 6 6	4 6 4 6 6 7 4 4 6 6	2 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0

	..... 2160	2170	2180	2190	2200
Homo_sapiens	---ITT-YLF	CTYPDAHEGR	LSYMRSKKVS	NC-----NL	YRLG---KK
Bos_taurus	---ITT-VSL	ALILDAHEGR	LSYMRSKKVS	NC-----NL	YRLG---KK
Mus_musculus	---ITT-YLF	CTYPDAHEGR	LSYMRSKKVS	NC-----NL	YRLG---KK
Gallus_gallus	---ITT-YLF	CTYPDAHEGR	LSYMRSKKVS	NC-----NL	YRLG---KK
Xenopus_tropica	---ITT-YLF	CTYPDAHEGR	LSYMRSKKVS	NC-----NL	YRLG---KK
Danio_rerio	---ITT-YLF	CTYPDAHEGR	LSYMRSKKVS	NC-----NL	YRLG---KK
Caenorhabditis	---ENQEDEN	TPTNF--PKT	IDEEIEELSI	GAR-----KK	QEIDDNAAKT
Drosophila_mela	EAQVAKVSMM	ELLKQLLPYV	NEDVLAKKLG	DRRELLLSDL	VELNADWVAR
Oryza_sativa_Ja	---VVSRLF	LKYPQKHEGQ	LTRMRQQMVS	NM-----VL	YQYA---LN
Arabidopsis_tha	---VVSRLF	LKYPQKHEGQ	LTRMRQQMVS	NM-----VL	YQFA---LV
Neurospora_cras	---ATTIAIY	TLIPDKGEFE	YHVERMLLIC	NK-----NL	FNNA---LE
Chaetomium_glob	---ATTISIF	TLIPDKAEFE	YHVERMLLIC	NR-----NL	FNNA---LE
Coccidioides_im	---ATSISLF	AMNPDNDERG	WYPGGLTLLQ	GK-----GQ	SKGA---TE
Aspergillus_nig	---ATSIALF	TQNPDDDEFD	YHVNRMLLIC	NK-----NL	FNAA---VD
Aspergillus_fum	---ATSIALF	SQNPNDDEFD	YHVNRMLLIC	NK-----NL	FNTA---IK
Aspergillus_cla	---ATSIALF	TQNPDDDEFD	YHVNRMLLIC	NK-----NL	FNTA---KK
Phaeosphaeria_n	---ATSLSVF	VQQPEENEFE	FHVRRMLMLC	NQ-----NL	META---VG
Schizosaccharom	---GASITVF	LKFPDTQEYQ	LHFNRKKIIS	NC-----NL	YKVA---ID
Emericella_nidu	---TVAASLF	YNNPNWHEGY	LTETLHALVQ	NA-----RL	TRAA---LD
Cryphonectria_p	---CITVNLA	ATKLHLPEGI	LSLMKDRLVS	NA-----RL	CRAA---CD
Neosartorya_fis	---SVSCQLF	FQHPNWHEGY	LSEGRAMIVQ	NP-----RL	AKAA---LD
Candida_albican	-----	-----	-----	-----	-----
Kluyveromyces_l	-----	-----	-----	-----	-----
Schizosaccharom	-----	-----	-----	-----	-----
Consistency	0 0 0 3 5 5 2 3 6 5	3 3 3 5 4 2 3 6 3 3	4 3 2 3 5 3 3 4 6 3	6 3 0 0 0 0 0 4 6	3 4 3 5 0 0 0 3 3

	2210	2220	2230	2240	2250
Homo_sapiens	KG-LPSR---	MVVSIMVVSIFDPPVNWLP	GYVVNQDKSN	TDK	
Bos_taurus	KG-LPSR---	MVVSIMVVSIFDPPVNWLP	GYVVNQDKSN	TEK	
Mus_musculus	KG-LPSR---	MVVSIMVVSIFDPPVNWLP	GYVVNQDKSN	SEK	
Gallus_gallus	KG-LPSR---	MVVSIMVVSIFDPPVNWLP	GYIVNQDKSN	TDK	
Xenopus_tropica	KG-SPSR---	MVVSIMVVSIFDPPVNWLP	GYIVNQDKN-	SDK	
Danio_rerio	KG-LPSR---	MVVSIMVVSIFDPPVNWLP	GYVVNQDKSS	TDK	
Caenorhabditis	DV-LERE---	NCEVLPVAINEKSR	SFSFEKESKA	ING	
Drosophila_mela	HE-QETYNVM	GCGDSFDNYN	DHHRLNLDEK	QLKLQYERIE	IEPPTSTKAI
Oryza_sativa_Ja	KT-LQSY---	IQADR	FAPSR-WAAP	GVLPVFDEES	REY
Arabidopsis_tha	KG-LQSY---	IQADR	FAPSR-WSAP	GVPPVFDDET	KDG
Neurospora_cras	IG-LEEY---	IRSMS	FNRRQ-WYPE	GLILKKGKSK	DAR
Chaetomium_glob	VK-LEEH---	IRSMA	FDRRS-WYPE	GLTLKKGKRK	DLT
Coccidioides_im	N--KHA---	LAD			
Aspergillus_nig	KE-IYKY---	IRSRG	FSRHT-WYPE	GLKLLQGKDH	SRK
Aspergillus_fum	KQ-IYRY---	IRSRG	FSRHI-WYPD	GLTLLHGKDH	STK
Aspergillus_cla	RQ-IYRY---	IRSRS	FSRHV-WYPD	GLTLLQGKDH	SKK
Phaeosphaeria_n	KKKLYKY---	VRTDA	FSRRN-WYPE	GLKLLRGKGL	KKT
Schizosaccharom	CE-LPKY---	ALSTP	LEIRH-WCPY	GFQKSTSDKC	RYA
Emericella_nidu	QG-LDAY---	IISNR	FTPRK-WSAP	LI--SEKLY	ASA
Cryphonectria_p	AE-LDQF---	LVTQQ	LVTKG-WQPP	YMSDLAKQDQ	EPE
Neosartorya_fis	TG-LDAY---	IVTKR	IASRK-WSAP	LISEKLER--	-VP
Candida_albican					
Kluyveromyces_l					
Schizosaccharom					
Consistency	3305343000	0000043332	5333215243	4322233522	2230000000

	2260	2270	2280	2290	2300
Homo_sapiens	WEKD	EMTKDCMLAN	GKLDEDEYEEE	DEEEESLMWR	APKEEAD-YE
Bos_taurus	WEKD	EMTKDCMLAN	GKLDDDFEEE	EEEEEDLMWR	AHKEDAD-DE
Mus_musculus	WEKD	EMTKDCMLAN	GKL--G--EA	CEEEEDLTWR	APKEEAE-DE
Gallus_gallus	WEKE	ETTKENLLAN	GKLDYD--DD	DEEDEDLMWR	LPKEETD-FE
Xenopus_tropica	WESN	ETSGEDVMVN	GKIDED--FD	DEEDEDLMWR	NPKEETD-FD
Danio_rerio	WDSD	ENKDLANGKA	SDDDEDE--DD	DDEPEEAEVE	PSKEDVN-V-
Caenorhabditis	RLIRQRSEE	YVSHIDSDIG	LGVSPCLLLT	ALTTSNAADG	MSLERFETIG
Drosophila_mela	TSAILPAGFS	FDRQPDVLVGH	PGPSPSIILQ	ALTMSNANDG	INLERLETIG
Oryza_sativa_Ja					
Arabidopsis_tha					
Neurospora_cras					
Chaetomium_glob					
Coccidioides_im					
Aspergillus_nig					
Aspergillus_fum					
Aspergillus_cla					
Phaeosphaeria_n					
Schizosaccharom					
Emericella_nidu					
Cryphonectria_p					
Neosartorya_fis					
Candida_albican					
Kluyveromyces_l					
Schizosaccharom					
Consistency	0000000000	0000000000	0000000000	0000000000	0001000000

	2310	2320	2330	2340	2350
Homo_sapiens	DDFLEYDQEH	IRFIDNMLMG	SGAFVKKISL	SPFSTTDSAY	EWKMPKKSSL
Bos_taurus	DDFLEYDQEH	IKFIDNMLMG	SGAFVKKISL	SPFSATDSAY	EWKMPKKSSL
Mus_musculus	DDFLEYDQEH	IQFIDSMLMG	SGAFVRKISL	SPFSASDSAY	EWKMPKKASL
Gallus_gallus	DDFLEYDQEH	IKFIDSMLMG	SGAFVKKISL	SHFSTTDSNY	EWKAPKKSSL
Xenopus_tropica	DDFLEYDQEH	IKFIDSMLMG	SGAFVKKIPL	SSFAPPDQNY	EWKAPKKPPL
Danio_rerio	EDDLEYYYEH	IRFIDSMLIG	SGAFGKKISL	QPTDPG--Y	EWKAPKKAHN
Caenorhabditis	DSFLKFATTD	YLYHTLLDQH	EGKLSFARSK	EV---SNCN	LYRLGKKLGI
Drosophila_mela	DSFLKYAITT	YLYITYENVH	EGKLSHLRSK	QV---ANLN	LYRLGRRKRL
Oryza_sativa_Ja	EPSIFDEES	TGCELQKESY	DDYADNMQED		
Arabidopsis_tha	GSSFFDEEQ	KPVSEENS--	DVFEDGEMED		
Neurospora_cras	QR				
Chaetomium_glob	RQ				
Coccidioides_im					
Aspergillus_nig	ATT--ESK				
Aspergillus_fum	LLS--EGK				
Aspergillus_cla	MLS--QAK				
Phaeosphaeria_n	EEDWLNVT				

	..... 2460	2470	2480	2490	2500
Homo_sapiens	DLHTEQCIAD	KSIADCVEAL	LGCYLTSCGE	RAAQ-----	LFLCSLGLKV
Bos_taurus	DLHTEQCIAD	KSIADCVEAL	LGCYLTSCGE	RAAQ-----	LFLCSLGLKV
Mus_musculus	DLHTEQCIAD	KSIADCVEAL	LGCYLTSCGE	RAAQ-----	LFLCSLGLKV
Gallus_gallus	DLHTEQCIAD	KSIADCVEAL	LGCYLTSCGE	RAAQ-----	LFLCSLGLKV
Xenopus_tropica	DLHTEQCIAD	KSIADCVEAL	LGCYLTSCGE	RAAQ-----	LFLCSLGLKV
Danio_rerio	DLHTEQCIAD	KSIADCVEAL	LGCYLTSCGE	RAAQ-----	LFLCSLGLKV
Caenorhabditis	NLLTQQHISD	KSIADAVEAL	IGVHLLTLGP	NPTL-----	KVMNWMGLKV
Drosophila_mela	NLVSQHSIPD	KSIADCVEAL	IGAYLIECGP	RGAL-----	LFMAWLGV RV
Oryza_sativa_Ja	DSSCYRVLSS	KT LADVVEAL	IGVYYVAGGK	IAAN-----	HLMKWIGIHA
Arabidopsis_tha	DLSSYRVLSS	KT LADVVEAL	IGVYYVEGGK	IAAN-----	HLMKWIGIHV
Neurospora_cras	-----HVLAD	KSIADVCEAL	IGAAYLTGQE	KGSF-----D	MAIKAVTAMV
Chaetomium_glob	-----HVLAD	KTIADVCEAL	IGAAYLTAQE	QTPP-----N	FDLAIRAVTV
Coccidioides_im	-----	KTIADVCEAL	IGACCLLASK	NHRF-----D	IAVKAVTALV
Aspergillus_nig	-----HALAE	KTIADVCEAL	IGAALLSGGP	DHRF-----D	MAVKAVTTLV
Aspergillus_fum	-----HALGE	KTIADVCEAL	IGASLLSGGP	EHRF-----D	MATKAVSALV
Aspergillus_cla	-----HALGE	KTIADVCEAL	IGACLLSGGP	EHRF-----D	MGVKAVSVFV

Phaeosphaeria_n	---	HN	LG		KSVADVCEAF	IGAAFMQHHK	GGQWTPNDWD	EAVKAVKLFA
Schizosaccharom	---	VL	QKLSV		KRIADMVEAS	IGACLLDSGL	DSAL	KICKSLSVGL
Emericella_nidu	---	STR	MSA		KVLADVVEAL	IGAAYIDGGL	HKAQ	SCIIVRFLPEI
Cryphonectria_p	---	SKR	ILSP		KTADVVEAL	IGVSFVDGGL	PKAL	ECIRLFIPEI
Neosartorya_fis	---	AKR	QMST		KVLADVVEAL	IGAAYMDGGH	ATAQ	ACIRRLLEPEI
Candida_albican	---							
Kluyveromyces_l	---							
Schizosaccharom	---							
Consistency	1102142544				7567745776	6743444353	3342000000	3353353436

		2510	2520	2530	2540	2550
Homo_sapiens	LPVIKRTDRE	KALCPTRENF	NSQQKNLSVS	CAAASVASSR	SSVLKDSEYG	
Bos_taurus	LPVIKRTDRE	KAMCPTRENF	TSQQKNLSGS	RAAASGAGYR	ASVLKDLEYG	
Mus_musculus	LPVIKRTSRE	KALDPAQENG	SSQQKSLSGS	C - AAPVGPR	SSAGKDLEYG	
Gallus_gallus	LPVIKRTDWE	STLCATGENC	NSEQKNLSPN	SVSACIVNSE	PSLYKDLEYG	
Xenopus_tropica	LPEVRKLVNT	TNVISASS -	-SYQNSTRDN	CTLTARTNTD	LSSCKGIDYG	
Danio_rerio	LPPEKQSSGG	SA			ELQYG	
Caenorhabditis	IQKDQ		- - - KSDVPSP	LLRFIDTPTN	PNASL	
Drosophila_mela	LPITR		- - - QLDGGNQ	EQRIPGSTKP	NAENVVTVYG	
Oryza_sativa_Ja					ELDPE	
Arabidopsis_tha					EDDPD	
Neurospora_cras	-K-			DKK	HRMISYGDY	
Chaetomium_glob	MVK			DKN	HTMTSYSDY	
Coccidioides_im	-S-			SDD	HNVLNWEQYS	
Aspergillus_nig	-N-			SPS	HKAERWKDYI	
Aspergillus_fum	-D-			SPS	HRVSCWKEYI	
Aspergillus_cla	-D-			SPS	HAVSRWKEYI	
Phaeosphaeria_n	-N-			SDD	HLMEKWTDY	
Schizosaccharom					LDISNWDEW	
Emericella_nidu					ELPETKLPR	
Cryphonectria_p					QPRPFSEVR	
Neosartorya_fis					NLHAVDTRT	
Candida_albican						
Kluyveromyces_l						
Schizosaccharom						
Consistency	1010000000	0000000000	0000000000	0000000111	1221222442	

		2560	2570	2580	2590	2600
Homo_sapiens	CLKIPPRCMF	D-HPDADKTL	NHLISGFENF	EKKINYRFKN	KAYLLQAFTH	
Bos_taurus	CLKIPPRCMF	D-HPEADRTL	RHLISGFENF	EKKINYRFKN	KAYLLQAFTH	
Mus_musculus	CLKIPPRCMF	D-HPDAEKTL	NHLISGFETF	EKKINYRFKN	KAYLLQAFTH	
Gallus_gallus	CLKIPPRCMF	D-HPDAEKTL	NHLISGFENF	EKKINYSFKN	KAYLLQAFTH	
Xenopus_tropica	YLKIPPRCMF	E-HPDAEKTL	DHLISGFENF	EKKINYPFKN	KAYLLQAFTH	
Danio_rerio	WLKIPPRCMF	E-HPDAERTL	NHLISGFLNF	ESKINYTFKN	KAYLLQAFTH	
Caenorhabditis		-N-FLNN	LWQQFQFTQL	EEKIGYRFKE	RAYLVQAFTH	
Drosophila_mela	AWPTPRSPIL	HFAPNATEEL	DQLLSGFEEF	EESLGYKFRD	RSYLLQAMTH	
Oryza_sativa_Ja	EIPPPK -PY	-DIPES	IMRSINFDTL	KGVLGIEFQN	KGLLVEAITH	
Arabidopsis_tha	EVDGTLKNV	-NVPES	VLKSIDFVGL	ERALKYEFKE	KGLLVEAITH	
Neurospora_cras	AVYQKPTWQ	-TESAN	SAQRDMAKKF	SERMGYKFKH	PRLLRSAFQH	
Chaetomium_glob	AAYSPPAWQ	-TAPCN	STQLDMAARF	EARMGYAFTH	PRLLRSAFQH	
Coccidioides_im	RLYSIPKYQ	-TAVVD	AAELDLAAQV	KKKLGYDFKY	PKLLRSFATH	
Aspergillus_nig	SFYTIPKYQ	-RRAAD	GAELYLSRKI	EEKLSYRFRY	PTLLGSAFTH	
Aspergillus_fum	TLYTLPKYQ	-TEKHR	GSEDDLARHV	EEELGYHFY	PRLLASAITH	
Aspergillus_cla	GLYKPPNYQ	-VRKAE	GAETNLALQV	EEKLGYHFY	PRLLCFAVTH	
Phaeosphaeria_n	AAYTKPKYQ	-TAGAT	ATQLDLAHKI	EMKHPYRFRY	PRLLRSAFIH	
Schizosaccharom	NNYFDLNTY	-ADSLR	NVQFPYSSYI	EETIGYSFKN	KKLLHLAFIH	
Emericella_nidu	PESMPMSKD	-H -K	KPHLIQENL	ENHIGYTFKD	KTLLMEALTH	
Cryphonectria_p	DILFGAAEP	-K -G	MKLPADLQLL	EQLIEYSFCE	KALLVEAVTH	
Neosartorya_fis	ATRSVAPES	-A -	-RHMMNERL	KDHIGYTFED	ESLLVEALTH	
Candida_albican						
Kluyveromyces_l						
Schizosaccharom						
Consistency	2322333230	0000032222	2233323334	6445473743	4457347557	

		2610	2620	2630	2640	2650
Homo_sapiens	ASYHYNTIT	-DCYQRLEFL	GDAILDYELIT	KHLYEDPRQH	SPGVLTDLRS	
Bos_taurus	ASYHYNTIT	-DCYQRLEFL	GDAILDYELIT	KHLYEDPRQH	SPGVLTDLRS	
Mus_musculus	ASYHYNTIT	-DCYQRLEFL	GDAILDYELIT	KHLYEDPRQH	SPGVLTDLRS	
Gallus_gallus	ASYHYNTIT	-DCYQRLEFL	GDAILDYELIT	KHLYEDPRQH	SPGVLTDLRS	
Xenopus_tropica	ASYHYNTIT	-DCYQRLEFL	GDAILDYELIT	KHLYEDPRQH	SPGVLTDLRS	
Danio_rerio	ASYHYNTIT	-DCYQRLEFL	GDAILDYELIT	KHLYEDPRQH	SPGVLTDLRS	
Caenorhabditis	ASYINNRTV	-GCYQRLEFL	GDAVLDMYIT	RYLFEDSRQY	SPGVLTDLRS	
Drosophila_mela	ASYTPNRLT	-DCYQRLEFL	GDAVLDMYIT	RHLYEDPRQH	SPGALTDLRS	
Oryza_sativa_Ja	ASRPSSGVS	-CYQRLEFV	GDAVLDMYIT	RHLFFTYTDL	PPGRLTDLRA	
Arabidopsis_tha	ASRPSSGVS	-CYQRLEFV	GDAVLDMYIT	RHLFFTYTSL	PPGRLTDLRA	

Neurospora_cras	PTYP	SLYERL	-PSYQRLEFL	GDALFDMVAV	DYLFRKFPA	DPQWLTEHKM
Chaetomium_glob	PTYP	SVYEKL	-PSYQRLEFL	GDALLDMASV	EFLFHRFPGA	DPQWLTEHKM
Coccidioides_im	PSYP	SAWARV	-PCYQRLEFL	GDALLDMACV	EHYHKHPDK	DPQWLTEHKM
Aspergillus_nig	PSYP	SAWAKV	-PCYQRLEFL	GDSLIDMVCV	EDLFARFPDR	DPQWLTEHKM
Aspergillus_fum	PSLP	STWGYR	VPCYQRLEFL	GDSLIDMVCV	EDLFRRFPDR	DPQWLSEHKM
Aspergillus_cla	PSTP	STWYFR	VPCYQRLEFL	GDSLIDMVCV	EDLFHRFPDR	DPQWLTEHKM
Phaeosphaeria_n	PSQP	FMWENI	-PSYQRLEFL	GDSLIDMAFI	MHLFYKYPDK	DPQWLTEHKT
Schizosaccharom	PSMM	SQGGIY	-ENYQQLEFL	GDAVLDDYIIV	QYLYKKYPNA	TSGELTDYKS
Emericella_nidu	PSCP	-YDTSI	-QSYQRLEFL	GDAVLDDMLIV	DLIRAHHVEC	QQGEMTKIKH
Cryphonectria_p	PSYN	-VSGTV	-ACYDRLEFI	GDAILDYIIV	EEVFALEPAL	ENWQMHLIRT
Neosartorya_fis	PSCD	-YDSTT	-QSYQRLEYL	GDAVLDDMVIV	SAIFNHPIQR	PQGDMTKIKH
Candida_albican	-	-	-	-	-	-
Kluyveromyces_l	-	-	-	-	-	-
Schizosaccharom	-	-	-	-	-	-
Consistency	4743232330	0357777776	7766774545	4365332343	4542765464	

	.....	2660.....	2670.....	2680.....	2690.....	2700
Homo_sapiens	ALVNNTIFAS	LAVKYDYHKY	FKAVS	-	-	-
Bos_taurus	ALVNNTIFAS	LAVKYDYHKY	FKAVS	-	-	-
Mus_musculus	ALVNNTIFAS	LAVKYDYHKY	FKAVS	-	-	-
Gallus_gallus	ALVNNTIFAS	LAVKYDYHKY	FKAVS	-	-	-
Xenopus_tropica	ALVNNTIFAS	LAVKYDYHKY	FKAIS	-	-	-
Danio_rerio	ALVNNTIFAS	LAVKYDYHKY	FKAVS	-	-	-
Caenorhabditis	ALVNNTIFAS	LAVKFEFQKH	FIAMC	-	-	-
Drosophila_mela	ALVNNTIFAS	LAVRHGFHGF	FRHLS	-	-	-
Oryza_sativa_Ja	AAVNNENFAR	VAVKHKLHVH	LRHGS	-	-	-
Arabidopsis_tha	AAVNNENFAR	VAVKHKLHLY	LRHGS	-	-	-
Neurospora_cras	AMVSNQFLCC	LSFHLGFNKC	IATMS	-	-	-
Chaetomium_glob	AMVSNQFLGC	LAVYLGPHRA	ISYCA	-	-	-
Coccidioides_im	AMVSNKFLGS	VAVRLGLHSH	LNHFS	-	-	-
Aspergillus_nig	AMVSNKFLGA	LAVKLGLHSH	LKYFS	-	-	-
Aspergillus_fum	AMVSNKFLGA	LSVKLGPHRR	IMAFS	-	-	-
Aspergillus_cla	AMVSNKFLGA	LAVKLGFHKK	IKAFS	-	-	-
Phaeosphaeria_n	PMVSNKFLGA	VCVKLGWHTH	MKQNT	-	-	-
Schizosaccharom	FYVCNKSLSY	IGFVLNLHKY	IQH	-	-	-
Emericella_nidu	AIVNGHLLAF	LCMQFKWAMP	SPLTPSIDTG	TETETE---	IISPPPKTIS	
Cryphonectria_p	ALVNADILGF	LIMEWSYKQM	GFEVCRANEG	DSDSKSSGDS	TSDKASPRLE	
Neosartorya_fis	AVVNANLLAF	LCMESATSEE	KLDVAQ	-	-TSKDSFAVT	
Candida_albican	-	-	-	-	-	-
Kluyveromyces_l	-	-	-	-	-	-
Schizosaccharom	-	-	-	-	-	-
Consistency	6575634553	6554334543	3333400000	0000000000	0000000000	

	.....	2710.....	2720.....	2730.....	2740.....	2750
Homo_sapiens	-	---PELFHV	IDDFVQFQLE	KNEMQGMDS	LRR---	SE-
Bos_taurus	-	---PELFHV	IDDFVQFQLE	KNEMQGMDS	LRR---	SE-
Mus_musculus	-	---PELFHV	IDDFVQFQLE	KNEMQGMDS	LRR---	SE-
Gallus_gallus	-	---PELFHV	IDDFVQFQME	KNEMQGMDS	LRR---	SE-
Xenopus_tropica	-	---PELFHV	IDDFVQFQLE	KNEMQGMDS	LRR---	SE-
Danio_rerio	-	---PELFHV	IDDFVQFQLE	KNEMQGMDS	LRR---	SE-
Caenorhabditis	-	---PGLYHM	IEKFVKLCSE	RNFDTNFNAE	MYMVTTEE-	
Drosophila_mela	-	---PGLNDV	IDRFVRIQQE	NGHCISEEY	LLS---	EEE-
Oryza_sativa_Ja	-	---SALETQ	IREFVKDVQE	ELLKPGFN-	-	-
Arabidopsis_tha	-	---SALEKQ	IREFVKEVQT	ESSKPGFN-	-	-
Neurospora_cras	-	---PSILKD	IAEYVTEIEE	ALETAKQEI	NAGKTADY-	
Chaetomium_glob	-	---SAIQKE	ITEYVTEIED	ALQSARDDAS	KTPCNRHAT	
Coccidioides_im	-	---TSLQSQ	ITNYVEEIEA	AELESGDPP-	-	-
Aspergillus_nig	-	---APLQSQ	ITQYAEIEIQ	AEGESEGAV-	-	-
Aspergillus_fum	-	---NPLQSQ	ITHYVEEIEE	AQAESQGAV-	-	-
Aspergillus_cla	-	---NPLQSQ	ITYYVEEIEE	AEAESGAV-	-	-
Phaeosphaeria_n	-	---AILSSQ	IRDYVVEVEE	AEREANGAV-	-	-
Schizosaccharom	-	-	ESAAMCDA	IFEYQELIEA	FRETAS---	
Emericella_nidu	LYSYLRYS	RPLPLHVEPE	SGSSNALTRH	NLLCPSILHA	LNNTTA---	
Cryphonectria_p	QTEVPILPWS	FMRQSSAELT	MEREITKARF	EELRDPILHA	MRSPTH---	
Neosartorya_fis	TSQESVELWR	FMRYRGQNLN	AARDASLARH	RAIRDEIASS	LLHAPH---	
Candida_albican	-	-	-	-	-	-
Kluyveromyces_l	-	-	-	-	-	-
Schizosaccharom	-	-	-	-	-	-
Consistency	0000000000	0000325223	5334533334	3332332321	2110000110	

	.....	2760.....	2770.....	2780.....	2790.....	2800
Homo_sapiens	-	-EDEEKEEDI	EVPKAMGDIF	ESLAGAIYMD	SGMSLETWVQ	
Bos_taurus	-	-EDEEKEEDI	EVPKAMGDIF	ESLAGAIYMD	SGMSLETWVQ	
Mus_musculus	-	-EDEEKEEDI	EVPKAMGDIF	ESLAGAIYMD	SGMSLEVWVQ	
Gallus_gallus	-	-EDEEKEEDI	EVPKAMGDIF	ESLAGAIYMD	SGMSLEMVWQ	

Xenopus_tropica	-----	-EDEEKEEDI	EVPKAMGDIF	ESLAGAIYMD	SGMSLETVWH
Danio_rerio	-----	-EDEEKEEDI	EVPKAMGDIF	ESLAGAIYMD	SGMSLETVWQ
Caenorhabditis	-----	-IDEGQEEDI	EVPKAMGDIF	ESVAGAIYLD	SGRNLDTTWQ
Drosophila_mela	-----	-CD--DAEDV	EVPKALGDVF	ESIAGAIFLD	SNMSLDVVWH
Oryza_sativa_Ja	-----	---SFGLGDC	KAPKVLGDIV	ESIAGAIFLD	SGYDTSVVWK
Arabidopsis_tha	-----	---SFGLGDC	KAPKVLGDIV	ESIAGAIFLD	SGKDTTAAWK
Neurospora_cras	-----SR	DYWVHITHAS	RLPKCLSDVV	EAYIGAI FVD	SEYDYSVVQN
Chaetomium_glob	PSPGDLPAES	FARDFWVRCS	RPPKCLPDVV	EAYVGAVFVD	SRYDFARVRA
Coccidioides_im	-----	---DAWTLTS	DPPKCLPDMV	EAYIGAI FID	SGFSFEVVEE
Aspergillus_nig	-----	---DYWTVTK	DPPKCLPDMV	EAYVGAVFVD	SDFNFEVIER
Aspergillus_fum	-----	---DYWVVAK	DPPKCLPDMV	EAYLGAI FVD	SKFDFQVIEA
Aspergillus_cla	-----	---DYWVVAK	DPPKCLPDMV	EAYLGAI FVD	SDFSFEVIEA
Phaeosphaeria_n	-----	---DYWVSVS	EPPKCLADVI	EAFVAAI FVD	SEFDFNVVQK
Schizosaccharom	-----	-ENPFWFWEI	DSPKFISDTL	EAMICAIFLD	SGFSLQSLQF
Emericella_nidu	-----	-YPWSLFSAI	HADKFFSDVV	ESIIGAI FVD	SGGDLGACAG
Cryphonectria_p	-----	-YPWALFARL	HAQKFYSDF	EALVGAIWVD	AGPGFDACRA
Neosartorya_fis	-----	-YPWHALSRL	NADKFFSDIV	ESVLGAI FVD	SGGDLAPCEV
Candida_albican	-----	-----	-----	-----	-----
Kluyveromyces_l	-----	-----	-----	-----	-----
Schizosaccharom	-----	-----	-----	-----	-----
Consistency	0000000000	0113223333	4367354754	7644677657	7434444533

	.....	2810.	.....	2820.	.....	2830.	.....	2840.	.....	2850
Homo_sapiens	VYYPMM	---	RPLIEKFSAN	V	---	P	RSPVRELLEM	EPETAKFS	--	
Bos_taurus	VYYPMM	---	RPLIEKFSAN	V	---	P	RSPVRELLEM	EPEITKFS	--	
Mus_musculus	VYYPMM	---	QPLIEKFSAN	V	---	P	RSPVRELLEM	EPETAKFS	--	
Gallus_gallus	VYYPMM	---	RPLIEKFSAN	V	---	P	RSPVRELLEM	EPETAKFS	--	
Xenopus_tropica	VYYPMM	---	QPLIEKFSAN	V	---	P	RSPVRELLEM	EPETAKFS	--	
Danio_rerio	VYYPMM	---	RPLIEKFSAN	V	---	P	RSPVRELLEM	EPETAKFS	--	
Caenorhabditis	VIFHMM	---	RGTIELCCAN	P	---	P	RSPIRELMEF	EQSKVRFS	--	
Drosophila_mela	VYSNMM	---	SPEIEQFSNS	V	---	P	KSPIRELLEL	EPETAKFG	--	
Oryza_sativa_Ja	VFQPLL	---	HPMVTPETLP	M	---	HP	VRELQERCQQ	QAEGLEY	---	
Arabidopsis_tha	VFQPLL	---	QPMVTPETLP	M	---	HP	VRELQERCQQ	QAEGLEY	---	
Neurospora_cras	FFNMHV	---	LPFFEDMHLY	DTF	--	ANKHP	VTFFVANMAH	KFRCNEWRSF		
Chaetomium_glob	FFADHV	---	RPFFEDMRLY	DAF	--	ANKHP	VTFLAGIMQG	RMRCAEWRL	L	
Coccidioides_im	FFQKFL	---	KKHFEDMTIY	DTY	--	ANKHP	TTYLHNRLAI	DFGCSNYCL	-	
Aspergillus_nig	FFRDYI	---	KPFFEDMAIY	DTF	--	ANKHP	TTFLHNRLTN	EFGCVNYCL	-	
Aspergillus_fum	FFERQI	---	KPFFEDMSIY	DTF	--	ANKHP	TTFLHNKLTN	EYGCTNYCL	-	
Aspergillus_cla	FFQAQI	---	KPYFQDMSIY	DTF	--	ANKHP	TTFLHNRLAN	EFGCTNYCL	-	
Phaeosphaeria_n	FFDLHL	---	KPFFLDMTLD	AYENFASNHP			TTRL SRLLSI	NFGCSEWRMG		
Schizosaccharom	VLPLFL	---	NSLGDATAHTK	-A	---	KGDI	EHKVYQLLKD	QGCEDFGTKC		
Emericella_nidu	FIERLGLVRI		AKRILDERVD	-V	---	THPT	QRAQIELQKL	AARLGCNDGF		
Cryphonectria_p	FVARSGV	--L	PYLKRLLRDQ	VH	---	VLHP	KEELGRLAGR	ERVE	--YVVK	
Neosartorya_fis	FVERIGL	--M	AYLRRILDQE	ID	---	VRHP	RSVAQQLAKT	NIQF	--VLQR	
Candida_albican										
Kluyveromyces_l										
Schizosaccharom										
Consistency	4432340000		3434433433	2000001126			3425344542	5232334200		

	.....	2860.....	2870.....	2880.....	2890.....	2900		
Homo_sapiens	-----	-----	PA	ERTYDG	-----	KVRVTVEVV	G	-----
Bos_taurus	-----	-----	PA	ERTYDG	-----	KVRVTVEVV	G	-----
Mus_musculus	-----	-----	PA	ERTYDG	-----	KVRVTVEVV	G	-----
Gallus_gallus	-----	-----	PA	ERTYDG	-----	KVRVTVEVV	G	-----
Xenopus_tropica	-----	-----	PA	ERTYDG	-----	KVRVTVEVV	G	-----
Danio_rerio	-----	-----	PA	ERTYDG	-----	KVRVTVEVV	G	-----
Caenorhabditis	-----	-----	KM	ERILESG	-----	KVRVTVEVV	N	-----
Drosophila_mela	-----	-----	KP	EKLADGR	-----	RVRVTVDVF	C	-----
Oryza_sativa_Ja	-----	-----	KA	SRAGN	-----	IATVEVFVD	G	-----
Arabidopsis_tha	-----	-----	KA	SRSGN	-----	TATVEVFID	G	-----
Neurospora_cras	AKELDTDVTE	GRGGRGGNGA	VAGEISEINP	PKVVSALLVH	G	-----	-----	-----
Chaetomium_glob	VKDLPP	-----	VV	GAGAGTELET	PQVVC AVR VH	G	-----	-----
Coccidioides_im	-----	-----	KA	GEVPYVDGPG	TRVLA AVIVH	D	-----	-----
Aspergillus_nig	-----	-----	KA	GEMPSIDGAP	AGVLA AVIVH	D	-----	-----
Aspergillus_fum	-----	-----	KA	GELPTIDGAP	ATVLA AVIVH	G	-----	-----
Aspergillus_cla	-----	-----	KA	GEMPAIDGMP	AGVLA AVIVH	N	-----	-----
Phaeosphaeria_n	-----	-----	AL	ETETLIPGKG	KAIAAMVMIH	D	-----	-----
Schizosaccharom	V	-----	IE	EVKSSHK	-----	TLLNTELHLT	K	-----
Emericella_nidu	RFEC	-----	RT	VRDLSSG	-----	KRKTLEVDIN	DHYGDEDPAV	-----
Cryphonectria_p	-----	-----	ET	LKDDGDG	-----	KEWACEVRVG	G	-----
Neosartorya_fis	-----	-----	VP	NEEGG	-----	ASYQCSVRIE	Q	-----
Candida_albican	-----	-----	-----	-----	-----	-----	-----	-----
Kluyveromyces_l	-----	-----	-----	-----	-----	-----	-----	-----
Schizosaccharom	-----	-----	-----	-----	-----	-----	-----	-----
Consistency	0000000000	0000000034	3422321000	0353447272	4000000000	-----	-----	-----

	2910	2920	2930	2940	2950
Homo_sapiens	KG KFKG		--VGRS--Y	RIAKSAAARR	
Bos_taurus	KG KFKG		--VGRS--Y	RIAKSAAARR	
Mus_musculus	KG KFKG		--VGRS--Y	RIAKSAAARR	
Gallus_gallus	KG KFKG		--VGRS--Y	RIAKSAAARR	
Xenopus_tropica	KG KFKG		--VGRS--Y	RIAKSAAARR	
Danio_rerio	KG KFKG		--VGRS--Y	RIAKSAAARR	
Caenorhabditis	NM RFTG		--MGRN--Y	RIAKATAAKR	
Drosophila_mela	KG TFRG		--IGRN--Y	RIAKCTAAKC	
Oryza_sativa_Ja	VQ IGVA		--QNPQ--K	KMAQKLAARN	
Arabidopsis_tha	VQ VGVA		--QNPQ--K	KMAQKLAARN	
Neurospora_cras	KT VVHA		--VAAS--G	RYAKSAMAKK	
Chaetomium_glob	LT LAHA		--VAAS--G	RYGKIAAAKK	
Coccidioides_im	EV VAEG		--VASS--S	RYAKLKASEA	
Aspergillus_nig	VV IAEG		--TATS--G	RYAKVKASEK	
Aspergillus_fum	NV ISEA		--RSSS--S	RYAKITASEK	
Aspergillus_cla	SV VSEA		--TASS--S	RYAKIRASER	
Phaeosphaeria_n	KV HFHS		--LGQS--G	RYARVRASHA	
Schizosaccharom	YY GFSFFR---	---HGNIVA	--YGKS-RKV	ANAKYIMKQR	
Emericella_nidu	LGAEGPELTY	TCTISLATLR	TNQDFGRDLD	DIVVTGCLSK	EDAEIQAANL
Cryphonectria_p	R YVTD		--VTGC-LFK	EESRVKAATQ	
Neosartorya_fis	A ELFV		--VTGC-LTA	EEAEVTAAVE	
Candida_albican					
Kluyveromyces_l					
Schizosaccharom					
Consistency	000000032	333400000	000000000	0044350003	5366336644

	2960	2970	2980	2990	3000
Homo_sapiens	ALRSLKANQP			QVPNS	
Bos_taurus	ALRSLKANQP			QVPNS	
Mus_musculus	ALRSLKANQP			QVPNS	
Gallus_gallus	ALRSLKANQP			QVPNS	
Xenopus_tropica	ALRSLKANQS			QVPNS	
Danio_rerio	ALRSLKANQP			QVQNN	
Caenorhabditis	ALKYLHQIEQ			QRRQSPSLTT	
Drosophila_mela	ALRQLKKQGL			IAKKD	
Oryza_sativa_Ja	ALVVLKEKET	ATKKEDE---	RDGEKKNGAQ	MFTRQTLNDI	
Arabidopsis_tha	ALAALKKEKEI	AESKEKHINN	GNAGEDQGEN	ENGKKNKHQ	PFTROTTLNDI
Neurospora_cras	AIKLLLEGMSV			EEFRERLGCN	
Chaetomium_glob	AIQVLEGMDA			EAFRKAYGCA	
Coccidioides_im	ALSKLEGLPP			FRFREIYGCN	
Aspergillus_nig	ALAVLDEISS			AEFQRKFRCD	
Aspergillus_fum	ALAVLDGLLP			SEFCQKYRCD	
Aspergillus_cla	ALVVL DGLLP			YEFQRQRYNCN	
Phaeosphaeria_n	ALEKLEGLPP			YEFRSKYGCD	
Schizosaccharom	LLKLLLEDKSN			---LLLYSCN	
Emericella_nidu	VIELVGRLES			---GRLYKKN	
Cryphonectria_p	ACEILKRRK--				
Neosartorya_fis	AIKFLTRDEG			---STPLNTS	
Candida_albican					
Kluyveromyces_l					
Schizosaccharom					
Consistency	6633743332	0000000000	0000000000	0000000000	2213311111

	3010	3020	3030	3040	3050
Homo_sapiens					
Bos_taurus					
Mus_musculus					
Gallus_gallus					
Xenopus_tropica					
Danio_rerio					
Caenorhabditis	V				
Drosophila_mela					
Oryza_sativa_Ja	CLRRQWPMPQ	YRCVNEGGA	HAKRFVYSVR	VNTSDRGWTD	ECIGEPMPSPV
Arabidopsis_tha	CLRKNNWPMP	YRCVKEGGA	HAKRFTFGVR	VNTSDRGWTD	ECIGEPMPSPV
Neurospora_cras	C	KGVPMEVDGG	VPEADV---	---DG	EVHGTAV---
Chaetomium_glob	C	VLGEEEQQA	QTIATELEV	PAFSASGLEV	AHHGSAV---
Coccidioides_im	C	QAGQSEAGNE			
Aspergillus_nig	C	RESGDSAR-L	DIGTAI---		
Aspergillus_fum	C	KETKNSSSVV	EIGTAI---		
Aspergillus_cla	C	QVVGNPASAP	DIGTAI---		
Phaeosphaeria_n	C	VDEGEGEAGV	DEAAVSKKVE	L--MR	EAIGPSI---
Schizosaccharom	CK	FSKKKPSDEQ	IKGDGKVK-	LT	
Emericella_nidu	MD	LDIDTGVQVD	LDLDMNLDPG	ITT	

Cryphonectria_p	-----	-----	-----	-----	-----
Neosartorya_fis	-----	-----	-----	-----	-----
Candida_albican	-----	-----	-----	-----	-----
Kluyveromyces_l	-----	-----	-----	-----	-----
Schizosaccharom	-----	-----	-----	-----	-----
Consistency	1 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0

..... 3060..... 3070.....

Homo_sapiens	-----	-----	-----
Bos_taurus	-----	-----	-----
Mus_musculus	-----	-----	-----
Gallus_gallus	-----	-----	-----
Xenopus_tropica	-----	-----	-----
Danio_rerio	-----	-----	-----
Caenorhabditis_	-----	-----	-----
Drosophila_mela	-----	-----	-----
Oryza_sativa_Ja	KKAKDSAAVL	L L E L L N R D F P	D K P D G K Q P
Arabidopsis_tha	KKAKDSAAVL	L L E L L N K T F S	-----
Neurospora_cras	-----	-----	-----
Chaetomium_glob	-----	-----	-----
Coccidioides_im	-----	-----	-----
Aspergillus_nig	-----	-----	-----
Aspergillus_fum	-----	-----	-----
Aspergillus_cla	-----	-----	-----
Phaeosphaeria_n	-----	-----	-----
Schizosaccharom	-----	-----	-----
Emericella_nidu	-----	-----	-----
Cryphonectria_p	-----	-----	-----
Neosartorya_fis	-----	-----	-----
Candida_albican	-----	-----	-----
Kluyveromyces_l	-----	-----	-----
Schizosaccharom	-----	-----	-----
Consistency	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0

Figure S3. Phylogenetic tree derived from the alignment of Dicer proteins showed in Figure S1.

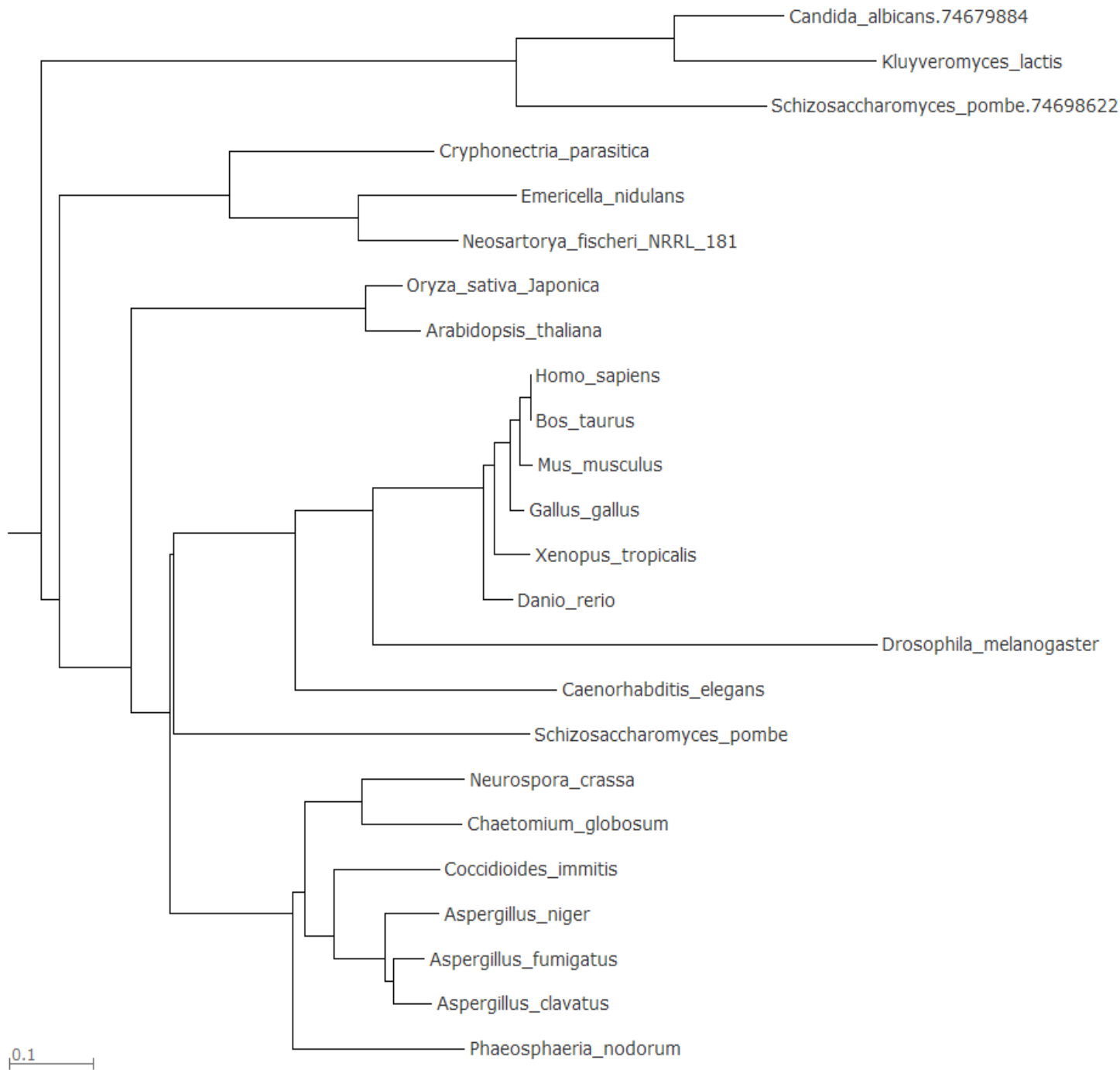


Figure S4. Alignment of human argonaute sequences with Multalin software [3,4]. Figure was generated with ESPrpt [5,6] including the secondary structure elements of human AGO2 crystal structure on the top.

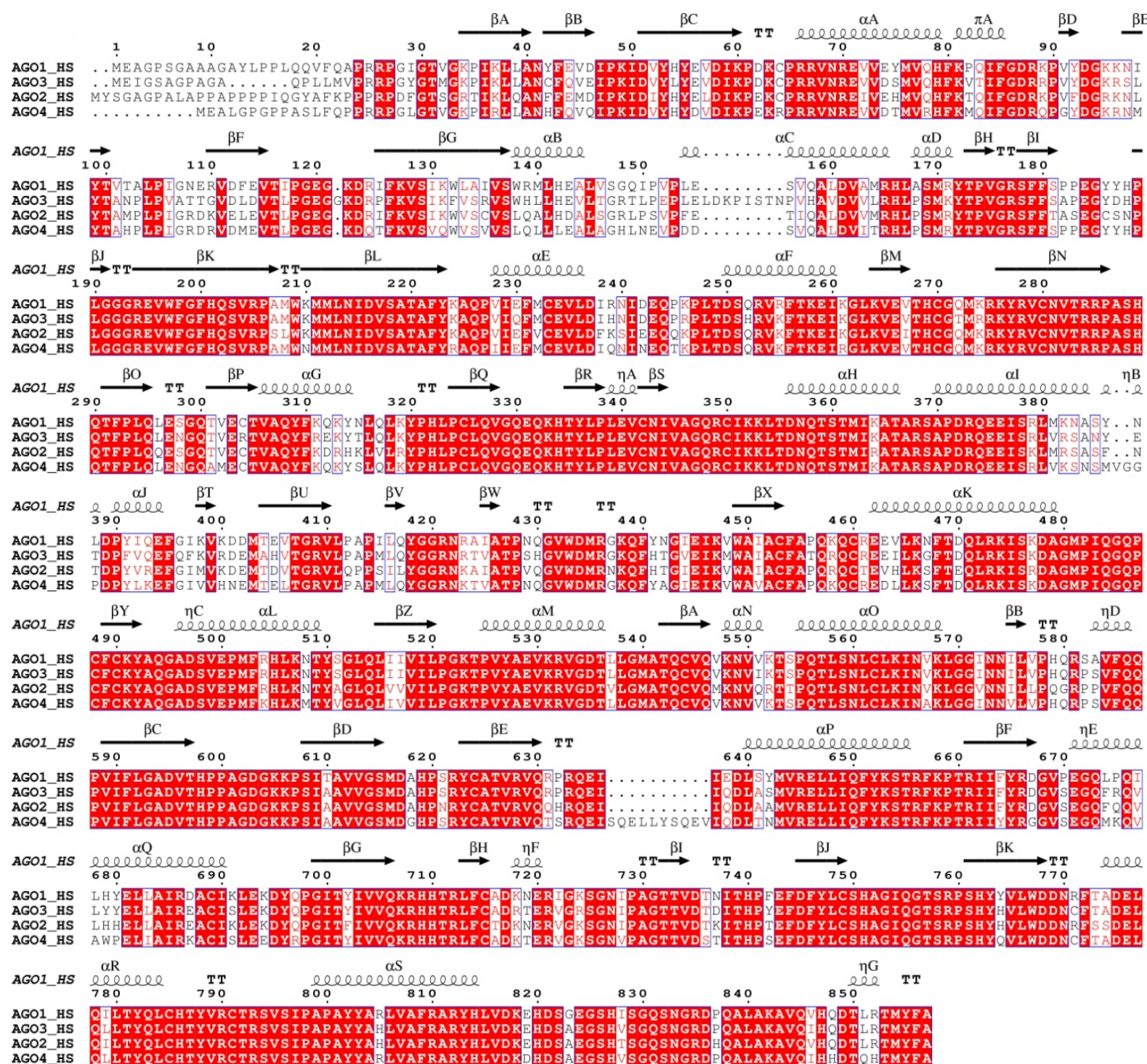
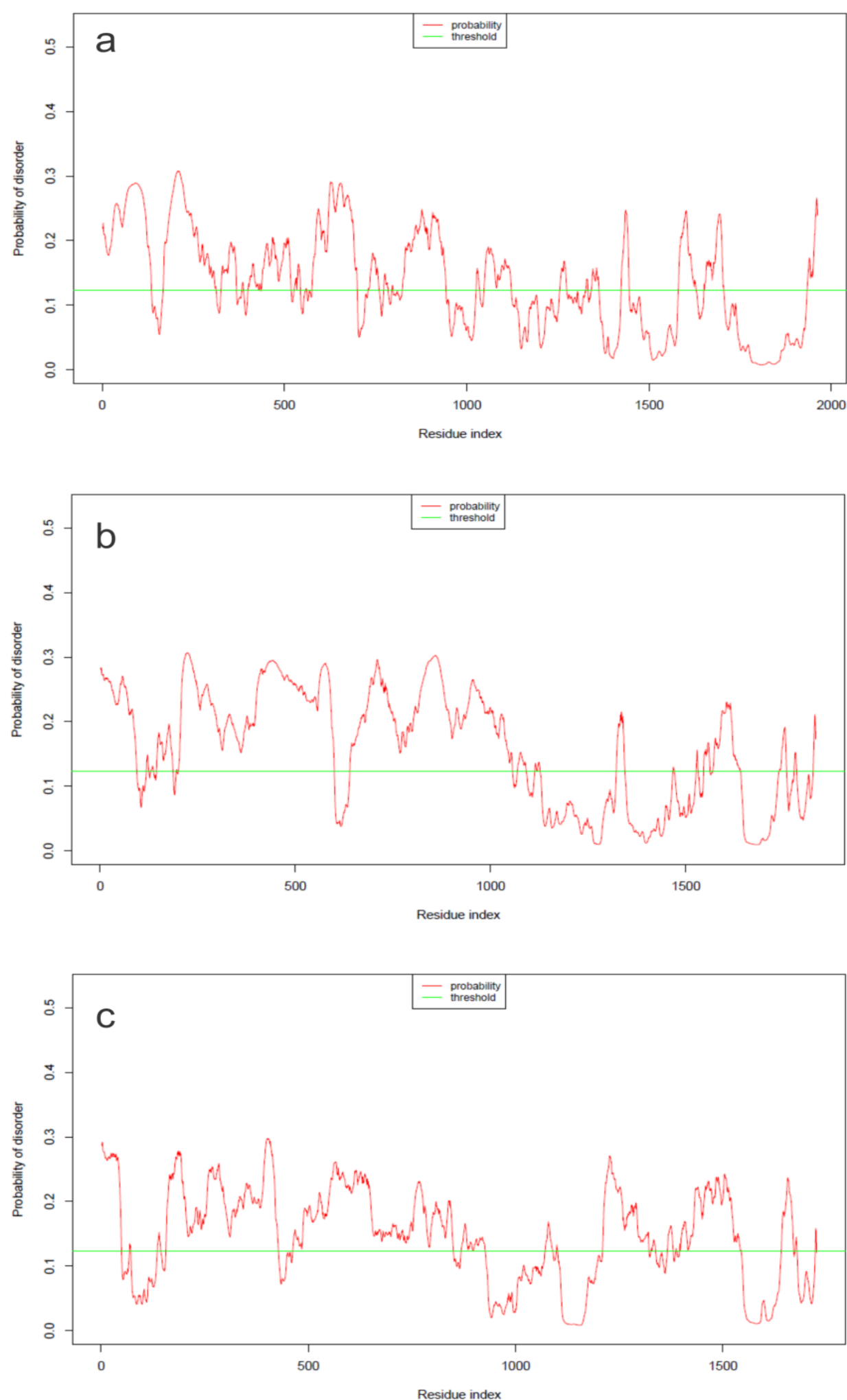


Figure S5. Disorder prediction by CSpritz [1] algorithm of human TNRC6 family of proteins. **(a)** TNRC6A, **(b)** TNRC6B and **(c)** TNRC6C.

Supplementary References

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