

Genome sequencing of *Rigidoporus microporus* provides insights on genes important for wood decay, latex tolerance and interspecific fungal interactions

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Supplementary Notes

Supplementary Note 1. Protocol for the isolation of *R. microporus* genomic DNA

BUFFER A: 0.35 M sorbitol
0.1 M Tris-HCl, pH 9
5 mM EDTA, pH 8

BUFFER B: 0.2 M Tris-HCl, pH 9
50 mM EDTA, pH 8
2 M NaCl
2% CTAB

BUFFER C: 5% Sarkosyl (N-lauroylsarcosine sodium salt, SIGMA L5125)

Potassium Acetate 5M (pH 7.5)
RNase A (10 mg/ml)
Proteinase K (20 mg/ml)
PVP 1 %Chloroform:Isoamylalcohol (24:1) or phenol/chloroform/isoamyl alcohol (25:24:1)
Sodium Acetate (NaAc) 3M
Isopropanol 100%
Ethanol 70%

Lysis Buffer for 17.5 ml:

2.5 volume of Buffer A: 6.5 ml
2.5 volume of Buffer B: 6.5 ml
1.0 volume of Buffer C: 2.6 ml
PVP 0.1 % 1.75 ml
Proteinase K (20 mg/ml) 125 µl

NB: phenol/chloroform/isoamyl alcohol (25:24:1) can be replaced by chloroform/Isoamyl alcohol (24:1)

1. Pre-warm the lysis buffer at 65°C.
2. Harvest mycelia in a cold Falcon 50ml tube. Up to 500mg can be used in a single extraction.
3. Grind the mycelia with liquid nitrogen and mortar/pestle.
4. Add the 17.5ml of LYSIS BUFFER and mix by inverting the tube several times until the powder mycelium is dissolved.
5. Incubate 30 min at 65°C and mix by gentle inverting frequently (every 2-3 min).
6. Add 5.75ml KAc (5 M). Mix by inverting the tube, and incubate 30 min on ice.
7. Centrifuge 20 min at 5000 g at 4°C.
8. Transfer the water phase in a new Falcon tube and add 1 volume of phenol/chloroform/isoamyl alcohol (25:24:1) and mix by inverting.
9. Centrifuge for 10 min at 4000 g at 4°C.
10. Transfer the supernatant in a new Falcon tube.

11. Add 1/10 volume of NaAc (3M) and 1 volume of isopropanol (at room temp) and incubate 5 min at room temperature.
12. Centrifuge 30 min at 10000 g at 4°C.
13. Discard supernatant and wash pellet with 2 ml 70% ethanol.
14. Centrifuge 10 min at 10000 g at 4°C.
15. Discard the supernatant and dry the pellet (around 10 min in laminar flow).
16. Resuspend the pellet in 500 µl (or less) TE buffer.
17. Transfer to a 1.5ml Eppendorf tube.
18. Add RNase A at 100 µg/ml final concentration and incubate at 37°C for 1 to 2 hr.
19. Add 1 volume of phenol/chloroform/isoamyl alcohol (25:24:1) and mix by inverting.
20. Centrifuge for 10 min at 4000 g at 4°C.
21. Transfer the supernatant in a new Eppendorf tube.
22. Add 1/10 volume of NaAc (3M) and 1 volume of isopropanol (at room temp) and incubate 5 min at room temperature.
23. Centrifuge 30 min at 10000 g at 4°C.
24. Discard supernatant and wash pellet with 1 ml 70% ethanol.
25. Centrifuge 10 min at 10000 g at 4°C.
26. Discard the supernatant and dry the pellet (around 10 min in laminar flow).
27. Resuspend the pellet in 100 µl (or less) TE buffer.
28. Store at -80°C.

Supplementary Note 2. Class-II peroxidases, multicopper oxidases and GMC oxidoreductases in the genome of *Rigidoporus microporus* ED310 v1.0

Class-II peroxidases

Manual annotation of the different peroxidase gene models

Six Class-II gene models were identified and manually annotated based on: i) the highest sequence identities for each protein sequence derived from the predicted gene; ii) multiple alignment with 145 heme peroxidase protein sequences from ten species of *Polyporales* and two species of *Hymenochaetales*; and iii) examination of theoretical molecular structures obtained by homology modeling using crystal structures of related peroxidases as templates and programs implemented by the automated protein homology modeling server “SWISS-MODEL”¹.

The six heme peroxidases could be annotated as manganese peroxidases on the basis of the presence of a Mn(II)-oxidation site near the internal heme propionate formed by three acidic residues homologous to *Phanerochaete chrysosporium* MnP1 Glu35, Glu39 and Asp179. They were subsequently classified as members of two MnP subfamilies differing in both catalytic properties and stability²: i) MnP-short (3 models with IDs 828329, 941094 and 947523) with Mn-mediated and Mn-independent activity on low redox potential substrates; and ii) MnP-long (3 models with IDs 830790, 857192 and 925201) only able to oxidize Mn²⁺, that include a C-terminal tail extension associated with their high acidic stability and catalytic properties.

A representation of the homology models obtained for two of the six MnPs identified in *R. microporus* ED310 v1.0, including key amino acid residues putatively involved in catalysis, is

presented in Fig. A. These models were obtained using different crystal structures of ligninolytic peroxidases deposited at PDB (<https://www.rcsb.org/pdb/home/home.do>) as templates.

Comparison with other Class-II peroxidases from Polyporales

MnPs derived from ancestral GPs were the first ligninolytic peroxidases to appear at the end of Carboniferous period by progressive incorporation of three acidic residues forming the Mn-oxidation site³. A well-supported explanation for the subsequent evolution of ligninolytic peroxidases from an ancestral MnP in the order *Polyporales* has been recently described by reconstruction and resurrection of ancestral peroxidases⁴. As a result of this evolutionary process, VPs arose by incorporation of a catalytic tryptophan in an ancestral MnP. Then the Mn(II)-oxidation site was lost in ancestral VPs giving rise to LiP enzymes several times independently in the evolution of *Polyporales*⁵. Unlike what is observed in white-rot *Polyporales*, MnPs are the only ligninolytic enzymes found in the *Hymenochaetales* genomes sequenced to date (including *R. microporus*)^{3,6} (**Table A1**), suggesting a different evolutionary history of these enzymes in both fungal orders. Concerning *Hymenochaetales*, the number of MnP isoenzymes identified in *R. microporus* (6 representatives) is significantly lower compared with that found in the other two species analyzed belonging to this order (12 and 16 representatives in *Schizopora paradoxa* and *Fomitiporia mediterranea*, respectively). However, the diversity of MnP subfamilies encoded in its genome (short and long MnPs) is intermediate between *F. mediterranea* (encoding short, long and atypical MnPs) and *S. paradoxa* (only containing long MnP genes).

We have prepared a phylogenetic tree by maximum likelihood analysis of 118 ligninolytic peroxidases identified in eleven *Polyporales* species (including those from *R. microporus*) (Fig. B). As observed in this tree, MnPs appear grouped in different clusters. Long MnPs from *R. microporus* are clustered together with the classical long MnPs from *P. chrysosporium*⁷ and the well characterized enzymes from *Ceriporiopsis subvermispota*⁸, although forming a separate group inside this cluster suggesting that some differences could exist between them (in catalytic activity, stability, etc.). Regarding the short MnPs, 947523 appears isolated, arising from the same ancestral node from which a large cluster comes out. On one hand, this large cluster follows the evolutionary path to LiPs (on the top). On the other hand, a small miscellaneous group emerges containing a few ligninolytic peroxidases, including the two other short MnPs from *R. microporus* (828329 and 941094) together with four additional short MnPs from *C. subvermispota*, *Bjerkandera adusta*, *Trametes versicolor* and *Phlebia brevispora*, two VP-LiP from *C. subvermispota* occupying an intermediate position between typical LiPs and VPs according to their structural and catalytic properties⁹ and one GP from *B. adusta*.

A phylogenetic tree was constructed by maximum likelihood analysis based on amino acid sequences of 143 ligninolytic peroxidases and eight generic non-ligninolytic peroxidases identified in ten *Polyporales* and three *Hymenochaetales* species (including *R. microporus*) (**Fig. B**). In the produced tree, MnPs from *R. microporus* appear grouped in three different regions of the tree. The long MnPs of this fungus are clustered with long MnPs identified in other *Hymenochaetales* species (i.e. *F. mediterranea* and *S. paradoxa*). Long MnPs from *Hymenochaetales*, in turn, form a well-defined cluster with that of long MnPs from *Polyporales*, including the classical MnPs from *P. chrysosporium* and the well-characterized enzymes from *Ceriporiopsis subvermispota*⁸. The

appearance of long MnPs from *Polyporales* and *Hymenochaetales* in two well-defined groups within the same cluster suggests that both groups come from a common ancestor that arose long before the appearance of the first fungi belonging to these two orders, and that their properties (e.g. catalytic activity, stability, etc.) most probably will be different, although this still has to be demonstrated.

Concerning short MnPs, 947523 from *R. microporus* appears grouped with a short MnP (ID 91941) from *F. mediterranea*, both *Hymenochaetales* enzymes arising from the same ancestral node from which a large cluster comes out. On one hand, this large cluster follows the evolutionary path to the *Polyporales* LiPs (on the top). On the other hand a miscellaneous group emerges containing ligninolytic peroxidases from different families, including: i) the two other short MnPs from *R. microporus* (828329 and 941094), which are closely related to the short MnP 123070 from *F. mediterranea*; ii) twenty two additional short MnPs from *Ceriporiopsis subvermispora*, *Bjerkandera adusta*, *Trametes versicolor*, *Ganoderma* sp., *Dichomitus squalens* and *Phlebia brevispora*; iii) two VP-LiP from *C. subvermispora* occupying an intermediate position between typical LiPs and VPs according to their structural and catalytic properties⁹; and iv) one GP from *B. adusta*.

Fig. A. Homology models for the molecular structures of two Class-II heme peroxidases from the *R. microporus* ED310 v1.0 genome. A) MnP-short (947523) and B) MnP-long (857192) harboring a putative Mn²⁺ oxidation site (formed by two glutamates and one aspartate).

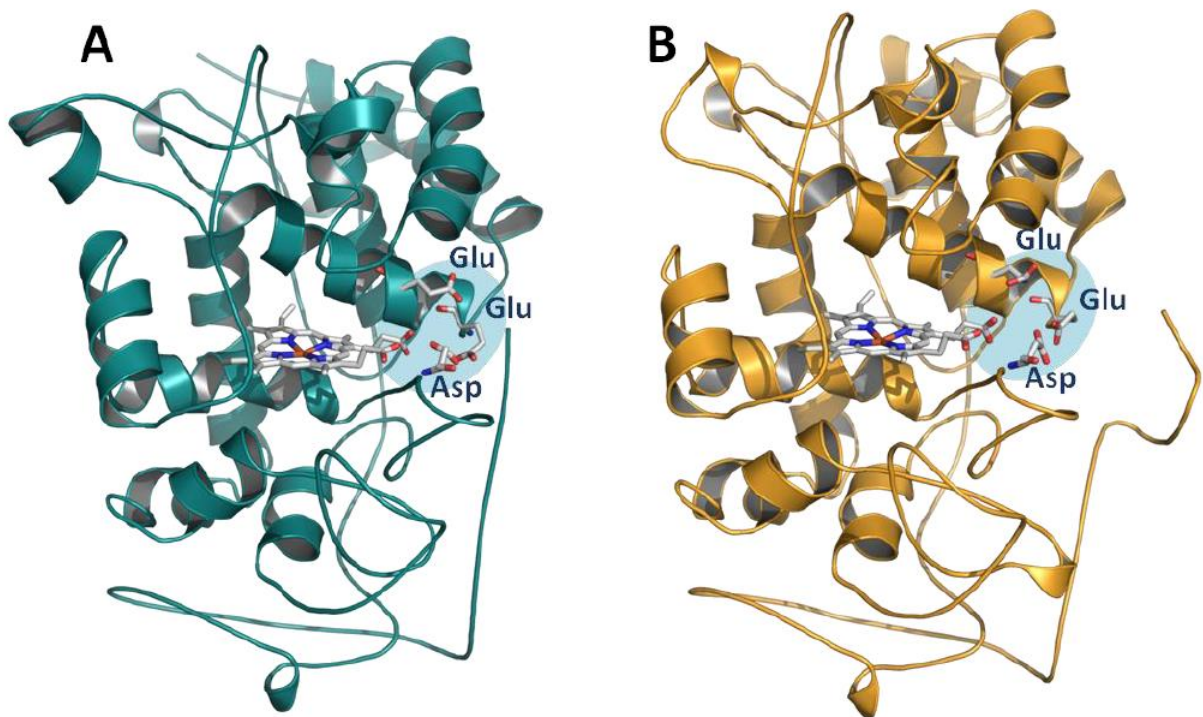


Table A1. Inventory of genes (151) of Class-II peroxidases (from the lignin peroxidase, LiP; versatile peroxidase, VP; generic peroxidase, GP families; and the short and long MnP subfamilies) in the genomes of ten species of *Polyporales* (Bjead, *Bjerkandera adusta*; Phlbr, *Phlebia brevispora*; Phach, *Phanerochaete chrysosporium*; Dicsq, *Dichomitus squalens*; Gansp, *Ganoderma* sp.; Trave, *Trametes versicolor*; Cersu, *Ceriporiopsis subvermispora*; Fompi, *Fomitopsis pinicola*; Pospl, *Postia placenta*; and Wolco, *Wolfiporia cocos*) and three species of *Hymenochaetales* (Fomme, *Fomitiporia mediterranea*; Schpa, *Schizopora paradoxa*; and Rigmi, *Rigidoporus microporus*) able to produce white-rot and brown-rot wood decay. Atypical MnPs and atypical VPs are characterized by lacking one of the three acidic residues (two glutamates and one aspartate) forming the Mn-oxidation site typical of MnPs and VPs.

Decay mode	Polyporales										Hymenochaetales		
	White-rot							Brown-rot			White-rot		
Fungal species	Bje ad	Phl br	Pha ch	Dic sq	Gan sp	Tra ve	Cer su	Fom pi	Pos pl	Wol co	Fom me	Sch pa	Rig mi
MnP-short	6	3	0	5	6	12	1	0	0	0	3	0	3
MnP-long	0	3	5	4	0	0	12	0	0	0	11	12	3
MnP-atypical	0	0	0	0	0	0	0	0	0	0	2	0	0
all MnP	6	6	5	9	6	12	13	0	0	0	16	12	6
LiP	12	5	10	0	0	10	1	0	0	0	0	0	0
VP	1	0	0	3	1	2	1	0	0	0	0	0	0
VP-atypical	0	0	0	0	1	1	0	0	0	0	0	0	0
Ligninolytic peroxidases	19	11	15	12	8	25	15	0	0	0	16	12	6
GP	1	0	1	0	0	0	1	2	1	1	1	4	0
All class II peroxidases	20	11	16	12	8	25	16	2	1	1	17	16	6

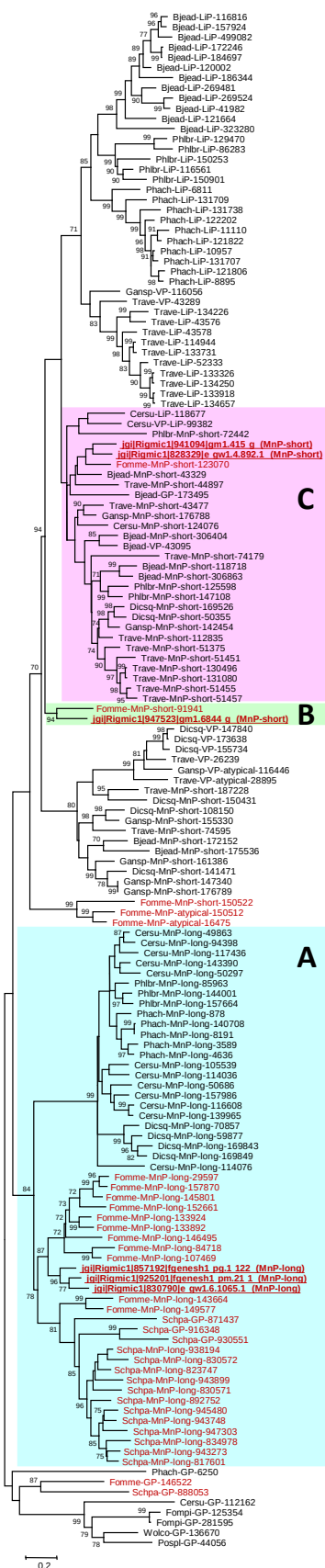


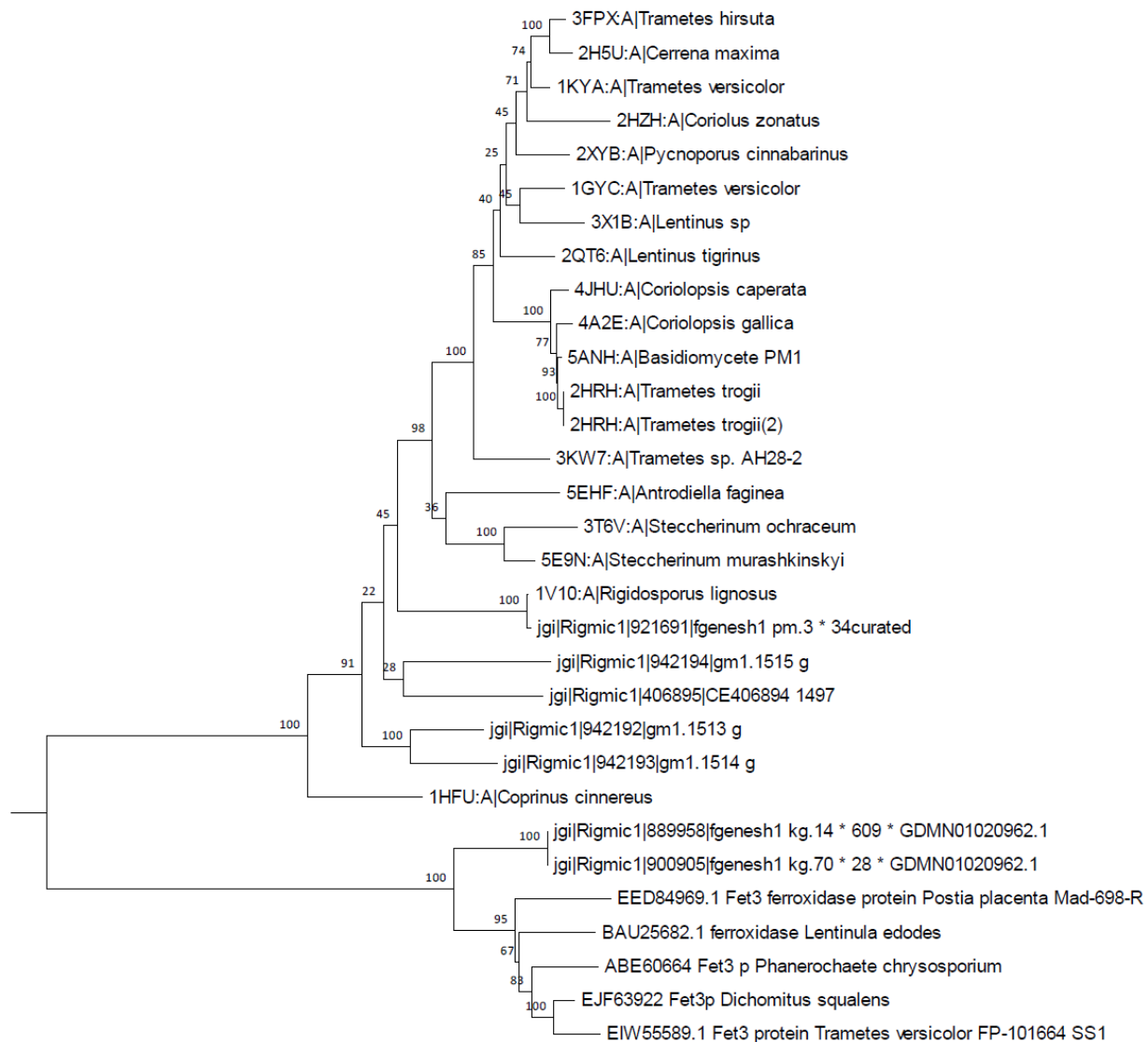
Fig. B. Maximum likelihood phylogenetic tree showing evolutionary relationships among 151 Class-II heme peroxidases from three species of *Hymenochaetales* (shown in red font) and ten species of *Polyporales* (shown in black font) genomes available through Mycocosm, including structural-functional classification based on ¹⁰. MnPs from *R. microporus* are shown in bold, underlined, red font. Numbers on branches represent bootstrap values supporting that branch; only the values $\geq 70\%$ are presented. Fungal abbreviations are as shown in **Table A1**. Peroxidase abbreviations: i) GP, generic peroxidase; ii) MnP-short and MnP-long, two different manganese peroxidase (MnP) subfamilies including a typical Mn(II)-oxidation site, formed by two glutamates and one aspartate residues, and differing in the length of their C-terminal tails; iii) LiP, lignin peroxidase harboring an exposed tryptophan residue located at the same position described for the catalytic Trp171 of *P. chrysosporium* LiP; iv) VP, versatile peroxidase including a Mn(II)-oxidation site like in MnP, and a catalytic tryptophan like in LiP; v) MnP-atypical and VP-atypical, MnP and VP lacking one of the three acidic residues forming the Mn(II)-oxidation site described above; and vi) VP-LiP intermediate states, two *Ceriporiopsis subvermispora* peroxidases occupying an intermediate position between typical LiPs and VPs according to their structural and catalytic properties ⁹. All enzymes are shown with their JGI identification number.

Multicopper oxidases

A total of seven multicopper oxidases (MCO) were identified found in *R. microporus* ED310 v1.0 genome. After multiple alignment with already know MCO proteins to search for conserved motifs and residues, the sequences were manually curated. In particular, 921691 sequence was curated to correct the intron/exon positions in two key regions of the protein. Then, a phylogenetic analysis of the seven *R. microporus* MCO protein sequences was performed with several basidiomycete laccase sequences with known crystal structure and several fungal ferroxidases (most of them from the order *Polyporales*). The tree was constructed by using the maximum likelihood method (Fig. C).

It was concluded that two out of the seven MCO sequences corresponded to ferroxidases (889958, 900905) similar to other fungal Fet3 proteins, while the other five sequences were laccases (921691, 942192, 942193, 942194, 406895).

Fig. C. Maximum likelihood tree for MCO proteins from *R. microporus* showing two separate clusters, one corresponding to laccases and the other to ferroxidases, respectively.



GMC oxidoreductase

The GMC oxidoreductase genes identified in *R. microporus* ED310 genome are summarized in Table A2. A phylogenetic tree was also prepared for the five GMC oxidoreductases from *R. microporus* and 94 enzymes identified in other 10 additional fungal genomes (Fig. D).

Table A2. GMC oxidoreductases in *Rigidoporus microporus* ED310 genome.

Query (GeneBank sequence)	Protein ID	Alignment values		
		Score	E value	% Identity
Glucose oxidase				
ABN79922 <i>Penicillium expansum</i>		No hits found		
AAD01493 <i>Penicillium amagasakiense</i>		No hits found		
CAD88590 <i>Botryotinia fuckeliana</i>		No hits found		
AAF59929 <i>Aspergillus niger</i>		No hits found		
EAS27606 <i>Coccidioides immitis</i>		No hits found		
JGI131961 <i>Phanerochaete chrysosporium</i> ¹	889492	1319	2.14e ⁻¹⁴³	50.7
	889470	1164	1.39e ⁻¹²²	57.4
	922063	1052	2.18e ⁻¹⁰⁷	51.9
Pyranose-2-oxidase				
ACJ54278 <i>Gloeophyllum trabeum</i>		No hits found		
BAD12079 <i>Lyophyllum shimeji</i>				
AAS93628 <i>Phanerochaete chrysosporium</i>				
AAO13382 <i>Peniophora</i> sp.				
Pyranose dehydrogenase				
AAW92124 <i>Agaricus bisporus</i>		No significant hits found		
AAW92123 <i>Agaricus xanthodermus</i>				
AAW82997 <i>Leucoagaricus meleagris</i>				
Aryl-alcohol oxidase				
AAC72747 <i>Pleurotus eryngii</i>	883086	1182	1.64e ⁻¹²⁰	45.9
	923690	1164	8.46e ⁻¹¹⁴	47.6
	861392	1193	5.98e ⁻¹⁰³	46.5
Methanol oxidase				
ABI14440 <i>Gloeophyllum trabeum</i>	946043	2833	0.0	82.8
AAF141329 <i>Pichia methanolica</i>	946043	1801	0.0	55.3
Q00922 <i>Candida boidinii</i>	946043	1745	0.0	52.8
AAV66467 <i>Candida boidinii</i>	946043	1646	0.0	51.2
Cellobiose dehydrogenase				
AAC50004 <i>Trametes versicolor</i>	925463	2014	0.0	56.8
CAA61359 <i>Phanerochaete chrysosporium</i>	925463	2011	0.0	53.8
ACF60617 <i>Gelatoporia subvermispora</i>	925463	1965	0.0	55.0
BAD32781 <i>Coniophora puteana</i>	925463	1903	0.0	57.2
AAC32197 <i>Pycnoporus cinnabarinus</i>	925463	1867	0.0	56.2

¹JGI ID protein 131961 corresponds to a previous version of *Phanerochaete chrysosporium* genome. In the actual version of *Phanerochaete chrysosporium* genome (v2.2) this protein has JGI ID protein 2910568.

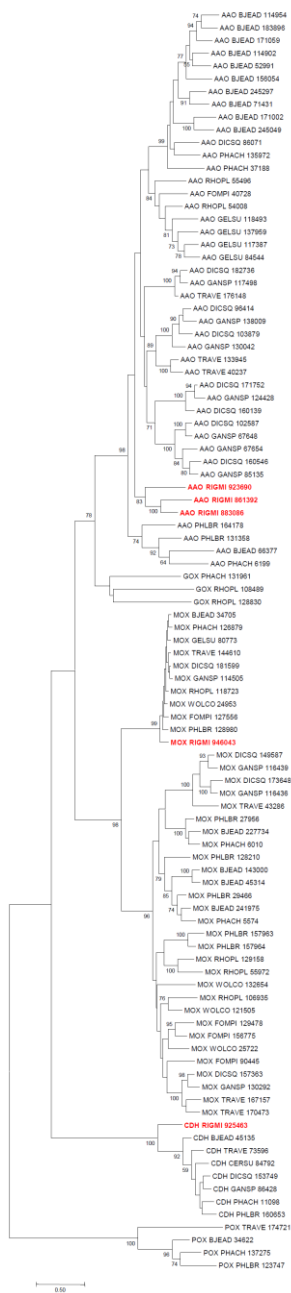
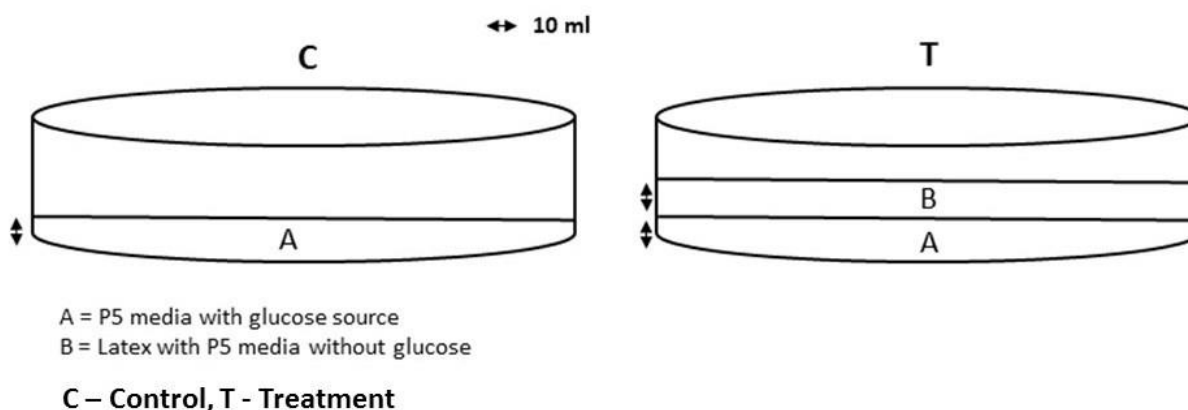
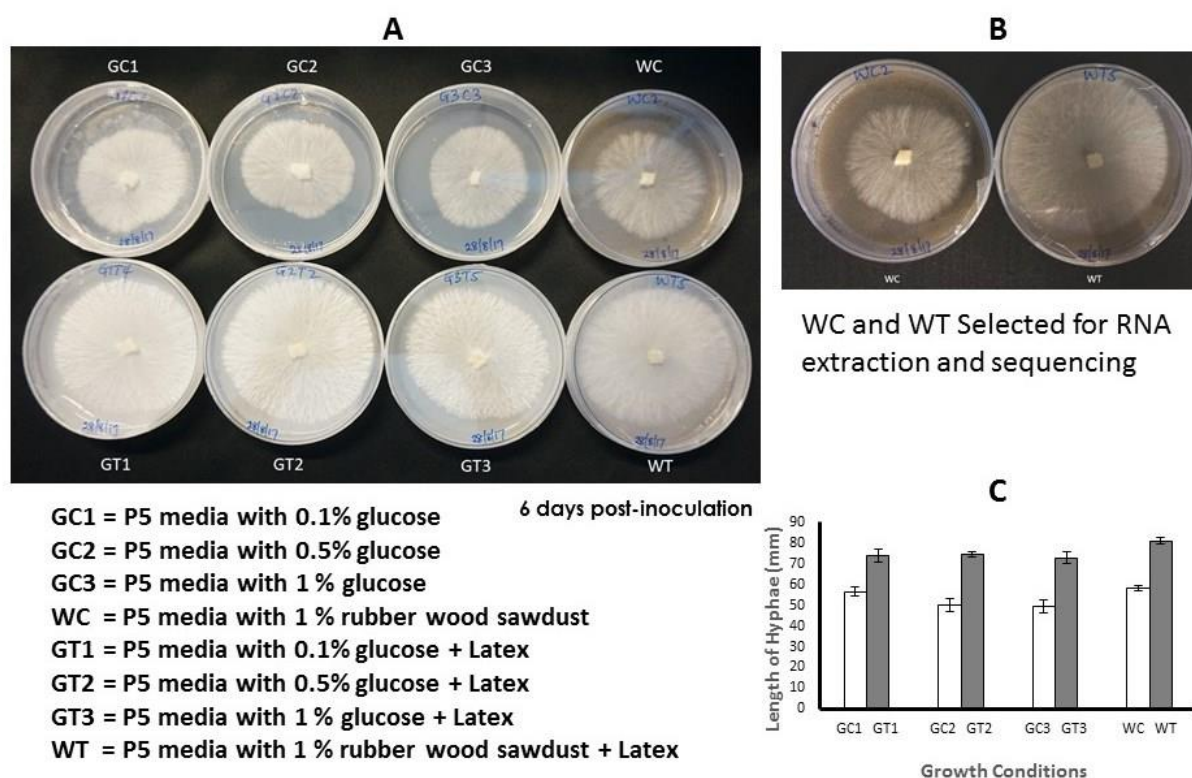


Fig. D. Phylogenetic tree showing evolutionary relationships among 99 GMC oxidoreductases identified in 11 fungal genomes (GMCs from *R. microporus* are shown in red letters). Numbers on branches represent bootstrap values supporting that branch; only the values $\geq 70\%$ are presented. Fungal abbreviations are the same as in Fig. B. All enzymes are shown with their JGI identification number.

Supplementary Figure 1. Scheme illustrating the preparation of plates overlaid with latex-containing medium and control plates (without latex overlay).

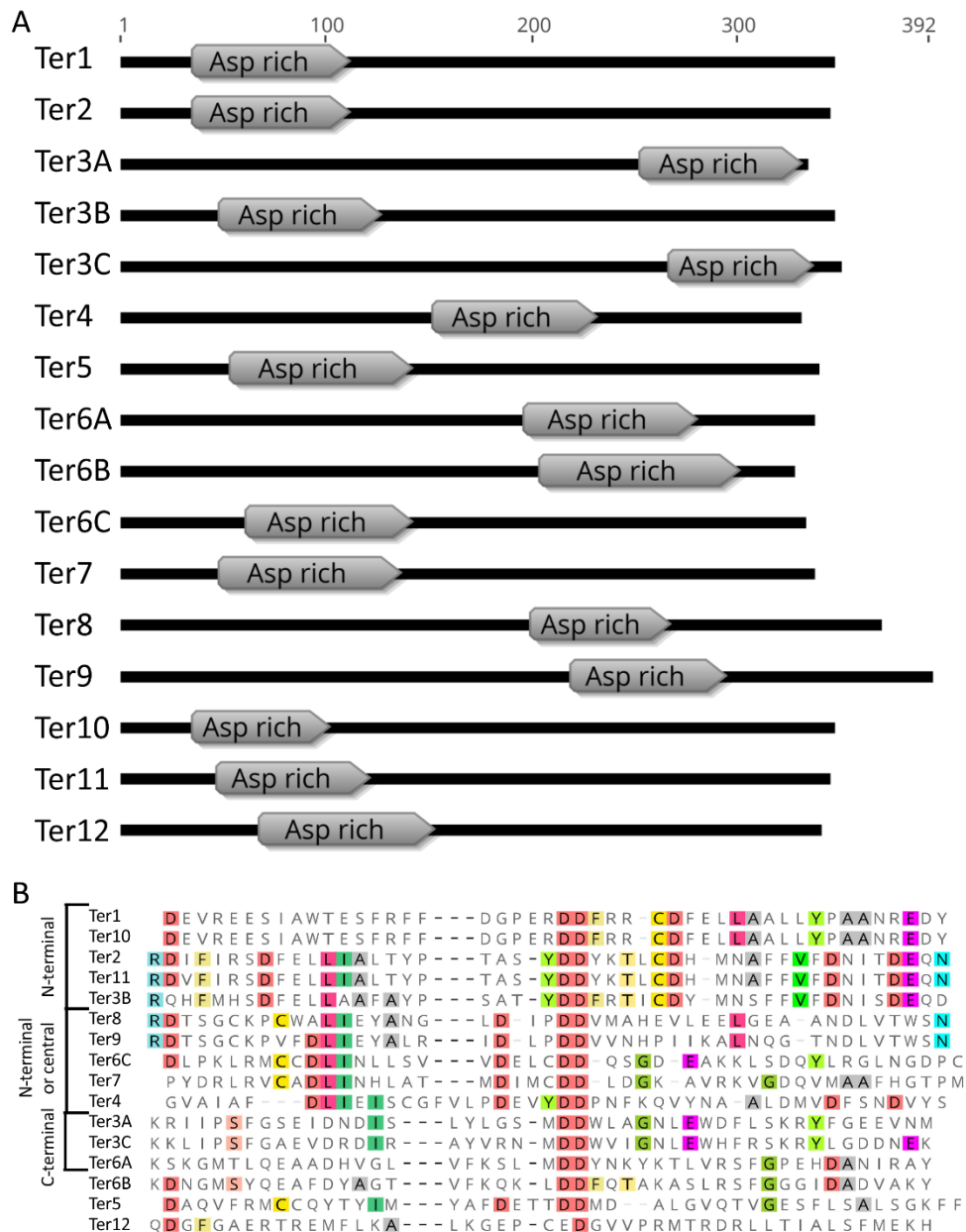


Supplementary Figure 2. Growth of *R. microporus* on latex-overlaid and control plates. (A) Mycelial growth after 6 days post inoculation (B) *R. microporus* grown on rubber wood dust and on latex (these samples were selected for RNA extraction and sequencing) (C) Colony size of *R. microporus* in mm after 6 days post inoculation.

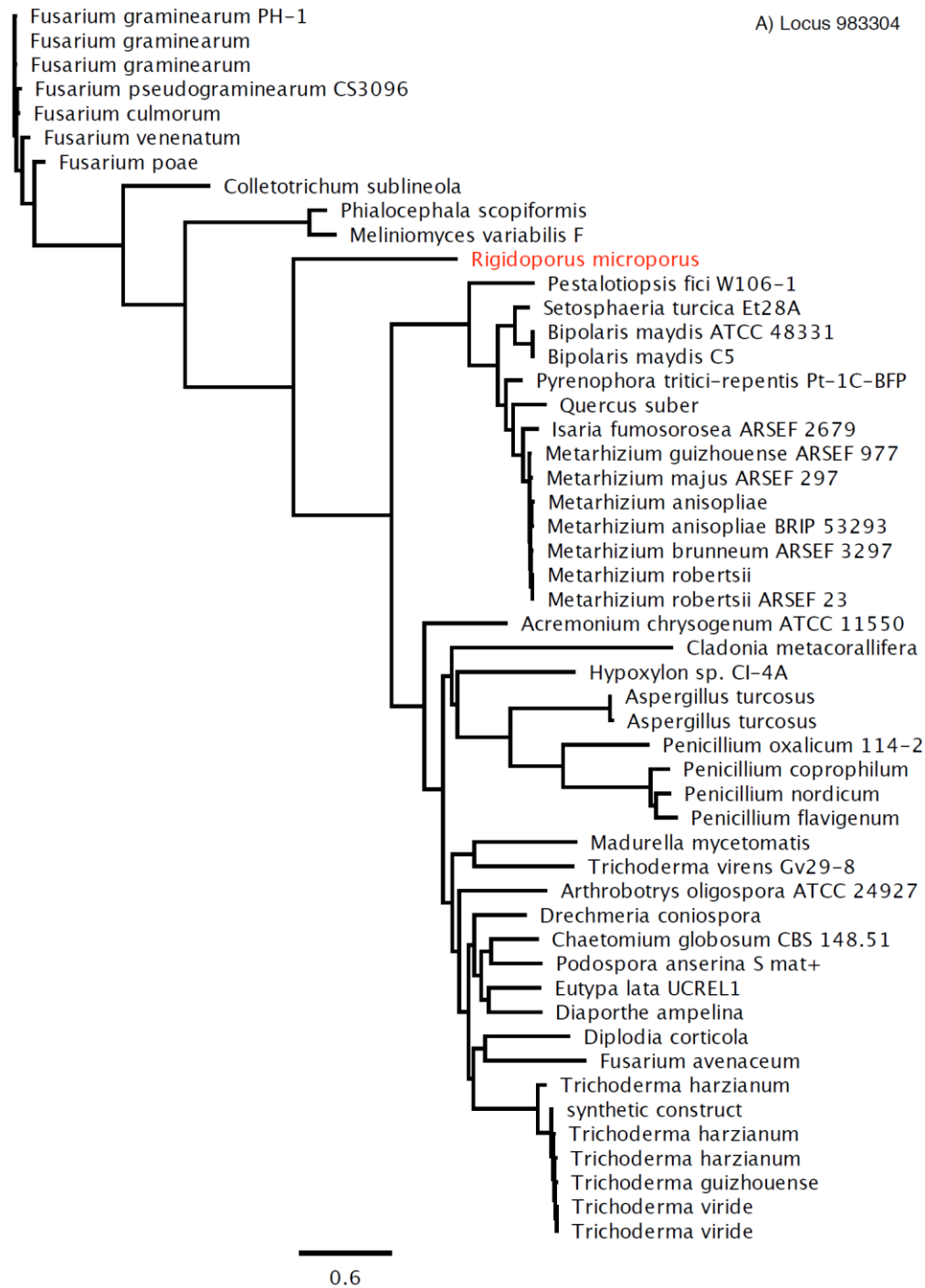


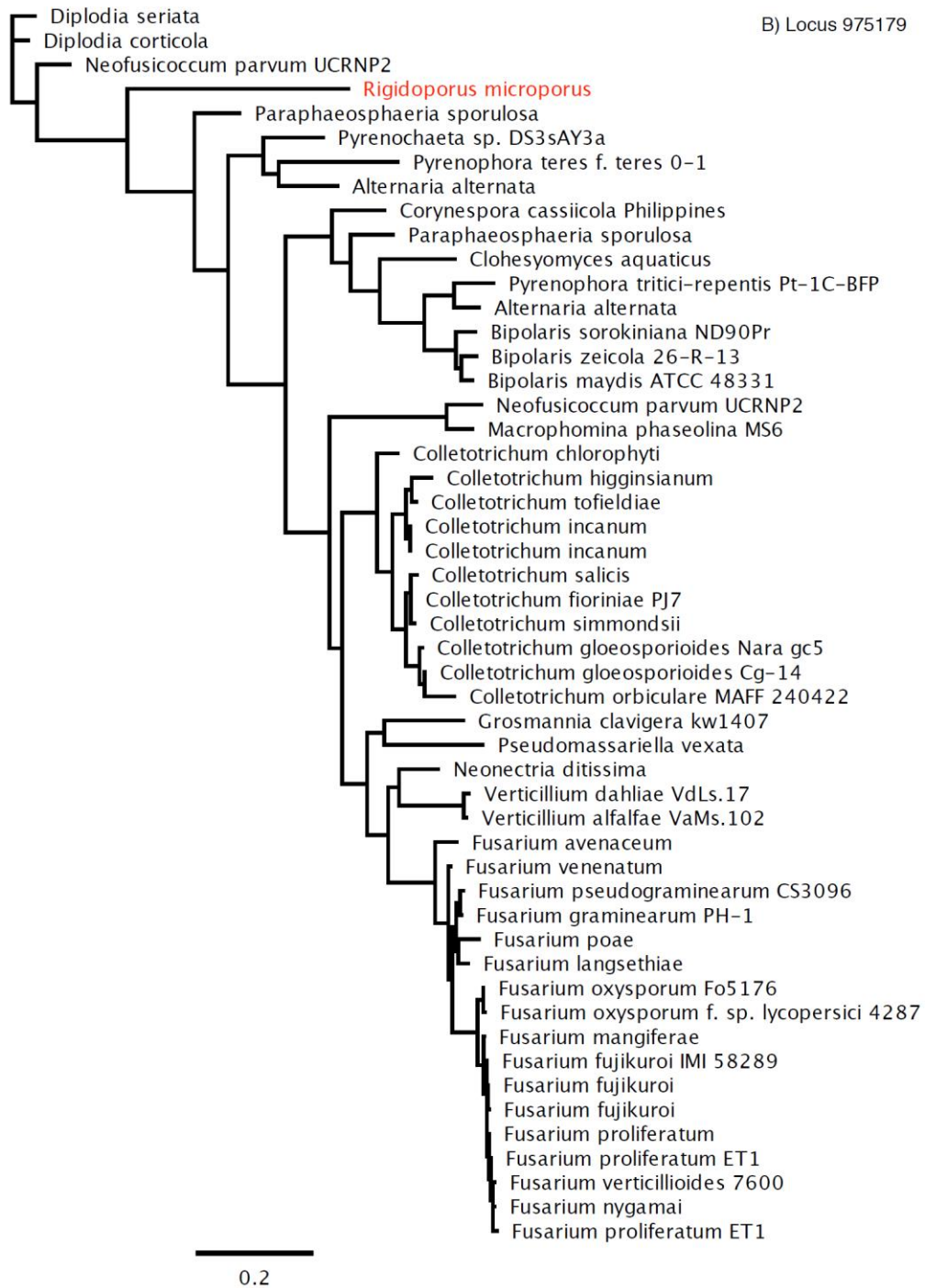
Supplementary Figure 3. Terpene cyclases (Ter1-Ter12) from *R. microporus*. **A.** Putative terpene cyclases with their active domains (aspartate rich domains). Two large gene clusters span the TC genes *ter3A*, *ter3B* and *ter3C* or *ter6A*, *ter6B* and *ter6C*, respectively. **B.** Active sites from TCs shown in Supplementary Fig. 3A. Amino acids with a majority of 25% are highlighted

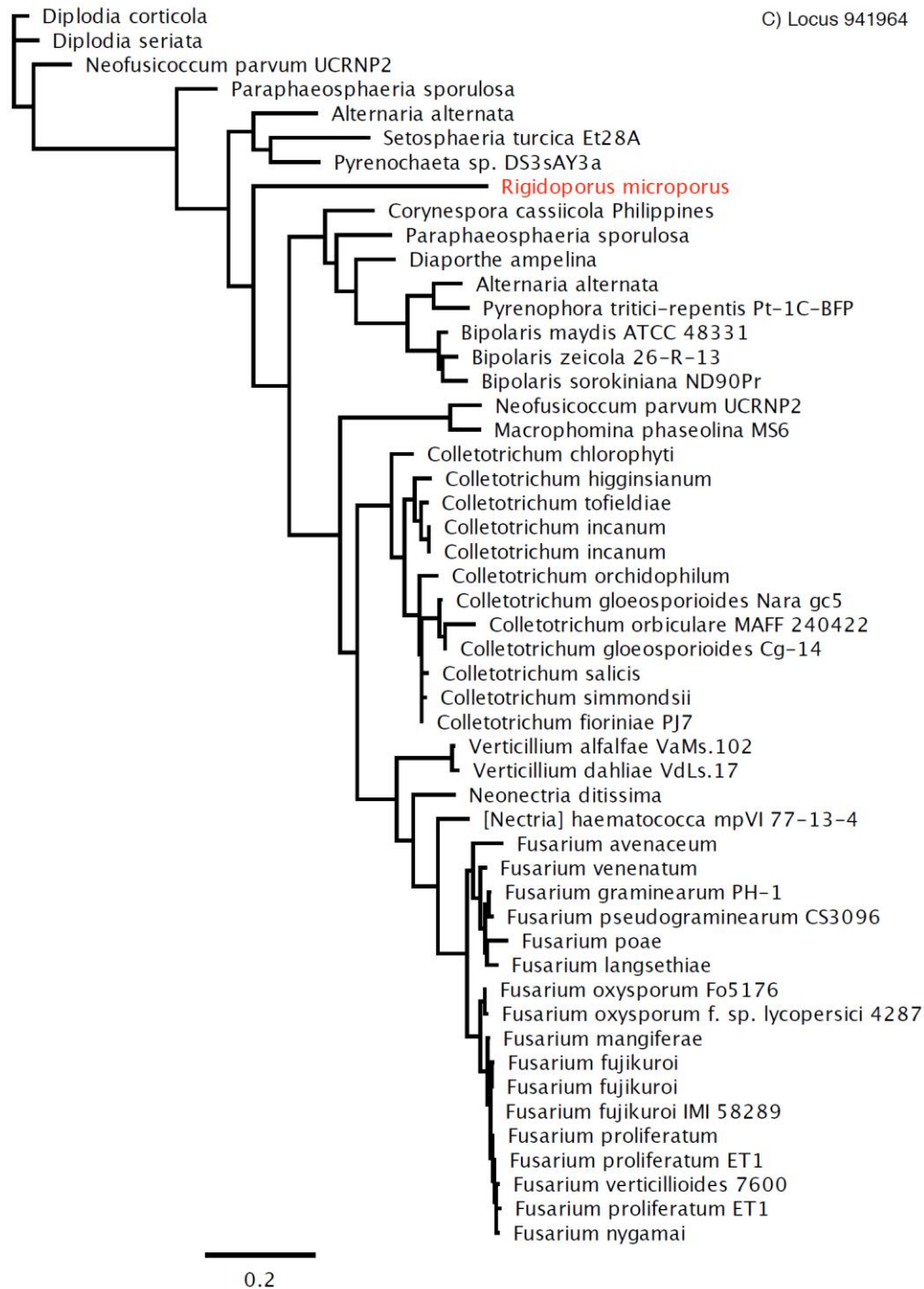
in colors. The position of the active sites in the polypeptide chain is indicated on the left site of the panel. Note that the consensus motif DDX₃₋₄CD indicates N-terminal active sites in *R. microporus*. In Ter12, the DD motif is replaced by ED.

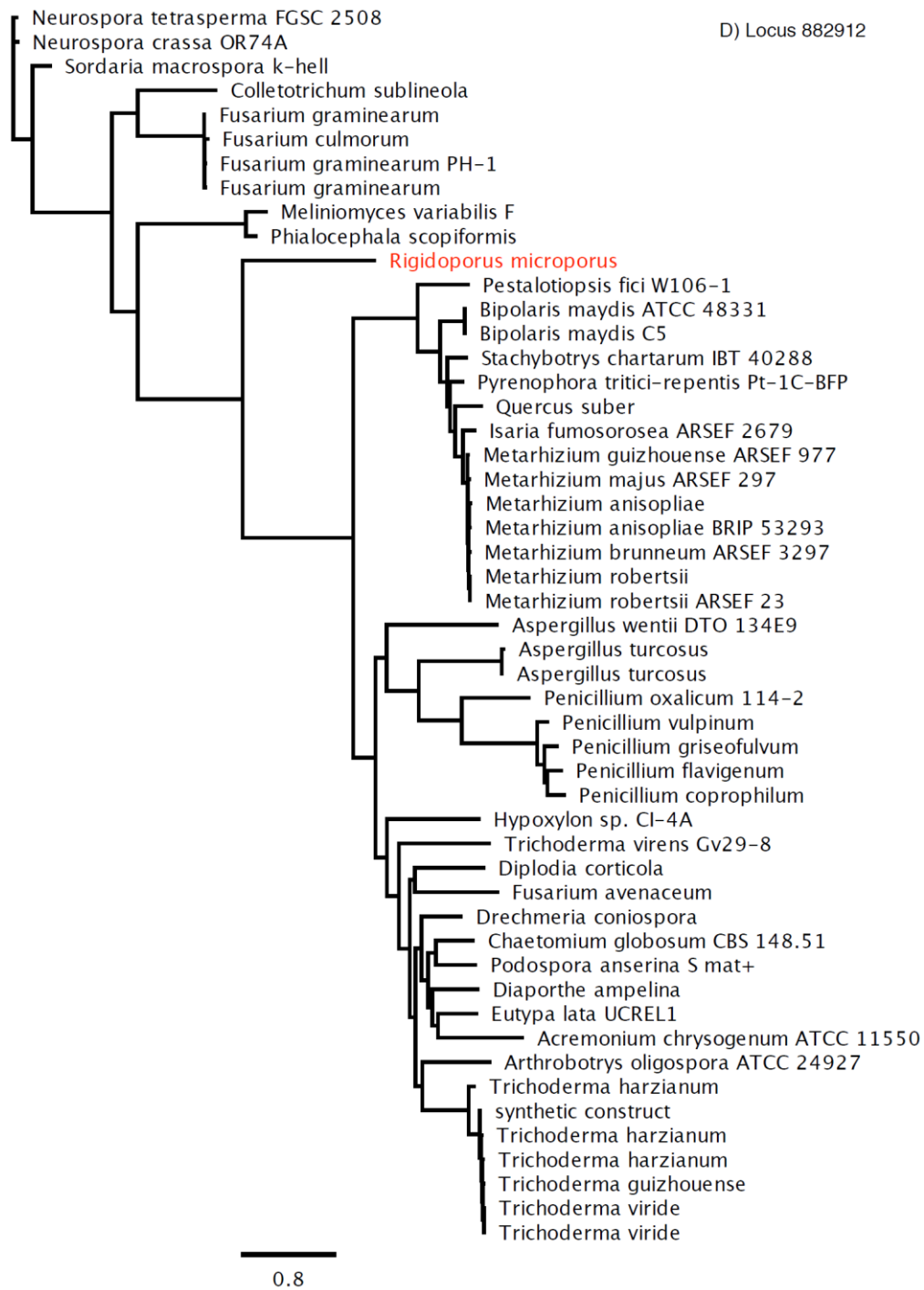


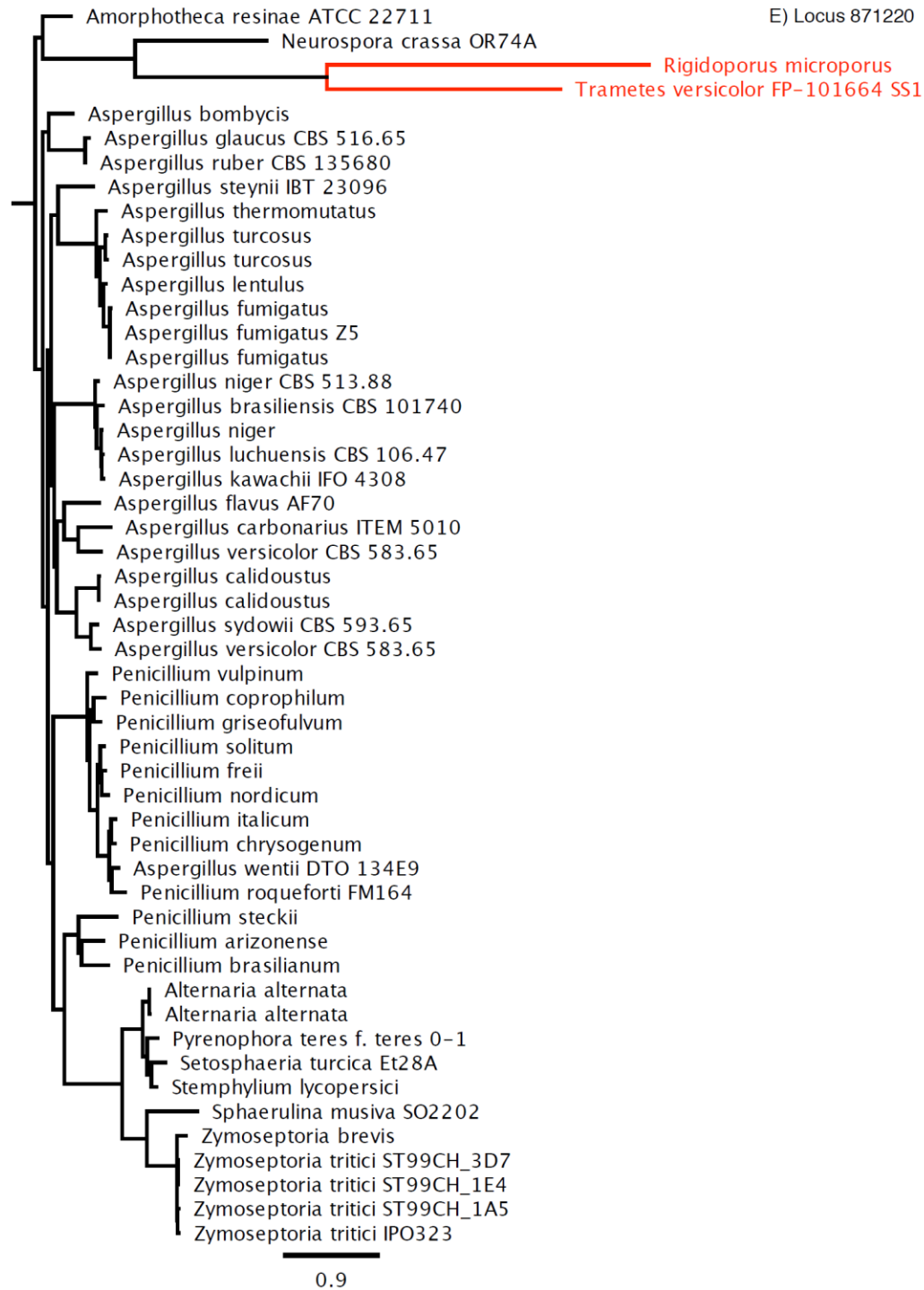
Supplementary Figure 4. Phylogenetic reconstructions illustrating the origin of *R. microporus* genes predicted to originate from HGT events. (A) locus 983304; (B) locus 975179; (C) locus 941964; (D) locus 882912; (E) locus 871220; (F) locus 870991; (G) locus 1012245; (H) locus 948311; (I) locus 897619

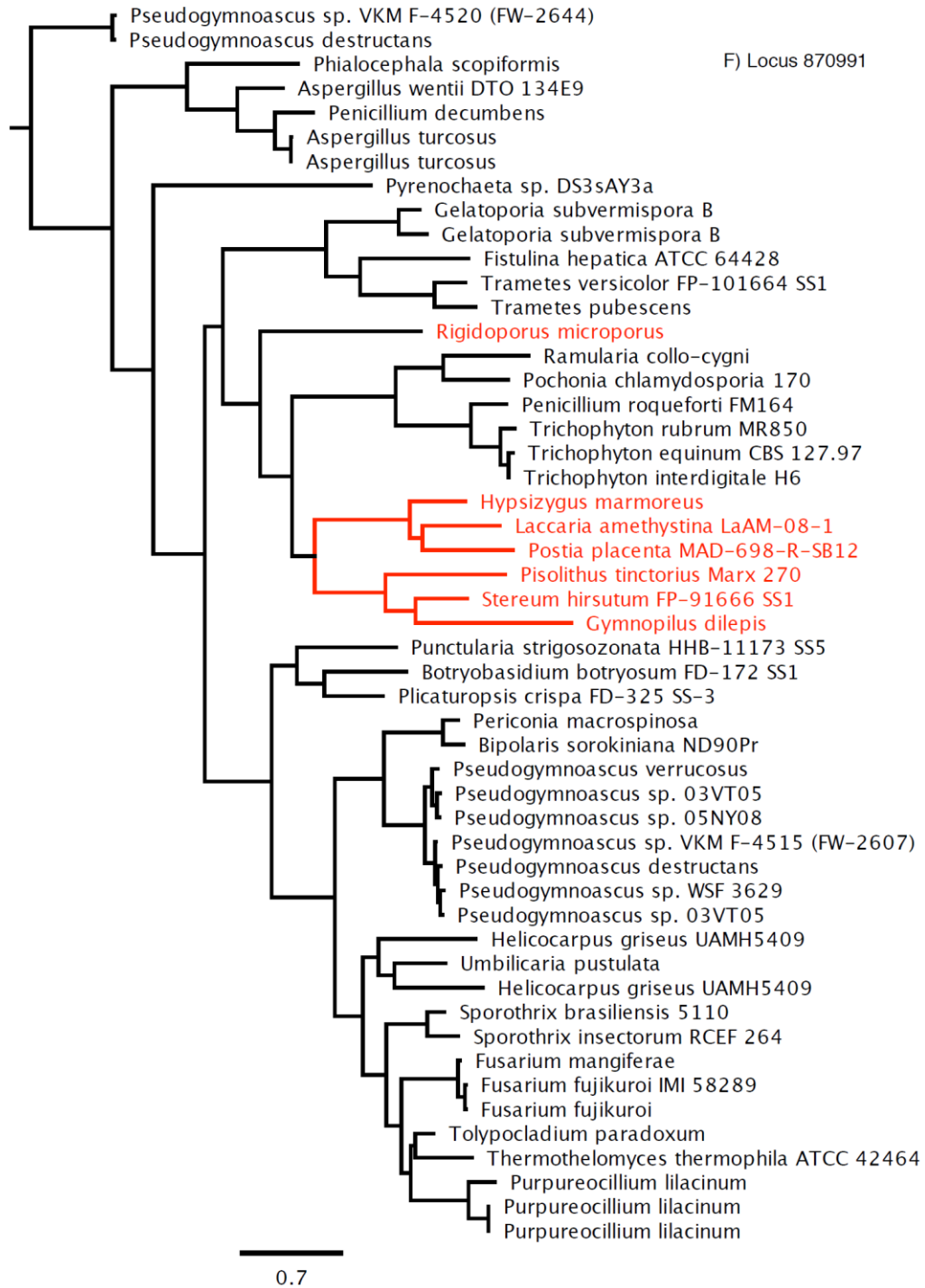


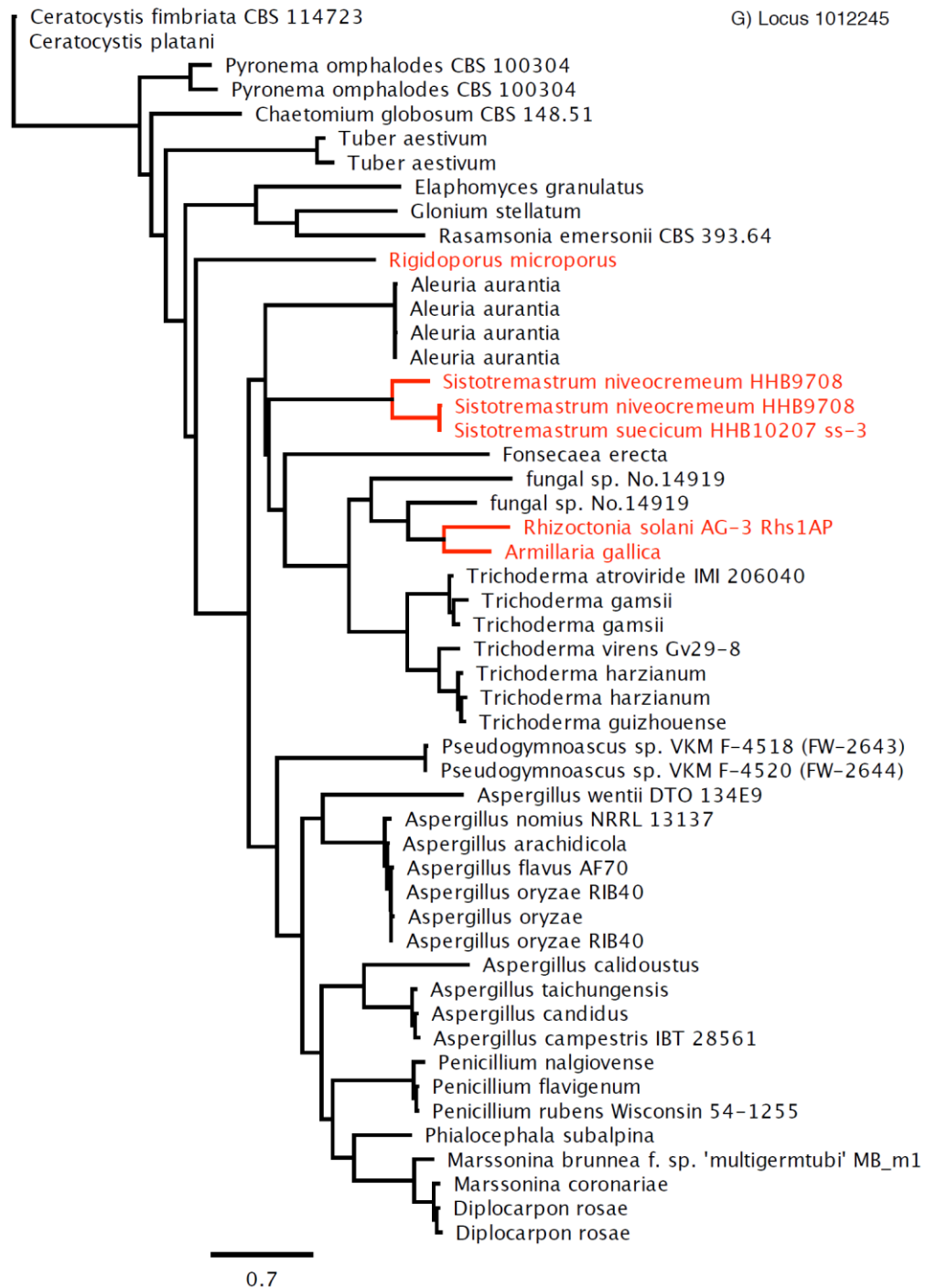


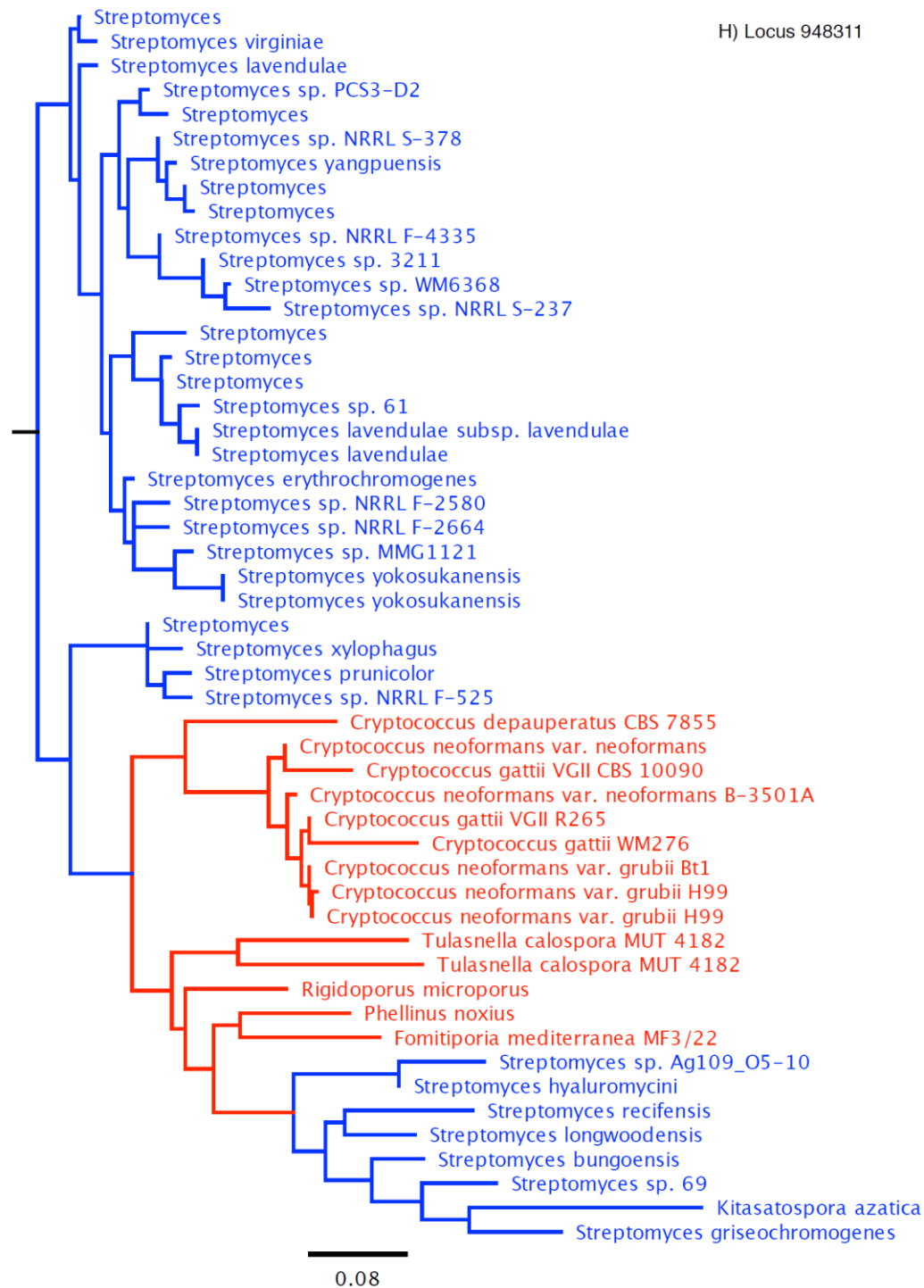


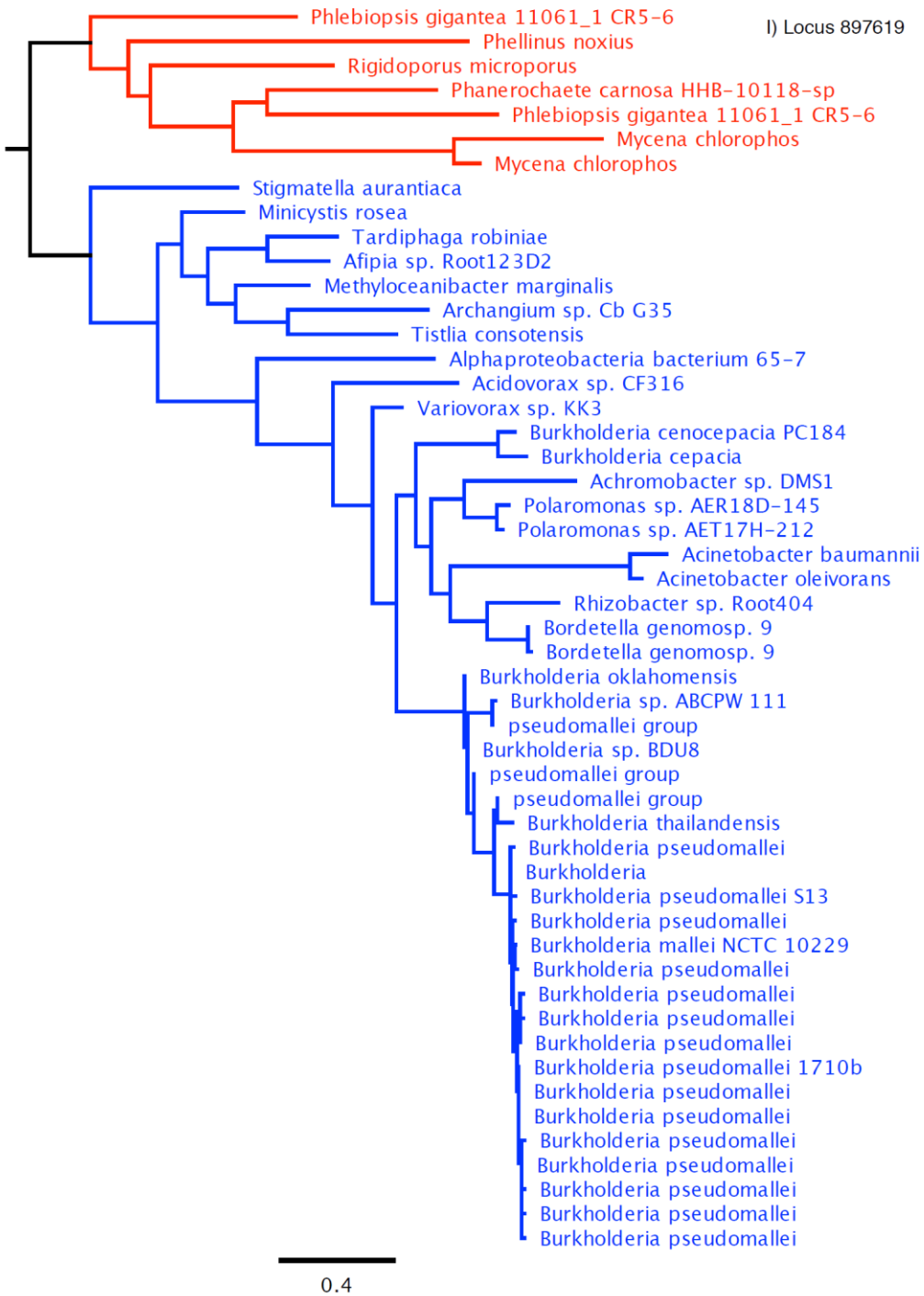








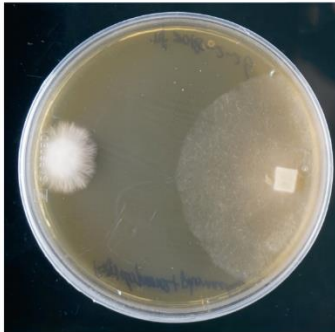




Supplementary Figure 5. Development of fungal co-cultures of *R. microporus* with *Phanerochaete chrysosporium*, *Phlebiopsis gigantea* and *Mycena* sp. Time points of sample harvesting for qRT-PCR analysis are illustrated.

Time point 1

Rigidoporus+Phanaerochaete



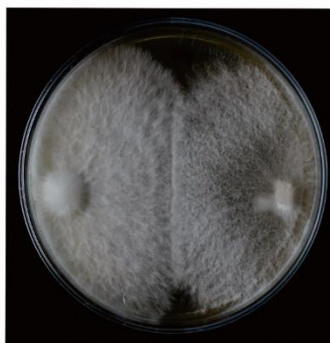
Rigidoporus+Phlebiopsis



Rigidoporus+Mycena



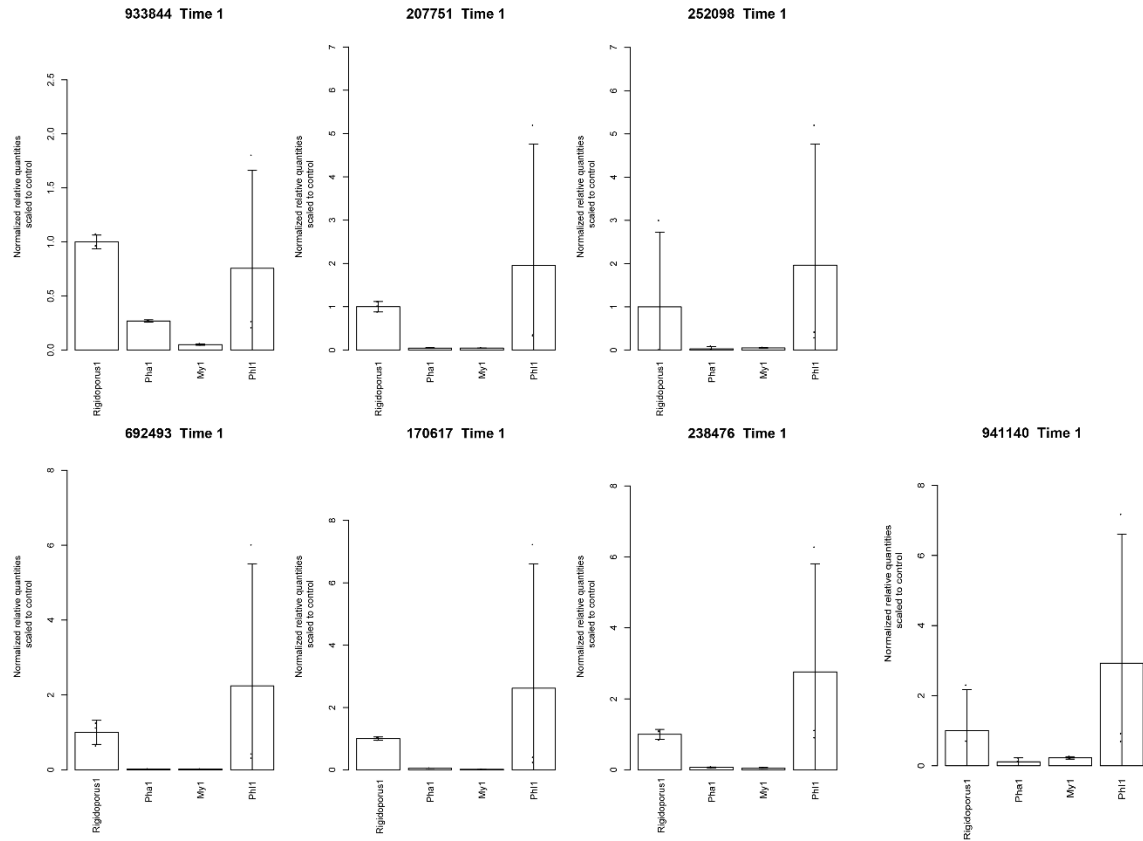
Time point 2



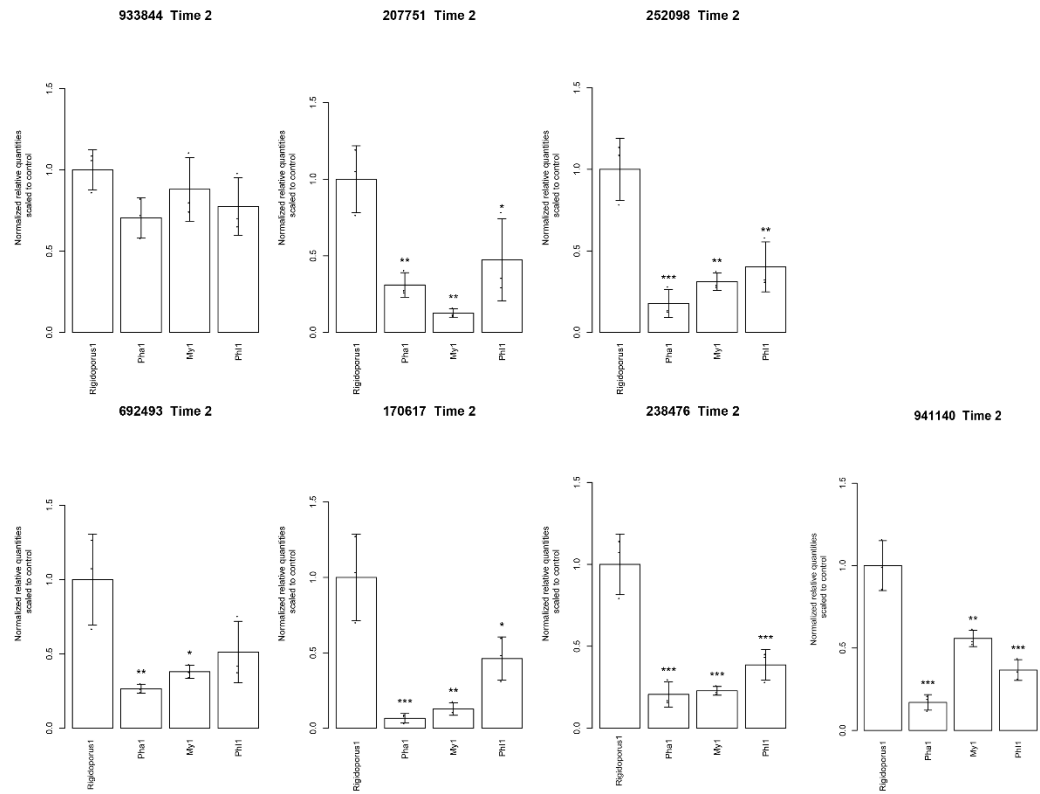
Time point 3



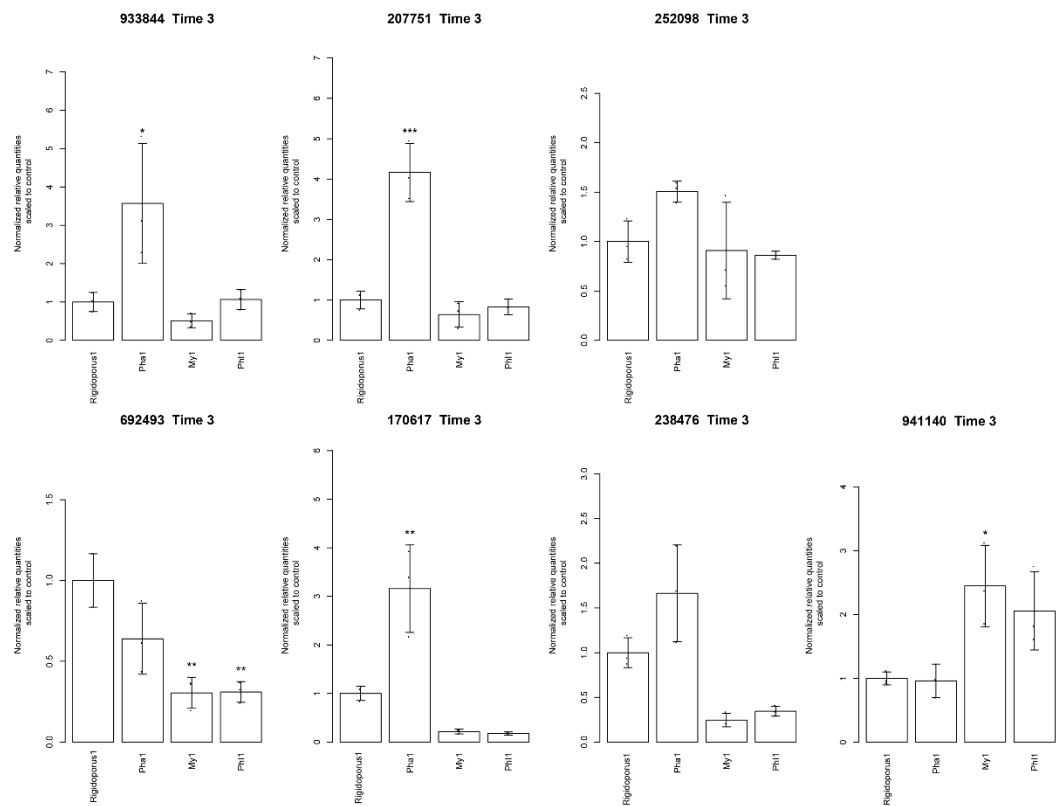
Supplementary Figure 6. Results of qRT-PCR analysis of the expression level of predicted effector-encoding genes in dual co-cultures of *R. microporus* with the indicated fungal species at the time point 1.



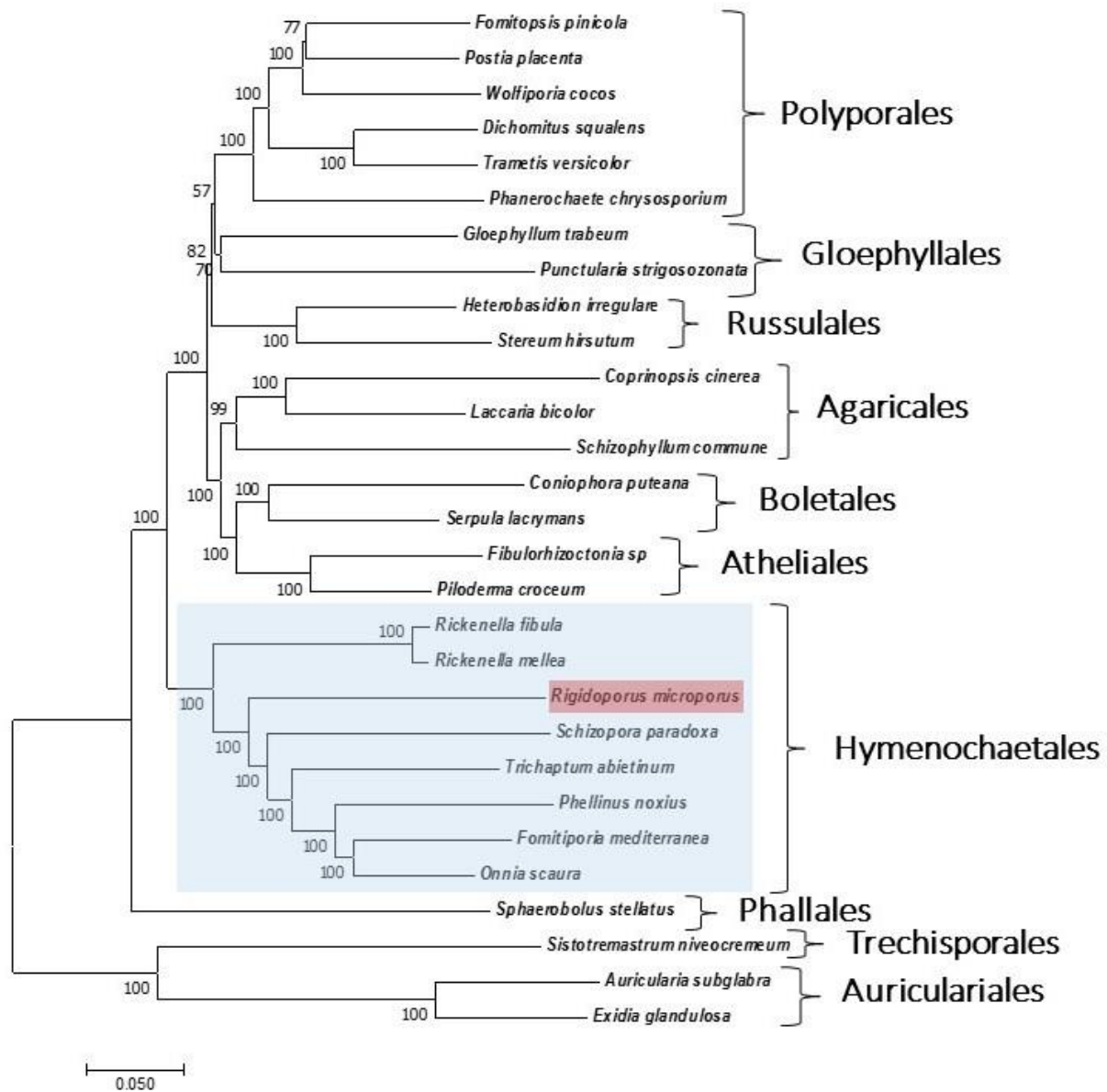
Supplementary Figure 7. Results of qRT-PCR analysis of the expression level of predicted effector-encoding genes in dual co-cultures of *R. microporus* with the indicated fungal species at the time point 2.



Supplementary Figure 8. Results of qRT-PCR analysis of the expression level of predicted effector-encoding genes in dual co-cultures of *R. microporus* with the indicated fungal species at the time point 3.



Supplementary Figure 9. Neighbor-Joining (NJ) phylogenetic tree based on 10 single copy gene datasets mined from the genomes of 29 fungal species using MEGA 7. *Auricularia subglabra* and *Exidia glandulosa* were used as an outgroup.



Supplementary Table 1. Alignment details of single copy orthologous genes used for the multigene phylogenetic analysis. Total of 12, 074 amino acid sites from concatenation of Gblocks-treated alignments of all 10 orthologs were used for phylogenetic tree construction.

S/N	Orthodb ID	Gene	Full length	Length post Alignment/Gblocks
1	EOG091T0023	Myosin motor domain	2250	856 (38%)
2	EOG091T0066	GRAM domain	1873	373 (19%)
3	EOG091T002F	SEC7 domain	2337	1265 (54%)
4	EOG091T003Y	CCR4-NOT	2868	1604 (55%)
5	EOG091T000T	DNA-directed polymerase	2441	1687 (69%)
6	EOG091T002P	ARID domain	3412	1187 (34%)
7	EOG091T0004	Dyein heavy chain	3959	1327 (33%)
8	EOG091T0069	DNA polymerase type-A	2928	791 (27%)
9	EOG091T0012	HECT	4139	2264 (54%)
10	EOG091T003N	Zinc Finger, PHD-type	2788	720 (25%)

Supplementary Table 2. Genomes of selected representatives of Agaricomycetes used for the phylogenetic analysis. Species belonging to the *Hymenochaetales* order are highlighted.

S/N	Symbol	Genome	Reference
1	AS	<i>Auricularia subglabra</i> v 2.0	3
2	CP	<i>Coniophora puteana</i> v 1.0	3
3	CC	<i>Coprinopsis cinerea</i> v 1.0	11
4	DS	<i>Dichomitus squalens</i> v 1.0	3
5	EG	<i>Exidia glandulosa</i> v 1.0	12
6	FS	<i>Fibulorhizoctonia</i> sp v 1.0	12
7	FM	<i>Fomitiporia mediterranea</i> v 3.0	3
8	FP	<i>Fomitopsis pinicola</i> v 3.0	3
9	GT	<i>Gloeophyllum trabeum</i> v 1.0	3
10	HI	<i>Heterobasidion irregulare</i> v 2.0	13
11	LB	<i>Laccaria bicolor</i> v 2.0	14
12	OS	<i>Onnia scaura</i> v 1.0	Unpublished, approval to use genome data obtained from PI
13	PC	<i>Phanerochaete chrysosporium</i> v 2.2	15
14	PN	<i>Phellinus noxius</i> v 1.0	16
15	PI	<i>Piloderma croceum</i> v 1.0	17
16	PP	<i>Postia placenta</i> v 1.0	18
17	PS	<i>Punctularia strigosozonata</i> v 1.0	3
18	RF	<i>Rickenella fibula</i> v 1.0	Unpublished, approval to use genome data obtained from PI
19	RI	<i>Rickenella mellea</i> v 1.0	Unpublished, approval to use genome data obtained from PI
20	RM	<i>Rigidoporus microporus</i> v 1.0	This Work
21	SC	<i>Schizophyllum commune</i> v 3.0	19
22	SP	<i>Schizopora paradoxa</i> v 1.0	6
23	SL	<i>Serpula lacrymans</i> v 2.0	20
24	SN	<i>Sistotremastrum niveocreameum</i> v 1.0	12
25	SS	<i>Sphaerobolus stellatus</i> v 1.0	17

26	SH	<i>Stereum hirsutum</i> v 1.0	³
27	TV	<i>Trametes versicolor</i> v 1.0	³
28	TA	<i>Trichaptum abietinum</i> v 1.0	Unpublished, approval to use genome data obtained from PI
29	WC	<i>Wolfiporia cocos</i> v 1.0	³

Supplementary Table 3. List of ORFs detected in the mitochondrial genome of *R. microporus*.

Gene	Feature	Strand	Start	Stop	Note / E-value, score, Ident	Length (nt aa)
ORF1	CDS	+	526	1695	intron-encoded LAGLIDADG endonuclease [<i>Ustilago bromivora</i>] / 2e-155, 453, 58%	1170 389
ORF2	CDS	+	15586	16161	DNA polymerase family B [<i>Parasitella parasitica</i>] / 0.03, 48.5, 30%	576 191
ORF3	CDS	+	25726	27576	NADH dehydrogenase subunit 2 [<i>Fomitopsis palustris</i>] / 0.0, 584, 55%	1851 616
ORF4	CDS	+	29065	29832	cytochrome oxidase subunit 2 [<i>Trametes cingulata</i>] / 5e-155, 440, 81%	768 255
ORF5	CDS	+	30736	31086	unnamed protein product [<i>Oikopleura dioica</i>] / 0.005, 45.4, 36%	351 116
ORF6	CDS	+	31372	32181	translation initiation factor IF-2 [<i>Chryseobacterium piscicola</i>] / 4.8, 40.0, 38%	801 269
ORF7	CDS	+	36514	37689	homing endonuclease [<i>Thelephora ganbajun</i>] / 9e-138, 405, 70%	1176 391
ORF8	CDS	+	39571	40713	orf360 (mitochondrion) [<i>Rhizopus oryzae</i>] / 0.0, 520, 71%	1143 380
ORF9	CDS	+	43654	45621	NADH-ubiquinone oxidoreductase chain 5 [<i>Heterobasidion irregulare</i>] / 0.0, 1033, 77%	1968 655
ORF10	CDS	+	46579	47202	hypothetical protein [<i>Heterobasidion irregulare</i>] / 1e-05, 55.1, 28%	624 207
ORF11	CDS	+	47800	48618	cytochrome c oxidase subunit 3 [<i>Hericium coralloides</i>] / 2e-134, 389, 70%	819 272

ORF1 2	CDS	+	5056 0	51576	NADH dehydrogenase subunit 1 [<i>Thelephora ganbajun</i>] / 0.0, 602, 88%	1017 338
ORF1 3	CDS	+	2351	2803	hypothetical protein SCLCIDRAFT_146523 [<i>Scleroderma citrinum</i> Foug A] / 2e-78, 245, 81%	453 150
ORF1 4	CDS	+	3239	4690	NADH dehydrogenase subunit 4 [<i>Hericium coralloides</i>] / 0.0, 754, 76%	1452 483
ORF1 5	CDS	+	5339	6700	40S ribosomal protein S3 [<i>Thelephora ganbajun</i>] / 4e-24, 113, 31%	1362 453
ORF1 6	CDS	+	1428 8	14926	hypothetical protein POSPLADRAFT_1161041 [<i>Postia placenta</i> MAD-698-R-SB12] / 2e-99, 295, 74%	639 212
ORF1 7	CDS	+	1126 2	11768	LAGLIDADG type homing endonuclease [<i>Ganoderma meredithae</i>] / 1e-65, 209, 66%	507 168
ORF1 8	CDS	+	1652 4	17399	hypothetical protein GALMADRAFT_82379 [<i>Galerina marginata</i> CBS 339.88] / 2e-40, 153, 38%	876 291
ORF1 9	CDS	+	2423 1	25295	MerR family transcriptional regulator [<i>Tetragenococcus solitarius</i>] / 1.2, 40.4, 29	1065 354
ORF2 0	CDS	+	2757 6	27974	NADH dehydrogenase subunit 3 [<i>Hericium coralloides</i>] / 5e-56, 179, 76%	399 132
ORF2 1	CDS	+	3797 1	39332	LAGLIDADG homing endonuclease [<i>Rhizoctonia solani</i> AG-1 IB] / 0.0, 752, 85%	1362 453
ORF2 2	CDS	+	4084 8	42176	endonuclease [<i>Trichosporon asahii</i> var. <i>asahii</i> CBS 8904] / 1e-165, 484, 57%	1329 442
ORF2 3	CDS	+	4225 8	42974	hypothetical protein PHLGIDRAFT_412339 [<i>Phlebiopsis gigantea</i> 11061_1 CR5-6] / 7e-149, 426, 87%	717 238
ORF2 4	CDS	+	4917 0	49931	ATPase subunit 6 [<i>Hyphodontia nespori</i>] / 2e-134, 387, 89%	762 253
ORF2 5	CDS	-	1920 7	19512	hypothetical protein PAXRUDRAFT_19721 [<i>Paxillus rubicundulus</i> Ve08.2h10] / 1.5, 37.7, 37%	306 101

ORF2 6	CDS	-	1959 6	20174	GGDEF domain-containing protein [<i>Ferrimonas kyonanensis</i>] / 9.6, 37.7, 31%	579 192
ORF2 7	CDS	-	1814 7	18740	von Willebrand factor type A domain containing protein [<i>Trichomonas</i> <i>vaginalis</i> G3] / 0.010, 25.8, 57%	594 197

Supplementary Table 4. List of tRNA genes detected in the mitochondrial genome of *R. microporus*.

tRNA #	Begin	End	Type	Codon	Score	Pseudo
1	117	187	Ile	GAT	34.5	No
2	7072	7154	Leu	TAA	44.2	No
3	12767	12837	Ala	TGC	38.4	No
4	12955	13026	Phe	GAA	56.4	No
5	13299	13370	Thr	TGT	48.8	No
6	13511	13583	Gln	TTG	39.3	No
7	22291	22361	Val	TAC	29.2	No
8	22651	22725	Leu	TAG	32.3	No
9	22898	22972	Arg	TCG	45.2	No
10	23750	23822	Trp	CCA	37.5	No
11	33243	33318	His	GTG	33.6	No
12	33628	33701	Met	CAT	49.1	No
13	33959	34031	Lys	TTT	41.6	No
14	34306	34389	Tyr	GTA	31.30	No
15	34392	34465	Met	CAT	42.0	No
16	34468	34542	Pro	TGG	22.90	No
17	34698	34774	Asn	GTT	52.9	No
18	35082	35167	Ser	TGA	53.0	No
19	35475	35548	Asp	GTC	53.6	No
20	35564	35635	Gly	TCC	49.1	No
21	35803	35877	Arg	TCT	45.9	No
22	35912	35983	Met	CAT	37.2	No
23	35986	36056	Glu	TTC	35.3	No
24	36320	36400	Ser	GCT	19.40	No

Supplementary Table 6. Putative natural product genes in the *R. microporus* genome based on sequence homology.

Predicted protein function	Name	Protein ID	Scaffold	Nucleotide range	Protein length (aa)	Domain architecture	Notes	Clusters with
Non-ribosomal peptide synthase	Nrp1	944992	7	351562-359604	2322	A-T-C-T-C	Hydroxamate siderophore biosynthesis SidD homolog (<i>Aspergillus fumigatus</i>)	Mon1
Non-ribosomal peptide synthase-like protein	Nrl1	924741	14	333882-338533	1414	ADA-A-T-R	L-alpha-amino adipate semialdehyde reductase, lys2 homolog	
Polyketide synthase		none						
Terpene cyclases	Ter1	839171	56	6927-8081	344			
	Ter2	854007	56	62349-63618	342			
	Ter3 A	986842	34	118174-119565	331			TerB, TerC, Znf1, Oxi1, Oxi2
	Ter3 B	838119	34	120482-121634	344			TerA, TerC, Znf1, Oxi1, Oxi2
	Ter3 C	950024	34	123309-124443	348			TerA, TerB, Znf1, Oxi1, Oxi2
	Ter4	908344	2	778087-779644	328			
	Ter5	827067	2	1035754-1036879	337			
	Ter6 A	826611	2	1317761-1318884	335			Ter6B, Ter6C, Znf2, Tra3
	Ter6 B	941833	2	1319987-1321105	325			Ter6A, Ter6C, Znf2, Tra3

	Ter6 C	100912 2	2	1323298- 1324404	330			Ter6A, Ter6B, Znf2, Tra3
	Ter7	827315	2	1379789- 1380916	335			Tra4
	Ter8	923615	8	241176- 243312	367			Met1, Oxi3
	Ter9	961004	11	1022511- 1023965	392			
	Ter10	840896	113	21080- 22234	344			Tra5, Oxi4, Oxi5
	Ter11	918081	69	52544- 53935	342			Oxi6
	Ter12	921347	2	765545- 766639	338			
Oxidoreductas es	Smo1	649158	7	348288- 350743	610		Hydroxamate siderophore biosynthesis SMO1 homolog (<i>Ceriporiopsis subvermispor a B</i>)	Nrp1
	Oxi1	838076	34	110606- 113318	641		flavin- dependent monooxygena se	Ter3A, Ter3B, Ter3C, Znf1, Oxi2
	Oxi2	917151	34	107336- 109469	445		FAD- dependent monooxygena se	Ter3A, Ter3B, Ter3C, Znf1, Oxi1
	Oxi3	930040	11	1029997- 1033267	574		FAD- dependent monooxygena se	Ter9, Met1
	Oxi4	903147	113	27612- 29356	451		NAD-binding monooxygena se	Ter10, Tra5, Oxi5
	Oxi5	101662 2	113	36489- 38304	445		FAD/NAD- binding monooxygena se	Ter10, Tra5, Oxi4
	Oxi6	900847	69	45092- 47959	563		FAD/FMN- containing dehydrogenas e	Ter11
Methyl transferases	Met1	887163	11	1028487- 1029997	309			Ter9, Oxi3

Halogenase		none						
Phenylalanine ammonia lyase	Pal1	948695	20	346668-350530	943			
Transporters	Tra1	939108	56	4628-5296	115			Ter1
	Tra2	925935	56	2063-4383	505		MFS transporter	Ter1
	Tra3	921485	2	1305217-1307637	518		MFS transporter	Ter6A, Ter6B, Ter6C, Znf2
	Tra4	921505	2	1382623-1384887	549		MFS transporter	Ter7
	Tra5	840884	113	24779-27057	554		MFS transporter	Ter10, Oxi4, Oxi5
Histone Acetyl Transferase (HAT)	GNA T	840891	113	14063-14836	187			Ter10?
Transcription factor	Znf1	457826	34	113730-115864	538		C6 Zn finger	Ter3A, Ter3B, Ter3C, Oxi1, Oxi2
	Znf2	826554	2	1315176-1315774	164		C6 Zn finger – potentially only co-activator	Ter6A, Ter6B, Ter6C, Tra3
	Znf3	950902	69	50600-51801	358		C6 Zn finger	Ter11

Abbreviations in domains of NRPS and NRPS-like proteins are:

A: adenylation domain

T: thiolation domain/peptidyl carrier protein

C: condensation domain

ADA: adenylation activating domain

R: reductase domain

Supplementary files 1-11 – Aligned sequences of single copy orthologous genes (1-10) and concatenated sequences of all 10 genes (11) used for the multigene phylogenetic analysis. Total of 12, 074 amino acid sites from concatenation of Gblocks-treated alignments of all 10 orthologs were used for phylogenetic tree construction.

01-Myosin motor domain

>CC

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MRRTGQDQCI IFTGETASGK SEARRLAIKS LITLSVPPAG KKGSKLAQQI PASEFVLESF
GNARTLFNPN ASRFGKYTEL QFTRGRLCGV KTLDDYYLERG RVAAVPSGER NFHIFYYLVR
GVNDDERGHF NLGDGRNFRY LGGQDALKFD QLKIALKTIG FSKRVAQCM QLVAAILHLG
NLDTFIDKSR NEDAAVVRNL DTLNLVADFL GVDPQGLEGA LSYKTKMVKK ELCTVFLDVE
GAEANRDELA KTLYSLLFAW VNEYVNQRLA VGDFDAFIGL LDLPGPQNMS RPNSLDQFIV
NYANERVQGF VRNKIFNGNQ QEFQFEGLTH LLPSLSTPDN SETLRLLLHNY PGGLIHIMDD
QARRQPKKTD GTMVEAFQKR WGNHSSFKTS GVVDGASFTV SHYNGAVTYA VEGFLERNLD
SVNPDFVSL LRGGSINPFVK SLFSSKAIAT QAHPRHEETI VAAQQAVKPM RAPSMRRKGT
PCVAGEFRAA LDTLTFATLDE TQPFVFCIN PNDSQLPNQL EGRSVKGQVR SCGMGGVARR
NLVYWEVNMT FGEFEERYAG VLEEVGVTPT FKVVLGKTK VWLSQRAFRA LEDRLRIKEG
GERVGRELGM AGASNQRLPL VSNASPFEEY EPPSRIRGDE ESYAPSRNMF AGDGVAAPG
ETTEVLKESS ARRRWVAFTW LLTWVWIPSPF LVWFGMRKRM DVRQAWREKL ALNLIWIFIC
GCTVFVIAVL GPVICPTEHV YSTTELS DHS NKVYTAIRGE YGGREINDLF PVQVSALCDG
IDGNVSPYVM LSSRNTDTNA VYHDFRASTN DPRPDWYFQQ MVTMRYTARV GFRGYTPKEI
RNMANRGQSV AIYNGL
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>FP

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MRRTTQDQSI LLTGETGSGK SENRRLAIKT LLELSVSQPG KKGAKLVNQV PAAEFVLETF
GNARTLFNPN ASRFGKYTEL QFTRGRLCGM KTLDDYYLERN RVAGAPSGER NFHVIFYLVA
GASPEERQYL HLQDKTTYRY IGLRDAVRFD QLKMAKKNVG FSKRHVAQTC QLVAAILHLG
NLEFTIDRFR NEEAAVVRNT DVLDIVADFL GVQPSALEAS LSRTKLKVK EVCTVFLDPD
GASDNRDELA KSLYALLFAW LNEHINQRLC RDDFNTFIGL FDLPGPQNLS RPNSLDQFCV
NFANERLQNF IQKKLFESHV VEYNSEGISR LVPQVAYFDN SECLRLQLNK PGGLIHIMDD
QARRMPKKTS HTMVEAFTKR WGNHSSFKAG SIDRFTFTV NHFTGPVVYS SENFLERNLE
ALNPDFVSL LRGSSNPFIR SLYSNKAITA QAHPRNEETI VAAQQPVKPM RAPSTRRKGT
PCVAGEFRAA LDTLTFETLEE TQSWYVFCIN SNDSQLPNQL EGRSVKGQVR SLGLAEVAKR
NVTVFKANMT PEEFVQRYSG YLTTLNVHEG DKDIVLGMSQ VYLSQRAFHA LEDDLRSKDT
EEQKRNRMRD AEASNQQLPL VQNAQPMDDY DGRSAYTSHR ESYAPSRNMF QDADGEIQEG
ETTEVLKEST LRRRWVMICW LLTFWCPTPF LRWFGMRKRP DVQQAWREKL ALNMLIWFIC
GCAIFVIAVF GNLICPTEHV FTTSELQEH S NNVYTSIHGE YGGVSSDDIF PLQVSALCNG
VSGSVNPPYVQ YSSANTDVNA QYHDFRAWTG DSRPDWYFEQ MVQMRWNNRV GWMGYTTQDL
NNMAGKGSSV GVEYGI
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>GT

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MRRTGQDQSI LLSGETGSGK SENRRLSIKT LLELSVSSPG KKGSKLAHQV PAAEFVLETF
GNSRTLNFAN ASRYGKYTEL QFTRGRLCGV KTLDDYYLERN RVAQVPSGER NFHIFYYLVA
GASPEERQHM HLDERANYRY LGQRDGARFE QLKMAKKNVG LSKRHVAQTC QLVAAILHLG
NLEFTIDRHR NEDAAVVRNT DTLGIVADFL GVQPAALEAA LSYKTKLVRK ELCTVFLDPD
GASDNRDDLA KTLYSLLFAW LNEHINQKLC KEDFATFIAL FDLPGPQNMS RPNSLDQFCV
NFANERLHNF IHKRIFERDT AQYASEGLSN YVPQVPYFDN SECLRLQLNK PGGLIHIMDD
QALRMPKKTD HSMVEAFGKR WGNHSSFKMG SIDRYPTFTV HHYNGPVTYS SEGFLERNLD
AVNPDFVSL LRGGSANPFVK GLFSAKAIAT QAHPRNEDTI VAAQQPQKPM RAPSTRRKNT
PCVAGEFCSA LDTLTFETLEE SQSWYVFCIT PNDSQLPNQL EGRSVKGQVR AMGLPEIARR
FINVFEVNMT PDEFVERYKE SLASLVNHEG DQDIVIGQHK VFLSQAAFHK LEDHLRSKDV
EEQKRNRRLD AEASSQALPL VSHASPFDDF DGRSRLTSNR ESYAPSRNMF QNADADVQEG
ETTEVLKESS ARRRWVALCW MLTWVWPTPC IRWVGRMKRP DVQQAWREKL ALNMIWIFVC
ACAIFVIAVL GNVICPTEHV FSTSELASHN NNVYTSIRGE YGGTSSDNIF PVQVSALCNG
VSGSVSPYV LDSTNTDPNA QYHDFRAFTN DSRPDWYFEV MTQMRWKNRV GFMGYTPKEI
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GASAEERQHL HLQEKTTYRY LGQRDAVRFD QLKVALKNVG FSKRHVAQTC QLLAAILHLG
NLEFTIDRAR NEDAAVVRNT DILEIVADFL GVQPAALEAA LSyrTKLVKK ELCTVFLDPD
GASDNRDELA KSLYALLFAW LNEHINQRLC RDDFNTFIGL FDLPGPQNLS RPNSLDQFCI
NFANERLQNF IQKRLFESHA SEYANEGISR FVPQIPYFDN SECLRLLQNK PGGLIHIMDD
QARRIPRKND HTMVESFTKR WGNHSSFKSG GMDRFPTFTV NHFGGPVTYS AESFLERNLD
ALNPDFVSL L RGGSTNPFVR GLYSAKAIAT QAHPRDEETI VAAQQPVKPM RAPSTRRKGT
PCVGGEFRAA LDTLFETLEE TQSWYVFCIN PNDSQLPNQL EGRSVKGQVR SIGLAEIARR
NINVFEANMT QDEFVDRYKA QFTSLNVVEG EKDVVLGTNK VFLSQAAFHA FEDDLRSKDT
EEQKRNRRLD AEASNQALPL VNNAAPFDDF DGRSAYTSHR ESYAPSRNMF QDADGEIQDG
ETAIEILKETP LRRRWVMLCW VLTFWVPTPL LAWAGRIKRP DVQQAWREKL AINMLIWFVC
GCVIFIIAIF GPLICPTQHV FNTNELETHS NNAYVAIHGE YAGTTADALF PLQVSALCNG
VTGSVNPYV FDSGNTDVNA QYHDFRAWTN DPRPDWYFES MVQMRWNNRV GWIGYTMKDL
SSMASSGKSV GYVDGI
>WC
MRRTTQDQSI LLSGETGSGK SENRRLAIKT LLELSVSQPG KKGAKLAYQV PAAEFVLETF
GNARTLFPNP ASRYGKYTEL QFTRGRLCGM KTLDYYLERN RVAGAPSGER NFHIFYYLVA
GASVEERQHL HLQEKTTYRY LGQRDAVRFD QLKMAKNVG FSKRHVAQTC QLIAAILHLG
NLEFTIDRSR NEDAAVVRNT DVLELVSEFL GVQPAALEAT LSyrTKLVKR ELCTVFLDPD
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NFANERLQNF VQKRLFESHV SEYNSEGIAR YVPQVPFFDN SECIRLLQHK PGGLIHIMDD
QARRMPRKTN QTMVEAFSKR WGNHSSFKAG AIDRCPTFTV NHFSGPVTYS SENFLERNLD
ALNPDFVSL L RGGSTNPFIR ELYSAKAIAT QAHPRDEETI VSAQQPVKPM RAPSTRRKNT
PCIAGEFRAA LDTLFETLEE TQSWYVFCIN PNDSQLPNQL EGRSVKGQVR SLGLSEVSRR
CVNVFEVNMT SDEFVQRYRA HLTALNVTEG EKDIVLGVRQ VFLSQAAFHA FEDDLRSKDT
DEQKRNRRLD AEASSQALPL VSNASPFDDY DGRSAYTSHV ESYAPSRNMF QDADGEIQEG
ETAIEIKETP LRRRWVILCW ILTWVVPNPL LAWLGRMKRP DIQQAWREKL AINMLIWFVC
GCAVFVIVFF GPIICPTEHV FTTSELQSHS NNVYTSIRGE YGGTSSDAIF PVQVSALCNG
VTGSVSPYV LSTSNTDANA QYHDFRAWTN DPRPDWYFEV MVQMRWNNRV GWMGYTSKDL
QNMASEGKSV GVIDSI
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MRRTAQDQCI LLSGETGSGK SENRRLAIKT LLDLSVSNPG KKGSKLAHQV PAAEFVLESF
GSARTLFPNP ASRFGKYTEL QFTRGRLCGV KTIDYYLERA RVASVPSGER NFHIFYYLMA
GASPEERQHM HLNEKATYRY LAQRDAIRFD QLKMAKNVG FSKRHVAQTC QLIAAILHLG
NLEFTIDRHR NEDAAVVRNM DVLEIVA EFL GVQPAALETA LTYRTRLMKK ELCTVFLDPD
GAADNRDELA VTLYSLLFTW LNEHINQRLH KDDFTSFIAL LDFPGPQNLS RPNGLDQFCV
NFANERLQNF IQKRLFESHV SEYNAEGIAR FVPQVPYFDN SECIRLLQHR PGGLIHIMDD
QARRMPRKTN HTMV EAFSKR WGNHSSFKVG SADRFPFTFTV NHFTGPVTYS AEGFLEKNQD
TLSPDFVQLL RGG SINPFVR GLFTSKAVAT QVHPKNEETI IAAQQPVKPM RAPSTRRKNT
PCIAGQFRAA LDMLFETLEE AQAWYVFCIN PNDSQLPNQL EGRSVKGQVR SLGLAEVARR
CVNVFEVAMT PQEFVERYRD TLHQVGIQEG EKDIVLGMTM VFLSHAAFHR LEDDLRAKDT
EEQKRNRIRE AEASSQQLPL VSNASPFDEY DVRSALTSHR ESYAPSRNMF QNADGEIQEG
ETVEILKESS ARRRWVMLCW ILTWIPTPV LVHIGRMKRP DIQQAWREKL ALNMLIWFMC
ACAVFVIAVI GPLICPTEHV FSTSELQSHS NNVYTSIRGE YGGVAADNLF PVQVSALCNG
VTGSVSPYV LDSSNTDPNA QYHDFRAWTS DPRPDWYFES MTLMRWNNRV GFVGIDSKGL
KNMANQRRIV AVYRGL
>DS
MRRTQQDQSV IFTGETGSGK SENRRLAIKT LLELSVSQPG KKGSKLGNQV PAAEFVLETF
GNSRTLFPNP ASHFGKYTEL QFTRGRICGV KTLDYYLERS RVSGAPSGER NFHIFYYLIA
GASAEERTHM HLSDR TQYRY LGARDAVRFE QLKVALKNVG FSKRHVAQTC QLIAAILHLG
NLEFTIDRSR NEDAAVVRNL DVLEIVSEFL GVQPSALEAA LSyKTKLVKK ELCTVFLDPD

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GASDNRDELA	RMLYSLLFAW	LNEHINQRLC	RDDFTTFIGL	FDLPGPQNMS	RPNSLDQFCI
NFANERLINF	MQKRLFESHV	QEYNNEGISR	FVPHVPYFDN	SECIRLLQNR	PGGLIHIMDD
QARRMPRKTD	HTMVEAITKR	WANHSSFKSG	GMDRFPTFTI	NHYSGPVTYS	AQNFLEKNLD
AINPDFVSL	RGGSMNPFVR	GLFSGKAIAT	QAHPRNEDTI	VSAQQPVKPM	RAPSTRRKNT
PCVAGEFRQA	LDVLFETLED	TQSWYIFCIN	PNDSQLPNQL	EGRSVKAQVR	SVGLSEIARR
NVNVFEAMMT	PDEYVQRYQS	LLTSLGVTEG	ERDVVLGMSM	VFLSQAAFRR	LEDDLRSKDT
EEQKRNRIRD	AEASNQQLPL	VANASPFDDF	DGRSAYTSHR	ESYAPSRNMF	QNADGEVQEG
ETAEVLKESS	ARRRWVLCW	MLTFWCPTFL	LRYVGRMKRL	DVQQAWREKL	ALNMIIWFVC
ACAVFVIVFI	SPIICPTEHV	FNTAELNGHS	NNVYVAIRGE	YGGTQADDLF	PVQVSALCNG
ISGSVNPYV	LTTKNTDQNA	QYHDFRSWTN	DPRPDWYFEQ	MTMLRWNYRV	GFVGYSKQI
KSMASGSSV	AIYKGL				
>TV					
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 IDKAHNAGKK VVYSDPDAMT RCVVEAIVKS GVHAILSKGW SDRLEPEIPL PSQIYPIQSI
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 AKLVGEQIRS ENG
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GTNLDKLEPH KVPFLYNFSP TVVPPPLDWP EWIRVTGYWF LDDADVSAKT WSPKDLVDF

IEAAHQAGTK	VVYSDPDVMT	RCVVEAIVRS	GVHAILSKGW	SDRLEPEIPL	PPQIYSIKSI
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03-SEC7 domain

>RM

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DMFTKDAFLV	FRALCKLTMK	TLNTESERDL	KSHAMRSKLL	SLHLVLTILN	SHMQVFVDHN
SIIYSSSTNE	STSFIQATKQ	YLCLAISRNA	LSPVPQVFEI	SVEIFWRVLS	GMRTKLKKEI
EVFFHEIFTP	ILEMKTSTLK	QKSVILGMLA	RLCQEPQALV	EIYLNIDCDR	EAVDNIYEHL
MNTLSKIASP	ALSTSALAVP	GANLGLSEQQ	LKRQGLECLI	SVLRSLAWG	TDDPGRFESE
KQRKNALQEG	IRRFNYKPKG	IEYLIENRFI	PSKAPVDIAK	FLLSTDGLNK	ATIGEGDEAN
IATMHAFVDL	MDFSQPFVN	ALRMFLQSF	LPGEAQKIDR	FMLKFAERYI	AGNDAAYVLA
YSTILLNTDA	HNPQIKNRMT	KTDFIKNNKG	INDLPEELLL	AIFDEITNNE	IRMKDEVANV
GRDLQKEAFV	IQSLGTLQDQ	FFSASHFVHV	KPMFEVAVIP	FLAGISGPLT	DTDNLEIVEL
CLEGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKTLLDIAV	TEGNHLRGSW	QEVLTVCVSQL
ERMQLISSGK	SRKIPNEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVEF	VRALSHVSWE
EIQSSGLSEH	PRLFSLQKLV	EISYYNMNRI	RLEWSNLWEI	LGEHFNKVCC	HHNPHVGGFA
LDALRQLAMR	FLEKAELPHF	KFQKDFLQPF	EYTMIHNSNP	EIRDLVLQCL	QQMVQAKAHN
LVSGWRAMFG	VFSAASKVPT	ERIVNSSFEI	VSRINKDHFS	DVVKHGAFAD	LTVCTIDFCK
VSKDEAMIKF	WFPVLFSFYD	IIMNGEDLEV	RRLALDSLFI	TLKEYGTDFT	IDFWDSICQE
LLFPIFAVLK	SSQDITRWST	QEDMSVWLST	TMIQALRDLI	DLYTYFFETL	ERFLDGLLEL
LCVENDTLAR	IGTSCLQQLL	EKNVKKLSPA	RWERVVTAFF	RLFKTTPHQ	LFDESLRMDR
RRIFKQIIVK	CVLQLLLIET	TNELLRNSDV	YNTIPPEHLL	RLMGVLDHSY	QFARVFNEDE
ELRTALWKET	SSASTLVTVL	VQMYNDPRPE	HQAIRVQVAE	RLMPLSLGVI	QDFNKLRPES
QSKNITAWIP	VIGQIAQTFC	RLDEKTFARY	LPAIYPLTTD	LLSKEQEVGR	YLREYYIRVG
QSQGI					

>SP

DKPREIFEPL	RLACETRSEK	LMVASLDCIQ	KLVSYSFFVE	LVDIVAHTIT	SCHTESTPDA
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DLFVKDAFLV	FRALCKLTMK	NLNTESERDL	RSHAMRSKLV	SLHLVLTILN	SHMPVFVDPS
SIIYSSSSNE	ATTFINATKQ	YLCLSLSRNA	LSPVPQVFEI	SVEIFWRVLA	GMRTKLKKEI
EVFLHEIFIP	ILEMKTATLK	QKSVILGMLQ	RLCEDPRALV	EIYLNIDCDR	EAVDNIYEHL
MNTISKIATP	ALSTAALAVP	GANLGLSEQQ	LKRQGLDSL	AVLRSLVAVG	TDDPGRFENA
KQRKTVLQEG	LRKFAQKPKG	IDFMLEQGF	SSKSPHDIAA	FLLSTEGLNK	AAIGEDTEN
VEIMHAFVDQ	LNFAGLSFIE	AMRTFLQAFR	LPGEAQKIDR	FMLKFAERYI	AGNDAAYVLS
YSTILLNTDA	HNPQVKNRMT	KAEFIKNNRG	INDLPEETLN	AIFDDITSNE	IRMKDEIANV
GRDLQREAYV	MQSLGMANDQ	FFSASHFVHV	RPMFEVAVMA	FLAGISGPLT	QADDMEIVEL
CLEGFKAFVT	TLAKFTFLNN	LGEMKPKNME	AIKALLDIAV	SDGNNLRGSW	QEVLSVCVSQL
ERMQLISSGK	TRKLPAEELA	NESRSTHITV	AADMVFSLSH	YLNGTAVEF	VRALSSVSWE
EIQSSGLSEH	PRLFSLQKLV	EISYYNMNRI	RLEWSNLWEI	IGEHFNQVCC	HHNPHVGGFA
LDALRQLAMR	FLEKEELSHF	KFQKDFLRPF	EYTMIHANP	EIRDMVLTCL	QQMIQARAHN
LRSGWRTMFG	VFSAASKVLT	ERIVNSSFEI	VTRLNKEHFT	EIVKYGSFAD	LTVCTIDFCK
VNKDDANIKY	WFPVLFSFYD	IIMNGEDLEV	RRLALDSMFS	TLKTHGSTFT	TEFWDSICQE
LLFPIFAVLK	SSSDVSRWTT	QEDMSVWLST	TMIQALRDLI	DLFTYFFETL	EHLDDGLLDL
LCVENDTLAR	IGTSCLQQLL	ENNVKKLSAD	RWERVVTTFF	KLFRTTTPHQ	LFDENLRVDR
RRIFKQIIVK	CVLQLLLIET	TNELLQNKDV	YDTIPPEHLL	RLMGVLDHSY	QFARMFNDDK
DLRTALWKET	SSAETLVNVL	LQMYYDSRPK	HQELRSQVAE	RFLPLGLGVI	QDFNKLRPDT
QAKNIAAWMP	VIAKILDGFN	RLDEKAFVRY	LPGIYPLATD	LLARDTASRT	SLREYFVRVG
KVQGI					

>TA

DRPREIFEPL	RLACETGNEK	LQVVSLDCIS	KLISYSFFVE	LVDVVVHTIT	ACHAETTPDT
VSLQIVKALL	SIVLSATLLV	HQSSLLKAVR	TVYNIFLLSP	DAVNQTVAGG	GLTQMVHHVF

DLFIKDAFLV	FRALCKLTMK	NLNTESERDL	KSHAMRSKLV	SLHLVLTILN	SHMNVFVDPS
SIIFSTSSNE	ATSFINATKQ	YLCLSLSRNA	LSPVPQVFEI	SVEIFWRMLS	GMRTKLKKEI
EVFLHEIFIP	ILEMKTATLK	QKSVILGMLQ	RLCQEPQALV	ELYLNDCDR	EAADNIYEHL
MNTISKIATP	ALTTNALAVP	GHNLMGSEQQ	LKRQGLESV	AVLRSLVTWG	IDDPERFESA
KQRKTILQDG	IRRFTSSPKG	IAFLLENGFI	PARTPADIAI	FLLHTDGLNK	SAIGEGDEEN
IAIMHSFVDQ	MDFANTPFVD	ALRMFLQAFR	LPGEAQKIDR	FMEKFAQRYI	EGNEAAYVLS
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GRDLQKEAYV	MQSLGIANNQ	FFSASHFVHV	KPMFEVAVIP	FLAGISGPLT	DTDDLEVVEL
CLEGFKAFVT	TLAKFTFLNN	LGEMKAKNME	AIKTLLDIAV	SEGNHLRGSW	YEVLTVCVSQL
ERMQLISSKS	SRRMPAEELA	NESRSTHITV	AADMVFSLSH	FLSGTAIVEF	VRALSSVSWE
EIQSSGLSEH	PRLFSLQKLV	EISYYNMGRI	RLEWTNLWEI	IGEHEFNQVCC	HHNMHVGGFA
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LVSGWRTMFS	VFSAASKVLT	ERIVNSAFEI	VTRLNKEHFS	EIVRHGAFAD	LTVCTIDFCK
VSKDDAMIKF	WFPVLFGFYD	IIMNGEDLEV	RRLALDSLFT	TLKTYGSSFT	VEFWDTVCQE
ILFPIFAILK	SSSDLSRWST	QEDMSVWLST	TMIQALRDLI	DLYTFYFETL	ERFLDGLLDL
LCVENDTLAR	IGTSCLOQLL	ESNVKKLSVA	KWERVVTTFV	KLFKTTTPHQ	LFDENLRMER
RRIFKQIIVK	CVLQLLLIET	TYELLQNKDV	YNTIPPEHLL	RLMGVLDHSY	QFARMFNEDK
ELRTALWKET	NSAETLVNIL	VQMYDPRPE	HVALRPQVAD	KLLPLGLGVI	SDFNKLRIOT
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QVQGI

>PN

DKPREIFEPL	RLACETGNEK	LQIASLDCTS	KLISYSFFLE	LVDLVTHIT	ACHTETTPDT
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DLFFKDAFLV	FRALCKLTMK	NLNTESERDL	KSHAMRSKLV	SLHLVLTILN	SHMQVFVDPS
SIIYSSSSNE	ATSFINATKQ	YLCLSLSRNA	LSPVPQVFEI	SVEIFWRVLT	GMRTKLKKEI
EVFFHEIFIP	ILEMKTSTLK	QKSVILGMLQ	RLCQEPQALV	EIYLNDCDR	EATDNIYEHL
MNTISKISTP	NLTAAALAVP	GHNLMGSEQQ	LKRQGLESV	AVLKSIVTWG	TDDPGRFESA
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IAIMHAFVDL	LDFSNLPFVD	ALRLFLQSF	LPGESQKIDR	YMLKFAERYI	AGNDTAYVLS
YSTIMLNTDA	HNPQVKNRMT	KEEFIKNNRG	INDLPDEFLL	SIFDEIQTNE	IRMKDEIASV
GRDFQKEAYV	MQSLGMANDQ	FFSASHFVHV	RPMFEVAVIP	FLAGISGPLT	DTDDLEVVEL
CLEGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKALLDIAV	SDGNHLRGSW	HEVLTVCVSQL
ERMQLISSGR	ARKMPAEELA	NESRSTHITV	ATDMVFSLSH	YLSGTAIVEF	VRALSAVSWE
EIQSSGLSEH	PRLFSLQKLV	EISYYNMGRI	RLEWSNLWEI	IGEHEFNQVCC	HHNPHVGGFA
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QCLDDAMIKF	WFPVLFSFYD	IIMNGEDLEV	RRLALDSLFT	TLKEYGSTFT	VEFWDTVCQE
LLFPIFAVLK	NSSDLSRWST	QEDMSVWLST	TMIQALRDLI	DLYTYFYFETL	ERFLDGLLDL
LCVENDTLAR	IGTACLOQLL	EKNVKKLSAA	RWERVVTTFV	KLFKTTTPHQ	LFDENLRDTR
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ELRYALWKET	SSADTLVTVL	CRMYHDTRPQ	HLELRPQIAD	KFLPLGLGVV	NDFNKLRMET
SQKNIAAFMP	VVSKIIGFC	SLSDKAFGRF	LPAIYPSTAE	LCARDPEVRS	HLRDYFVRVG

QFQGI

>FM

DKPREIFEPL	RLACETGNEK	LQIASLDCIS	KLISYSFFLE	LVDIVTHIT	ACHTETAPDA
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SIIYASTNE	ATSFINATKQ	YLCLSLSRNA	VSPVPQVFEI	SVEIFWRLLT	GMRTKLKKEI
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CLEGFKAFVT	TLAKFTFLNN	LGEMKAKNME	AIKALLDIAV	SDGNHLRSSW	HEVLSCVSQ
ERMQLVSNR	ARKMPAEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVEF	VRALSAVSWE
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FVSGWRTLFS	VFSAASKVLT	ERVVNSAFEL	VTRLNKEHFA	EIIRHGAFAD	LTVCITDFCK
VSKDDAMIKE	WYPVLFSFYD	IIMNGEDLEV	RRLALNSLFT	TLKTHGSTFS	VEFWDTVCQE
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LCVENDTLAR	IGTACLQQLL	ENNVKKLSAG	RWERVVTTFI	KLFRTTTPHQ	LFDENLRGER
KRIFKQIIVK	CVLQLLLIET	TSELLQNNNEV	YDTIPPEHLL	RLMGVLDHSY	QFARMFNEDK
ELRTALWKET	SSADTLVTVL	SRMYYPDPRPQ	HLALRAQIAD	KFLPLGLGVI	TDFNKLRMES
SAKNISAWMP	VVARIVQGFC	GLSDKAFGRF	LPATYPAVSE	LVARDSEVRS	HLRDYFVRVG

QFQGI

>OS

DKPREIFEPL	RLACETGNEK	LQIASLDCIS	KLISYSFFLE	LVDIVTHTIT	ACHTEMTPTDA
VSLQIVKALL	SLVLSPVILV	HQSSLLKAVR	TMYNIFLLSP	DPVNQTVAGG	GLTQMVNVHF
DLFFKDAFLV	FRALCKLTMK	NLNTESERDL	KSHAMRSKLV	SLHLVLTLLN	SHMQVFVDPS
SIIYSASSNE	ATSFINATKQ	YLCLSLSRNA	LSPVPQVFEI	SVEIFWRVLS	GTRTKLKKEI
EVFFHEIFIP	ILEMKTSTLK	QKSUILGMLQ	RLCQEPQALV	EIFLNYDCDR	EAADNIYEHL
MNTISKIASP	ALSTTALAVP	GQNLGLSEQQ	LKRQGLESLV	AVLRSLLAWG	TDDPGRFESA
KQRKTILQDG	IKRFNYRPKG	IEFLLENGFI	ASREPAEIAK	FLLNTDGLSK	ATIGEGDDKN
IAIMHAFVDQ	LDFSNLFPVN	ALRLFLQSF	LPGESQKIDR	YMLKFAERYI	AGNDTAYVLS
YSTIMLNTDA	HNPQVKNRMT	RDDFIKNNRG	INDLPEELLS	AIYDEIVSNE	IRMKDEVANV
GRDLQKEAYV	LQSLGMANDQ	FFSASHFVHV	RPMFEVAVIP	FLAGISGPLT	DTNDLEVVEL
CLEGFKAFVT	TLAKFTFLNN	LGEMKAKNME	AIKALLDIAI	TEGNHLRGSW	HEVLTCVSQ
ERMQLISSGK	PRKMPTEELA	NESRSTHITV	ATDMVFSLSH	YLSGTAIVEF	VRALSAVSWE
EIQSSGLSEH	PRLFSLQKLV	EISYYNMNRI	RLEWSNLWEI	IGEHEFNQVCC	HHNPHVGGIFA
LDALRQLAMR	FLEKEELPHF	KFQKDFLRPF	EYTMTHNNNP	DIRDMVLQCL	QMIQARVHN
FVSGWRTLFS	VFSAASKVLT	ERIVNSAFEI	VTRLNRDHFP	EVIRHGAFAD	LTICITDFCK
VSKDDAMIKY	WFPVLFSFYD	IIMNGEDLEV	RRLALDSLFT	TLKSYGSTFT	VDFWDTVCQE
LLFPIFAVLK	SSSDLSRWTT	QEDMSVWLST	TMIQALRDLI	DLYTFYFETL	ERFLDGLLDL
LCVENDTLAR	IGTSCLQQLL	EKNVKKLSAA	RWERVVTTFV	KLFKTTTPHQ	LFDENLRTER
KRIFKQIIVK	CVLQLLLIET	TNELLQNDDEV	YDTIPPEHLL	RLMGVLDHSY	QFARMFNEDK
ELRTALWKET	SSADTLVTVL	RRMYYPDPRPH	HQALRPKIAD	KFLPLSLGVI	TDFNKLRMES
SAKNISAFMP	VVARIIEGFC	HLDDKAFGRY	LPAIYPLTAE	LLARDSEVRS	HLRDYFIRVG

QFQGI

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DHAREIILEPL	RLACETQNEK	LVIASLDCIS	KLVSYSFFAE	LVDLVAHTIA	SCHNESTSDT
VSVQIVKALL	GLVLSQTTIV	HHHSLQSVR	TVYNVYITST	SPQIQMLAQQ	SLTQIVDHVF
DLFLKDAFLI	FRALCKLSLK	PIPPENEQDP	KAHTYRSKVM	SLQLILHVLN	QHMAALLVDP
SIIYSSSTQD	TVTDFDKQISP	HLLQSLTRNA	PSPVPAVFEL	SVEIFWRALY	SMRAQLKTEI
GVLLHEIYIP	ILEMKTSTLR	QKAVILGMLA	RLCQEPQALV	EIYLNDCDE	RAVDNIYERL
MNIISKFGTN	SLNGGVLAAS	GSTLGLSETQ	IKRQALECLV	AVLRSVLAWG	TDDPSRFESA
KQRKTALLEG	IKKFNFKPKG	IQFLIENGFI	PDNNPKCIAT	FLHETDGLNK	TMLGEGDEEH
VAIMHAFVDM	MDFKDTLFVD	SLRHFLQAFR	LPGEAQKIDR	FLLKFAERYI	NGNDAAYVLG
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EHMQLIGTGR	SKRVPNEELA	SQSRSTHITV	AADMVFSLSH	YLSGTAIVDF	VRALCDVSWE
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LDALRQLAVR	FLEKEELPHF	KFQKDFLRPF	EYTMIHNRST	DIRDMVLQCL	HQMIQAKVHN
LRSGWRTMFG	VFSAASKVME	EGIVISAFDI	VKNVNATHFP	SIVKHGAFAD	LTVCITDFCK
ISKDDGMIKY	WYPVLFGFYD	IIMNAHDLEV	QKLALESLSF	ALKVYGTTFP	AEFWDTVCQE
LLFPIFAILK	NKHDLRSRFS	QEDMSVWLQS	TMFQALRALI	ELFTFHFSIL	ERLLDGLLEL
LSVENKAFSQ	IGTSCLQQLL	ETNVTRLSP	RWEKVSATFV	RLFRTTTPHQ	LFDENLRAER

QQIFGQIIVK	CILQLLLIEM	TSDLLKNEEF	YSAIPPDQLL	KIMGILDHSY	QFARSFNDDK
QLRTELWKES	TSAATLVNVL	LRMYYDNRPD	YRPYRHQVAE	RLLPLALGVL	GDYNKLRPDT
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RAQGI					
>SN					
FDPRIVFEAL	KLACETRSEK	LMVASLDCIS	KLISYSFFSD	LAELITHTVT	SAYTETTPDA
VSLQIVKALL	ALVLSPDILI	HHSSLLKAVR	SVYNVFLLSQ	DPVTQMVAQG	GLTQIVNHVF
ELFVKDAFLV	FRALCKLTMK	PLATESERDI	KSHAMRSKLL	SLHLILNVLN	SHMSVFVDPT
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KQRKTTLLAG	IKKFNFKPKG	VAFFIDAGFI	SAREPEPIAK	FLMSTDGLSK	TMIGEIEEEAN
KAIMHAFVDL	LDFSDLSFTD	ALRMFLQAFR	LPGEAQKIDR	FMLKFAEKYI	EGNDAAYVLA
YSTIMLNTDA	HNPQVKNRMT	KLDFVKNNRG	INDLPEEFLG	TIFDEIQSNE	IRMKDEVANV
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CLDGFKSFVT	TLAKFTFLNN	LGEMKTKNME	AIKTLLDVAV	NEGNQLKGCW	RDILTCVSQ
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EIQSSGMSSET	PRLFSLQKLV	EISYYNMGRI	RIEWSNMWAI	LGEHFNMICC	HNNIHVVFFA
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MRSQWRTMFG	VFSAAARANN	ERVTTTGFEI	VTRLNEDHFE	TVVQNGAFAD	LTVCITDFCK
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LLFPIFAVLK	STADVSRFST	QEDMSVWFST	TMVEALRNVI	DLYTHYFDLL	ERTLDGLLEL
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RRVFQQIVVK	CVLQLLLIET	THELLQNREI	YETIPPEQLL	RLMGVLDHSY	QFARSFNDDK
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KLQNL					
>AS					
DKPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFLVE	LVDLVTHTIT	SCYTESTPDA
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SYIYSSSSRE	STPFIQATKQ	YLCLALSRNA	VSPVPQVFEI	SVEIFWRVLS	GMRKQLKREI
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MNVISKIGTP	SLSTTALGHQ	PDAAHQNEVN	LRRLSLECLV	FVLRSLVAVG	TDDPGKFESA
KQMKTTLNEL	IKKFNFKPKG	IEFFLDTGFI	PSNTPQDIAR	FLLETEGLSK	AAIGEGDDLN
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VAKGI					
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DKPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFLVE	LVDLVTHTIT	SCYTESTPDA
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SYIYSSSSRE	STPFIQATKQ	YLCLALS RNA	VSPVPQVFEI	SVEIFWRVLS	GMRKQLKREI
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V SVMHAFTDM	LDFGGHDFIG	ALRLFLQSF R	LPGEAQKIDR	YMLKFAAAFM	ASQDAAYVLA
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GRDLQKEAYV	LQSNGMASDQ	YFSASHFVHV	KPMFEVAVMP	VLAGISGPLQ	DTDDLEIVEL
CLDGFKAFVT	TLGKFTFLNN	LGEMKTKNME	AIKTLLDIAV	TDGNQLKGSW	HEVLTCVSQ L
ERMQLISSGV	SRKQLKDELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VQALSDVSWE
EIQSSGMSQQ	PRMFSLQKLV	EISYYNMNRI	RLEWSNMWVI	LGEHFNQVCT	HSNPHVAFFA
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QAKGI					
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DRPRDIFEPL	RLACETRNEK	LMIASLDCIS	KLISHSFFVE	LPDLVAHTIT	SAYTETTPDS
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IATMHAFVDQ	LEFTDVPFTQ	ALRLFLQTFR	LPGEAQKIDR	FMLKFAERYI	AGNDTAYVLS
YSVILLNTDA	FNPQVKRRMS	KQDFIKNNTG	IDDLADEYLG	VIYDDITSNE	IRMKDEVANV
GRDLQKEAYI	LQSSNMANEQ	FFSASRAVHV	RPMFEIAWMS	FLAGLSNPLQ	DTDDLEIVEI
CLDGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKTLLDVAV	DEGNYLKGSW	HEVLTCVSQ L
ERMQLISSGR	HKKLPNEDLA	NESRSTHITV	AADMVFSFSP	NLSGAAIVDF	VQALSDVSWE
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M RSGWRTMFG	VFSAASKVLT	EDVNSAFEL	VTRLNRNHFS	DIVRYGAFAD	LTVCITDFSK
CSKDDPMIKY	WFPILFSFYD	IIMNGEDLEV	RRLALDALFS	TLKTYGTSYP	VPFWDTVFQE
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LCVENDTLAR	IGTSCFQQLL	ENNARKLTPE	KWERIVTTFV	RLFKTTTPHQ	LFDESLRVER
RRIFKQIIVK	CVLQ LLLIET	TNELLQNPEV	YQTIPPEHLL	RLMGELDHSY	QFARIFNEDK
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FSCGI					
>SH					
DRPREIFEPL	RLACETRNEK	LIIASLDCIS	KLISYSFFVE	LIDL VVHTIT	QCHTETTADA
ISLQVVKALL	ALVLSSTILV	HQSSLLKAVR	TVYNVFLMST	DPVNQTVAQG	GLTQMVHHIF
ELFLKDAFLI	FRSMCKLTMK	SLVTESE REM	KSHGMRSKLL	SLHMVLIILN	SHMDIFVNPY
SMVYSSSSRD	PVPFIQMANQ	YLCLTLSRNA	VSPVPQVFEV	SVEIFWRVLS	GLRTKLKKEI
GVL FHEIFIP	VLELKTSTLK	QKSUILGMLS	RLCQDPQALV	EIFLN YDCDS	KAIDNIYEHL
MNILT KIAAP	SLSTSALSVP	GTTLGQSEQQ	LRRQGLES LV	AVLRSLVAVG	TDDPSRFESA
KQKKTTLLEG	IKKFNFKPKG	ISFLIETGFI	PSKEPQDIAR	FLLNTDGLSK	TMIGEGDDEH
IATMHAFVDL	IDLRNMPFVD	ALRAFLQAFR	LPGEAQKIDR	FLLKFAERYI	EGNDTAYILS
FSVIMLNTDA	HNPQVKNRMT	KAD FVKNNRG	INDLPEELLH	AIYDDIVNNE	IRMKDEVATV
GRDLQREQYM	LQSSGMINDQ	FYSASHFVHV	RPMFEVAVIP	FLAGISGPLQ	ETDDMETVEL
CLDGFKAFVT	TLAKFTFLNN	LGEMKAKNME	AIKTLLDIAV	TEGNNLKGSW	HEVLSCVSQ L

EHMQLISSGK	PRKLPNEELA	NESRSTHITV	AADMVFSLSG	YLSGTAIDF	VQALCDISWE
EIQSSGLSQH	PRLFSLQKLV	EISYYNMSRI	RLEWSNIWDI	LGEHFNQCCC	HSNPHVGFFA
LDLRLQAMR	FLEKEELTHF	KFQKDFLKP	EYTMTHNQNP	DIRELVLQCL	QQMIQARVQN
MRSWRTMFG	VFSAASKVLT	ERITSSAFEI	VTSLNKEHFA	SIVRYGSFAD	LTVCTIDFCK
VSKDDPMIKY	WFPVLFSFYD	VIMNGEDLEV	RRLALDSLFS	TLKTYGAAFP	VDFWDTVCQE
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LCVENDTLAR	IGTSCLOQLL	ENNVKKLSAA	RWERVATTFFV	KLFKTTTPHQ	LFDESLRVER
RRIFKQIIVK	CVLQLLLIET	TNDLLRNSEV	YSTIPPEHLL	RLMGVLDHSY	QFARMFNEDK
ELRTGLWRES	SSASTLVHVL	LRMYDPRPE	HQAARQVAE	RLLPLGLGLV	QDYTKLRSDT
QAKNIAAWTP	VVGEILHGFC	RFDDKAFMRY	LSAIYPLAAE	LIAREPQIRE	GLRDYFVRAG

RLQGI

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DRPREIFEPL	RLACETRSEK	LMIASLDCIS	KLISYSFFEE	LVDLVVNTIT	QCHNESTPES
VSLQIVKALL	ALVLSQTILV	HHSSLLKAVR	TVYNIFLLSN	DPVNQTVAQG	GLTQMVNHVF
DLFIKDAFLV	FRALCKLTMK	PLNTESERDL	KSHAMRSKLL	SLHLVLSILN	SHMPLLVDPS
AIYSSSSSHD	ATTFVQAINQ	YLCLSLSRNA	VSPVLQVFEL	SVEIFWRVLS	GMRTKLKKEI
EVLFREIFMP	ILEMKTSTLK	QKAILGMFS	RLCQDPQALV	EIYLNDCDR	ESADNIYEHL
MNIISKIGSP	ALSTQAMSIA	GSNMGHSEAQ	LKRQGLECLV	TVLRSVAVG	TDDPSKFETA
KQRKTTLLEG	IKKFNFKPKG	IQFLIENGFI	PSNSPQDIAA	FLLHTDGLSK	AMIGEGDEAN
VTIMHAFVDM	MDFRGLGFVD	ALRTFLQSF	LPGEAQKIDR	YMLKFADKYM	ANNNAAYVFA
YSVILLNTDA	HNPQVKRMT	KADFIKNNRG	INALPEDFLT	TVYDEIVSNE	IRMKDEVANV
GRDLQKEAYV	MQSSGMASEQ	FFSATQFVHV	RPMFEVAVIP	FLAGLSGPLQ	ETDDIEIVEL
CLDGFKAFVT	TLAKFTFLNN	LGEMKAKNME	AIKTLLDIAL	HEGNHLKGSW	HEVLTCVSQL
EHMQLLSSGR	SKKLPAEALA	NESRSTHITV	ASDMVFSLSH	YLSGTAIVDF	VQALCDVSWE
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LDALRLAMR	FLEKEELPQF	KFQKDFLKP	EYTMVHNQNP	EIRDLVLVCL	QQMIQARVEN
MRSWRTMFH	VFSAASRVLT	ERIVNSAFEI	VTSLNKEHFG	AIVRHGAFAD	LTNCITQFCK
VSKSQPSDHF	WHPVLFGFYD	IIMTGEDLEV	RRLALDSMFS	TLKTYGAGFP	LEYWDAICSE
LLFPIFVSVL	SSQDLSRFST	QEDMSVWLST	TMIQALRNLI	DLYTTYFEIL	ERSLDGLLDL
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QAKNILAWTP	VVSEILDCFS	RLDDKSFKMY	LPAIYPLATH	LLDRDPEIRA	GLKAYYLRVG

FAQGI

>CP

DRPRAIFEPL	RLACETRTEK	LMIASLDCIS	KLISYSFFAE	LVDLVVHTIT	SCHTEATPET
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DFFVKDAFLV	FRALCKLTMK	PLNTESERDL	KSHAMRSKLL	SLHLVLTILH	SHMIMFTHPQ
AIYSTSSNE	ATSLVQAINQ	YLCLSLSRNA	VSPVPQVFEV	SVEIFWRVLL	GMRTKLKKEI
EVLLEHIFIP	VIEMRTSTLK	QKAVILAMFA	RLCQEPQALV	EIYLNDCDS	GATDNIYEHL
MNILSKIATT	PHSSAMLQVP	GSLIGLSEGQ	LRRQGLECLV	SVLRSVLTWG	GDDPSKFESA
KQKKTTLLEG	IKRFNYKPKG	IQMFIETGWI	PSNAPKDIK	FLLTTDGLSK	AMIGEADEEN
VAVMHALVDY	LDLFRNLPLD	ALRMFLQSF	LPGEAQKIDR	FMLKFADRYI	AGNDAAYILA
YSVILLNTDA	HSPQVKNRMT	KLDFRKNNRG	INDLPEEFLL	TIYDQIQSNE	IRMKDEVANV
GRDLQKEAYL	TQSNGMANAE	FFSASHFVHV	RPMLEVTVIA	FLAGLSGPLQ	NTDDLETVEL
CLEGFRAFVT	TLGKFTFLNN	LGEMKTKNME	AIKTLLDIAV	NEGNYLKGSW	HEVLSCVSQL
EQMQLISSGK	GRKLPAEELA	NESRSTHITV	AADMVFSLSH	YLTGTAIVDF	VRALCDVSYE
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VSKDDVMIRF	WFPVLFSFYD	IIMNGEDIEV	RRLALDSLFS	TLKTYGATFP	VDFWDTVCQE
LLFPIFAVLK	SSQDVSRFST	QEDMSVWLST	TMIQALRDLI	DLYTHYYEIL	ERFLDGLLDL
LCVENDTLAR	IGTSCLOQFL	ENNVSKLSSA	RWERVASTFV	KLFKTTTPHQ	LFDDSLRVER
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YSQGI					
>FS					
DRPREVFEPL	RLACETRSEK	LMIASLDCIS	KLISYSFFAE	LVDLVAHTIT	ACHTEVTPET
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DLFVKDAFLV	FRALCKLTMK	ALNTESERDL	KSHAMRSKLL	SLHLVLTVLN	SHMALFVDPT
AIYSSSSNE	ATTFVQAINQ	YLCLSLSRNA	VSPVPQVFEI	SVEIFWRVLA	GMRTKLKKEI
EVLLEHIFIP	ILEMRTSTLK	QKAVILGMLS	RLCQDPQALV	EIYINYDCDS	EAVDNIYEHL
MNIISKIGTP	ALSTYTLSVS	GSTMGLSESQ	LKRQGLECLV	GVLRSVAVG	IDAASRFESA
KQKKTILVEG	VKKFNFNPKG	MQFFIESGFI	PSNDPPVIAE	FLLTTDGLSK	AMIGESDEHN
VAVMHAFIDQ	LDFKDMTFLQ	ALRALLAAFR	LPGESQKIDR	IVLKFSERYI	ANNDCAVLS
YSTIMLNTDQ	HSPQVKRMD	KDEFVRNNRG	INDLPEELLH	EIYDSIRTNE	IRMKDEVANV
GRDLQKEAYV	TQSNGMANDQ	FFSASDFVHV	KTMFEVAVMS	FLAGLSGPLQ	ETDDLEVVEL
CLDGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKALLDIAV	TEGNNLKGSW	QEVLMCVSQL
EHMQIITSTK	GRKLPTTELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VQALTDVSWK
EIQSSGMSQH	PRLFSLQKLV	EISYYNMSRI	RLEWSNLWDI	LGEHFNVRCC	HNNPHVGGFA
LDLRLQAMR	FLEKEELSHF	KFQKDFLKPF	EYTMTHNQNP	DVRDMVLQCL	QQMIQARVQN
MRSQWRTMFG	VFSAASKVLT	ERIANSAFEI	VTRLNKDHFA	TIVRYGSFAD	LTVCITEFCK
CSKDDPMIRY	WFPVLFGFYD	IIMNGEDLEV	RRLALDSLFS	TLKTYGKTYT	VEFWDTVCQE
LLFPIFAVLK	SSQDLRSFST	QEDMSVWLST	TMIQALRDLI	DLYTFHFDIL	ERFLDGLLDL
LLAENDTLAR	IGTSCLOQLL	EKNVTKLSPA	RWERVATTFV	KLFRTTTPHQ	LFDETLRVER
RRTFKQIIVK	CVLQLLLIET	TNDLLRNDLV	YNTIPPDHLL	RLMSVLDHSY	QFAREFNEDK
DLRTGLWKES	SSAATLVHVL	LRMYDERPE	HEAVRPQIAT	QLMPLGLGVL	QDYTKLKADT
QAKNITAWTP	VVAEILEGFC	KFDEKSFARY	LPVAVPLVTE	LLSRDPEIRQ	GVRLYFVRVG
HAQGI					
>GT					
DRPREIFEPL	RLACETRNEK	LMVTSLDCIS	KLISYSFFVE	LVDLVVHTIT	SCHTETTPET
VSLQIVKALL	ALVLSPTVLV	HQSSLLKTVR	TVYNVFLST	DPVNQMVAQG	GLTQMVHHVF
DLFIKDAFLV	FRALCKLTMK	PLNTESERDL	KSHAMRSKLL	SLHLVLTVLN	SHMALFVAPT
SIIYSSSSHE	ATPFVQAVNQ	YLCLSLSRNA	VSSVPQVFEL	SVEIFWRVIS	GMRTKLKKEI
EVLLEHIFIP	ILEMKTSTLK	QKAAILGMLQ	RLAQDPQALV	EIYLYNYDCDS	QAADNIYEHL
MNIISKIGTP	SLSTTALSVP	GSTLGLSDFQ	LKRQGLECLV	TVLRSVAVG	TDDPSKFESA
RQKKTTLLEG	IKKFNSKPKG	IEFFIENGFI	PSRSPQDIAR	FLLHTDGLNK	TMIGEGNEEN
IAIMHAFVDM	LEFRNLGFVD	ALRTFLQTFR	LPGEAQKVER	FMEKFAERYF	TTNGAAFLVA
FSTIMLNTDA	HSPQVKSRMS	KADFLKNNRG	INDLPEEYLS	ALYDDIVANE	IRMKDEIANV
GRDLQREAYL	MQSSGMANDQ	FFSASHAVHV	RPMFEAAWMP	FLAGLSGPLQ	DTDDPEVIEL
CLDGFKAFVT	TLAKFTFLNN	LGEMKSKNME	AIKTLDDVAV	SEGNLYKSSW	HEVLTCVSQL
ERMQLISSGR	PRMLPTTELA	NESRSTHITV	AADMIFSLSH	YLNGTAVDF	VQALCDVSWD
EIQSSGLSPR	PRLFSLQKLV	EISYYNMNRM	RLEWLSLWDI	LGQHFNQVCC	HSNPNVGGFA
LDLRLQAMR	FLEKEELPHF	TFQKDFLKPF	EYTMVHNANP	DVRDMVLQCL	SQMIQARVHN
LRSGWRTLFG	VLSAASKVLT	ERIVSSAFEI	VTRVNRDHFS	AIARHGAFAD	LTVCITDFCK
VSKDDPMIRF	WFPVLFGFYD	IIMNAEDLEV	RRLALDSLFT	TLKTYGPDYP	IDFWDTVCQE
LLFPIFAVLK	SSQDLRSFNS	QEDMSVWLQS	TMIQALRDLI	DLYTYLFDIL	ERFMDGLLEL
LCVENDTLAR	IGTSCLOQLL	EHNVKKMSPA	RWDRTATFV	KLFRTTTPHQ	LFDESLRVDR
RRIFKQIIVK	CVLQLLLIET	LNDLLRNDLV	YSTIPPEHLL	RMMGVLDHSY	QFARSFNEDK
DLRMALWKES	SSASTLVHVL	LRMYDPRPE	HQAARPQIAE	RLLPLELGLV	QDYNRLRLDT
QAKNIAAWTP	VVAEILQGFC	RFDDKAFLRY	MPAVYPLATE	LLSRGDEIRE	GLKDYYMRVG
YAQRI					
>PS					
DKPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFVD	LVDLVVHTIT	ACHTETTPDP
VSLQIVKALL	AIVLSSTTLV	HQSSLLKAVR	TVYNVFLST	DPITQTVAQG	GLTQMVHHVF
DLFVKDAFLV	FRALCKLTMK	PLNSESERDL	KSHSMRSKLL	SLHLVLTVLN	SYMPFLVSPS
ALIYSSSSHE	ATPFVQAVNQ	YLCLSLSRNA	VSPVPQVFEL	SVEIFWRVLS	GMRTKLKKEI

EVLLHEIFIP	IIEMKSSTLK	QKGVILGMFY	RLCQDPQALV	EIYLNDCDS	EASDNIYEHI
ANLISKIATP	SYTTTSLAVS	GSTVGLSERQ	LKRQGLECLV	AILKSLVVG	TDDPNRFESA
RQKKTTLLEG	VKKFNMKPKG	VEFFLETGFI	PNRNPQDIK	FLLYTDGLSK	AMIGEGDEQN
IAIMHAFVDL	LDFKDLFVD	ALRLFLQSF	LPGEAQKIDR	YMLKFAERYI	AGNDAAYVLA
YSTVMLNTDQ	HNPQVKKRMT	KADFIKNNRG	INDLPEEYLS	LVFDEIASNE	IRMKDEVANV
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CLDGFKAFVT	TLAKFTFLNN	LGEMKAKNME	AIKALLDIAV	TDGNNLKGSW	REVLQCVSQL
EHMQLITSGR	LRKLPAEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VRALCDVSWE
EIQSSGLSQH	PRLFSLQKLV	EISYYNMNRI	RLEWSNLWDI	LGEHFNQVCC	HNNPHVGFFA
LDLRLQALAMR	FLEKEELPHF	KFQKDFLQPF	EYTMVHNANP	EIRDMVLQCL	QQMIQARVQN
LRSGWRTMFG	VFTAAAKVLT	ERIVNSAFEI	VTSLNKEHFS	AIVRHGSFAD	LTVCTITDFCK
ASKDDPMIKF	WFPVLFGFYD	IIMNGEDLEV	RRLALDSLFT	TLKTYGSSYP	VAFWDTVCQE
LLFPIFAVLK	SSQDLRSFST	QEDMSVWLST	TMIQALRDLV	DLYTFHFDIL	ERFLDGLLDL
LCVENDTLAR	IGTSCLOQLL	ENNVKRLSPA	RWERVVTTFI	RLYKTTTPHQ	LFDESLRTER
RRVFKQIIVK	CVLQLLLIET	TNDLLRSKQV	YDTIPPEQLL	RLMAVLDSY	QFARMFNEDK
ELRTGLWKES	SSASTLVHIL	LQMYDPRAD	HRSARPIAD	KLLPLGMGVL	QDYSKLRPDT
QAKNIAAWTP	VVAEILHGFS	RFDEKAFSRY	LPVYPIAVD	ILARDPEIRE	GLRSYFSRVG

YVQGI

>LB

DRPREIFEPL	RLACETKNEK	LTVASLDCIS	KLISYSFFAE	LVDLVAHTIT	SCHTETTPDP
VSLQIVKALL	SLVLSPTIIV	HHSSLKAVR	TVYNVFLSS	DPVNQMQAG	GLTQMVHHVF
DLFIKDAFLV	FRALCKLTMK	PLNTESERDP	KSHPMRSKLL	SLHLVLTVLN	SHMSLFVDPT
AIYSSSTNE	ATNFVQAINQ	YLCLSLSRNA	VSPVPQVFEI	SVEIFWRVLA	GMRTKLKKEI
EVLLHEIFIP	IEMRTSTLK	QKAVIIGMLS	RLCQDPQALV	EIYLNDCDS	EAADNIYEHL
MNIISKFGTI	SWSNSGLAIS	GSTMGLSDAQ	LRRQGLECLV	AVLRSVVG	TDDPSKFESA
KQKKTTLMEG	IKKFNFKPKG	IQFLLEAGFI	ASKDPRDIAT	FLLTTDGLSK	SMIGEGDEEN
ISIMHAFVDQ	LDFKDHPFID	ALRIFLQSF	LPGEAQKIDR	YMLKFADRYI	AGNDTAYVLA
YSVIMLNTDA	YNPQVKKRMT	KTDFIKNNRG	INDLPEELLS	EIFEDIANNE	IRMKDEVASV
GRDLQKEAYV	MQSNGMANDQ	FFSASHFVHV	RPMFEVAVIP	FLAGLSGPLQ	ETDDLEVVEL
CLDGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKALLDVAV	TEGNNLKGSW	HEVLTCVSQL
EHMQLISSGR	THKLPTTELA	NESRSTHITV	AADMVFSLSH	FLSGTAIVDF	VQALCDVSWE
EIQSSGLSQH	PRLFSLQKLV	EISYYNMTRI	RLEWSNLWDI	LGEHFNQVCC	HNNPHVGFFA
LDALRLQALAMR	FLEKEELAHF	KFQKDFLQPF	EYTMVHNQNP	EIRDMVLQCL	QQMIQARAQN
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VSKDDEMIRY	WFPVLFGFYD	IIMNGEDLEV	RRLALDSLFT	TLKTYGSTYP	LEFWDTVCQE
LLFPMFAVLK	SSQDLRSFNT	QEDMSVWLST	TMIQALRDLI	DLYTFYFDIL	ERFLDGLLDL
LCVENDTLAR	IGTSCLOQLL	ENNMTKLSST	RWERVTTTFV	RLFRTTTPHQ	LFDDNLRVER
RRTFKQIIVK	CVLQLLLIET	TNDLLRNENV	YNTIPPEQLL	RLMGVLDHSY	QFARMFNDDK
ELRTGLWKES	SSAATLVHVL	LRMYDPSRPE	HQAARPIAE	RLLPLGLGVL	QDYNKLRPDT
QSKNIIAWTP	VVAEILDGFC	RFDDKAFSRY	LPVYPIAID	LLSREAEVRL	ALKTYFVRVG

YAHGI

>PI

DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFAE	LVDLVAHTIT	ACHTETTPET
VSLQIVKALL	SLVLSPVILI	HQSSLLKAVR	TVYNVFLST	DPVNQMQAG	GLTQMVHHVF
DLFIKDAFLV	FRALCKLTMK	ALNNESERDL	KSHAMRSKLL	SLHLVLTVLN	SHMPLFVDPS
AIYSSSSNE	ATTFVQAINQ	YLCLSLSRNA	VSPVPQVFEI	SVEIFWRVLS	GMRTKLKKEI
EVLLHEIFIP	IEMRTSTLK	QKAVILGMLS	RLCQDPQALV	EIYLNDCDS	EAVDNIYEHL
MNIISKIGTP	SLSTYLSVS	GSTMGLSEHQ	LKRQGLECLV	AVLRSVAVG	TDDPSRFESA
KQKKTTLLEG	IKKFNYKPKG	VQFLIETGFI	PSKDPSTIAY	FLLTTDGLSK	AMIGEAEDEN
IATMHAFVDQ	LDFKDLFSLD	ALRIFLQAFR	LPGEAQKIDR	FMLKFAERYI	AGNDTAYVLA
YSTIMLNTDA	HSPQVKKRMT	KADFVKNNRS	INDLPEELLH	SIFDDIVSNE	IRMKDEVANV
GRDLQKEAYV	MQSNGMANDQ	FFSASHFVHV	RPMFEVAVMS	FLAGLSGPLQ	ETDDLEVVDL
CLEGFKAFVT	TLGKFTFLNN	LGEMKTKNME	AIKTLLDIAV	TEGNSLKGSW	QEVLTVCVSQL
EHMQIITSGK	TRRLPTEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VQALTDVSWK

EIQSSGLSQN	PRLFSLQKLV	EISYYNMNRI	RLEWSNLWDI	LGEHFHKVCC	HNNPHVGIFA
LDLRLQLAMR	FLEKEELPHF	KFQKDFLKPF	EYTMIHNP	DIRDMVLQCL	QQMIQTRVQN
MRSWGRTMFG	VFSAASKVLT	ERIANSAFEI	VTSLNKDHFA	AIVHYGSFAD	LTVCTITEFCK
VSKEDNMIRY	WFPVLFGFYD	IIMNGEDLEV	RRLALDSLFS	TLKTYGSTYT	VEFWDSVCQE
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YVHSI					
>HI					
DRPREIFEPL	RLACETRNEK	LMVASLDCIS	KLISYSFFVE	LVDLVVHTIT	TCHTETTADS
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EVLFFHEIFFP	ILEMKTSTLK	QKAVILGMLS	RLCHDPQALV	EIYLNIDCDS	QAADNIYEHL
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IATMHAFVDM	LDLRNMPFVD	ALRVYLQAFR	LPGEAQKIDR	FMLKFAERYI	EGNDTAYVLS
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CLDGFRFVFT	TLGKFTFLNN	LGEMKTKNME	AIKTLLDVAV	TEGNNLKGSW	REVLSCVSQ
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VSKDDPMIKY	WFPVLFSFYD	VIMNGEDLEV	RRLALDSLFS	TLKKYGATFP	VDFWDTVCQE
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LCVENDTLAR	IGTSCLOQLL	ESNVRKLSPA	RWERVATTFV	KLFRTTTPHQ	LFDESLRVER
RRIFKQIIVK	CVLQLLLIET	TNDLLRNDEV	YNTIPPEHLL	RLMGVLDHSY	QFARLFNEDK
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YAQGI					
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DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISHSFFID	LVDLVTSTIT	ACHMETTPDT
VSLQIVKALL	SLVLSSTLLV	HQSSLLKAVR	TVYNIFIMSH	DPVNQTVAQG	GLTQMVNHVF
DMFIKDAFLV	FRALCKLTMK	PLNTESERDF	TSEGMRSKLL	TLHLVLTVLN	SHMAVFAEPW
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EVFFHEIFVP	ILEMKTSTLK	QKGVILGMLL	RLCQEPQAVV	EIYLNIDCDR	EAADNIYEHL
MNTISKIATP	SLSTAALAVP	GAGLGFSESQ	LKRQGLECLV	AVLRSLVAWG	TDDPGKFVSA
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YSTIMLNTDA	HNPQVKNRMT	KLDFIRNNRG	INDLPEDFLS	AIFDDILSNE	IRMKDEVANV
GRDLQKEAYV	MQSHGMANDQ	FFSASHFIHV	RPMFEVAVIP	FLAGISGPLQ	DTDDMEVVEL
CLDGAECFVT	TLAKFTFLNN	LGEMKTKNME	AIKTLLDIAV	TEGNYLKGSW	HEVLTCVSQ
ERMQLISSGR	SRKLPAEELA	NESRSTHITV	AADMVFSLSH	YLSGDAIVDF	VKALSSVSWE
EIQSSVASEH	PRLFSLQKLV	EISYYNMNRI	RLEWSHLWDI	LGEHFNQVCC	HNNPHVGGFA
LDALRLQLAMR	FLEKEELPHF	KFQKDFLKPF	EYTMTHNP	DIRDMVLQCI	QQMIQARVQN
MRSWGRTMFG	VFSAASKVLT	ERVVNSAFEI	VSRLNEDHFS	AVVRYGAFAD	LTVCTITDFCK
VSKDDPMIKF	WFPVLFSFYD	IIMNGEDLEV	RRLALDSLFS	TLKTYGSSFP	VEFWDTVCQE
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LCVENDTLAR	IGTSCLOQLL	ESNVKKLSPT	RWERVTSTFV	KLFKTTTPHQ	LFDDSLRAER
RRIFKQIIVK	CVLQLLLIET	TNELLQNDDEV	YNTIPPEHLL	RLMGVLDHSY	QFARVFNEDK
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HAKNIASWTP	VIAEILNGFC	RFDDKAFSRY	MPVIYPPAAE	LLTKDAEVRL	GLRDFFTVRG
RAQGI					
>RI					
DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISHSFFID	LVDLVTSTIT	ACHTETTPDT
VSLQIVKALL	SLVLSSTLLV	HQSSLLKAVR	TVYNIFIMSH	DPVNQTVAGG	GLTQMVNHVF
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EVFFHEIFVP	ILEMKTSTLK	QKGVILGMLL	RLCQEPQALV	EIYLNIDCDR	EAADNIYEHL
MNTISKIATP	SLSTAALAVP	GAGLGFSESQ	LKRQGLECLV	AVLRSLVAWG	TDDPGKFVSA
KQRKTTLLEG	IKKFNFKPKG	IEFLVDSGFI	PTRSPYEIAK	FLLQTDGMNK	TMIGEGDDEN
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YSTIMLNTDA	HNPQVKNRMT	KLDFIRNNRG	INDLPEDFLS	AIFDDILSNE	IRMKDEVANV
GRDLQKEAYV	MQSHGMANDQ	FFSASHFIHV	RPMFEVAVIP	FLAGISGPLQ	DTDDMEVVVEL
CLDGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKALLDIAV	TEGNYLKGSW	HEVLTVCVSQL
ERMQLISSGR	SRKLPAAELA	NESRSTHITV	AADMVFSLSH	YLSGDAIVDF	VKALSSVSWE
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LDALRQLAMR	FLEKEELPHF	KFQKDFLKPF	EYTMTHNANP	DIRDMVLQCI	QQMIQARVQN
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VSKDDPMIKF	WFPVLFSFYD	IIMNGEDLEV	RRLALDSLFS	TLKTYGSSFP	VEFWDTVCQE
LLFPIFAVLK	STSDLTRWTT	QEDMSVWLST	TLIQALRDLI	DLYTYFFDTL	ERFLDGLLEL
LCVENDTLAR	IGTSCLOQLL	ESNVKKLSPT	RWERVTTTFV	KLFKTTTPHQ	LFDDSLRAER
RRIFKQIIVK	CVLQLLLIET	TNELLQNDV	YNTIPPEHLL	RLMGVLDHSY	QFARVFNEDEK
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RAQGI					
>DS					
DKPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFVE	LVDLVVHTIT	SCHTESTPET
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MNIISKIGTP	SFSTAALSVP	GSTIGNSEAQ	LRRQGLECLV	AALKSLVAWG	TDDPSKFESA
KQKKTTLLEG	IKKFNFKPKG	VDFFLETGFI	PSREPKDIAR	FLLETDGLSK	VAIGEGDAEN
IAIMHAFVDM	LDLSNMPFVD	ALRQFLQAFR	LPGEAQKIDR	FMLKFAERYM	SGNDTAYVLA
FSTIMLNTDA	HSRQVKNRMT	KQGFIAANNRG	INDLPEEFSL	AIYDDITTNE	IRMKDEIATV
GRDLQKEQYM	MQSNNMANEQ	FFSASHFIHV	RPMFEVAVIP	FLAGLSGPLQ	DTDELEIVEL
CLEGFKAFVS	TLTKFTFLNN	LGEMKTKNME	AIKTLLDVAV	TEGNQLKASW	RDVLTVCVSQL
EHMQLISSGR	SRKPPTTELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VRALCDVSWE
EIQSSGMSQH	PRLFSLQKLV	EISYYNMNRI	RLEWSNMWEI	LGEHFNQVCC	HKNPHVGGFA
LDALRQLAMR	FLEKEELPHF	KFQKDFLRPF	EYTMIHNSNP	DIRDMVLQCL	QQMIQARVHN
LRSGWRTMFA	VFSAASKAAT	ERIASSAFEI	VTRLNKEHFP	SIVRHGSFAD	LTVCITDFCK
VSKDDPMIKY	WFPVLFGFYD	VIMNGEDLEV	RRLALDSLFN	TLKTYGSTYP	VEFWDTVCQE
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LCVENDTLAR	IGTSCLOQLL	ENNVKKLSAA	RWERIALTFV	KLFRTTTPHQ	LFDESLRVER
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QAKNIAAWTP	VVAEILQGFV	KFDDKAFTRY	LPAIYPLATD	LLSREPEIRE	GLREYFLRVG
YIQGI					
>TV					
DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFAE	LVDLVVHTIT	SCHTENTPET
VSLQIVKALL	ALVLSPTILV	HQSSLLKAVR	TVYNIFLLSL	DAVNQMVAQG	GLTQMVNHVF
DMFIKDAFLV	FRALCKLTMK	PLNSESERDL	KSHAMRSKLL	SLHLVLMILN	SHMPIFVSPS
AIISYSSSSHE	ATPFIQAASQ	YLCLSLSRNA	VSPVPQVFEI	SVEIFWRVVA	GLRTKLKKEI
EVLLHEIFIP	ILEMKTSTLK	QKAVILSMLQ	RLCQEPQALV	EIYLNIDCDG	EAVDNIYEHL

MNIISKIGTP	SFSTASLSVP	GSTIGNSEAO	LRRQGLECLV	AVLKSLSVSWG	TDDPTKFESA
KQKKTTLLEG	IKKFNFKPKG	IEFLIETGFI	ASREPKDIAR	FLLETDGLNK	AAIGEGDEEN
ITIMHAFVDT	MDLGNMPFVT	ALRTFLQAFR	LPGEAQKIDR	YMLKFAERYI	ATNDTAYVLA
YSTILLNTDA	HNPQVKNRMT	KQGFIANNRG	INDLPEDLLN	AIYDEIVSNE	IRMKDEVANV
GRDFQKEAYV	MQSNNMASEQ	FFSASHFVHV	RPMFEVAVIP	FLAGISGPLQ	DTDDIEVVVEL
CLEGFKAFVS	TLAKFTFLNN	LGEMKTKNME	AIKTLLDVAV	TEGNHLKASW	REVLTCVSQ
EHMQLLSSGR	VRKPPTEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VRALCDVSWE
EIQSSGLSQH	PRLFSLQKLV	EISYYNMNRI	RLEWSNMWDI	LGEHFNQVCC	HKNPHVGFFA
LDALRQLAMR	FLEKEELAHF	KFQKDFLRPF	EYTMIHNSNP	DVRDMVLQCL	QQMIQARVHN
LRSGWRTMFA	VFSAASKAAT	ERIANSAFEI	VVRLNKEHFS	SIVRHGSFAD	LTVCITDFCK
VSKDDPMIKY	WFPVLFIFYD	VIMNGEDLEV	RRLALDSLFS	TLKKYGSTYP	LEFWDTVQCQ
LLFPMFAVLK	SSQDLSRFST	QEDMSVWLST	TMIQALRNLI	DLYTFYFETL	ERFLDGLLDL
LCVENDTLAR	IGTSCQLQLL	ESNVKKLSPA	RWERVATTFV	KLFRTTTPHQ	LFDESLRVER
RRIFRQIIVK	CVLQLLLIET	TNDLLRNDDEV	YNTIPPEHLL	RLMGILDHSY	QFARMFNEDEK
ELRTGLWKES	SSASTLVHVL	LRMYYPDPRD	HQAARPVQAD	RLMPLGLGLV	QDFNKLRLDT
QAKNIAAWTP	VVAEILQGFV	RFDDKAFTRY	LPAVYPLATD	LLSREPEIRE	GLREYFLRVG

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DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFVE	LVDLVVHTIT	SCHSESTPET
VSLQIVKALL	ALVLSPTILV	HQSSLLKAVR	TVYNVFLLSV	DPINQTVAQG	GLTQMVNHVF
DLFIKDAFLV	FRALCKLTMK	PLNAESERDL	KSHAMRSKLL	SLHLVLTILN	NHMA LIVSPN
SIIYSSSSND	STTFVQAITQ	YLCLCLSRNA	VSPVPQVFEA	SVEIFWRVIS	GMRTKLKKEI
EVLLHEIFIP	ILEMKTSTLK	QKAVILNMLQ	RLSQDPQALV	EIYLNDCDS	EAVDNIYEHL
INIVSKLATP	ALSTNALS GP	GSTLGTSESQ	LRRQSLECLV	STLKS LVTWG	TDDPTKFESA
KQKKTTLLEG	IKKFNFKPKG	IQFFLETGFI	PSPAPQDVAR	FLLETDGLSK	AMIGEAD EEN
VATMHAFVDL	MDFRGLEFVD	ALRVFLQA FR	LPGESQKIDR	YMLKFAERYI	AGNDTAYVLA
YSTIMLNTDA	HNPQVKSRMT	KADFIKNNRG	INDLPEELLS	SIYDDIVNNE	IRMKDEVANV
GRDLQKEAYM	MQSNNMANEQ	YFNASHFVHV	KPMFEVAVIP	FLAGLSGPLQ	GTDDLEIVEL
CLDGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKALLDVAV	TEGNNLKSSW	REVLTCVSQ
EHMQLITSGR	PRKLPTEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VRALCDVSWE
EIQSSGMSQH	PRLFSLQKLV	EISYYNMNRI	RLEWSNLWDI	LGEHFNQVCC	HNNPHVAFFA
LDALRQLAMR	FLEKEELPHF	KFQKDFLRPF	EYTMVHNSNP	EVRDMVLQCL	QQMIQARVAN
LRSGWRTMFG	VFSSAAKVPT	ERIVSSAFEI	VTRLNKDHFQ	AIVRHGAFAD	LTVCITDFCK
VTKDDPMIKY	WFPTLFGFYD	VIMNGEDLEV	RRLALDSLFS	TLKTYGSTFP	VEFWDTVQCQ
LLFPIFAVLK	SSQDLSRFST	QEDMSVWLSS	TMIQALRNLI	DLYTFHFEIL	ERFLDGLLDL
LCVENDTLAR	IGTSCQLQLL	ESNVKKLSPA	RWERVATTFV	KLFRTTTPHQ	LFDESLRVER
RRIFKQIIVK	CVLQLLLIET	TNDLLRNEEV	YNTIPPEHLL	RLMGVLDHSY	QFARAFNEDEK
ELRTGLWKES	SSASTLVHIL	LRMYYPDPRPE	HQASRPQVAD	RLLPLSLGLV	QDFTKLRLDS
QAKNIAAWTP	VIAEILHGFA	KFDDKAFATY	LPAIYPLATE	LLAREPEIRQ	NLRDYFLRVG

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DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFAE	LVDLVVHTIT	ACHSENTPET
VSLQVVKALL	SLVLSPTIFV	HHSSLLKAVR	TVYNVFLLSV	DPVNQMVAQG	GLTQMVHHLT
DLFVKDAFLV	FRALCKLTMK	PLNSESERDI	KSHAMRSKLL	SLHLVLTVLN	SHMPLFNDPS
AIYSSSSND	DTMFIQAINQ	YLCLSLSRNA	VSPVPQVFEV	SVEIFWRVLS	GMRTKLKKEI
EVLLHEIFIP	ILEMKTSTLK	QKAVILGMLS	RLCQDPQALV	EIYLNDCDS	EAVDNIYEHL
MNIISKICTP	SLNSTSLSVS	GSMMGLSEAO	LRRQGLECMV	AVLRSLSVSWG	TDDPTKFESA
KQKKTTLLEG	IKKFNFKPKG	VQFLIETGFI	PSRAPRDVAQ	FLLTTDGLAK	AMIGE GEEEN
IATMHAFVDL	LDFRNLPFID	ALRIFLQA FR	LPGEAQKIDR	FMLKFAERYI	AGNDTAYVLA
YSTILLNTDA	HSPQVKNRMT	KSDFYKNNRG	INDLPEEFLS	TIYDDIVKNE	IRMKDEIANV
GRDLQKEAYM	LQSNGMANDQ	FFSASHFVHG	RPMFEVAVIP	FLAGLSGPLQ	NTDDLEIVEL
CLDGFKAFVT	TLGKFTFLNN	LGEMKAKNME	AIKTLLDVAV	TEGNSLKGSW	REVLTCVSQ
EHMQLISSGR	SRKLPAEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VQALCDVSWE
EIQSSGLSQH	PRLFSLQKLV	EISYYNMNRI	RLEWSNLWDI	LGEHFNQVCC	HNNPHVGFFA

LDLRLQQLSTR	FLEKEELPHF	KFQKDFLQPF	EYTMTHNANP	DIRDMVLQCL	QQMVQARVQN
MRSQWRTMFG	VFSAASRVLT	ERIASSAFEI	VTSLNEDHFA	AIVRHGAFAD	LTVCITDFCK
VSKDDTMIRF	WFPVLFGFYD	IIMNGEDLEV	RRLALDSLFT	TLKTYGSTYP	VEFWDTVCQE
LLFPIFAVLK	SSQDVSRFST	QEDMSVWLST	TMIQALRDLI	DLYTFYFDIL	ERFLDGLLDL
LCVENDTLAR	IGTSCLOQL	ENNVTKLNPS	RWERVATTFV	RLFRTTTPHQ	LFDDNLRLVER
RRIFKQIIVK	CVLQLLLIET	TNDLLRNDV	YNNIPPEQLL	RLMGVLDHSY	QFARMFNDDK
ELRTGLWKES	SSAATLVHVL	LRMYFDERPE	HQAARQIAE	RLLPLGLSVL	QDYTKLRSDT
QAKNITAWTP	VVAEILEGFC	RFDNKAFVRY	LPAIFPLTTG	LLARDPEIRL	GLKMYFERVG
YSQGI					
>FP					
DRPREIFEPL	RLACETRNEK	LMVASLDCIS	KLISYSFFVE	LVDVVVHTIT	SCHSETTPDP
VSLQIVKALL	ALVLSSTILV	HGSSLLKAVR	TVYNVFLSS	DPVNQTVAGG	GLTQMVNHVF
DLFIKDAFLV	FRALCKLTMK	PLNSESERDL	KSHAMRSKLL	SLHLVLTILN	THMAIFVSPS
AIYSSSSRE	ATSFVQAVNQ	YLCLCLSRNA	VSPVPQVFEI	SVEIFWRVIS	GLRTKLKKEI
EVLLEHIFIP	ILEMKTSTLR	QKVILNMIY	RLCQDPQVLV	EIYLNDCDS	EAVDNIYEHL
MNIISKIGTP	SLSTTALAGP	GSAAGLTEQQ	LKRQGLECLV	AVLKSILVVG	TDDPTKFESA
KQKKTLLLEG	IKKFNFKPKG	IQFFLETGFL	PSKSPKDIK	FLLETDLGLK	AMIGEGEREEN
IAIMHAFVDM	MEFKDLAFVD	ALRTFLQAFR	LPGEAQKIDR	FMLKFAERYI	GGNDAAVLA
YSVILLNTDA	HNPQVKRRMT	LADFIKNNRG	INDLPEELLS	TIYDDIVSNE	IRMKDEVANV
GRDLQKEAYM	MQSNSMTNEQ	FFSASHFTHV	RPMFEVAVIP	FLAGISGPLQ	DTDDLEIVEL
CLDGFKAFVT	TLSKFTFLNN	LGEMKTKNME	AIKALLDVAV	TDGNNLKGSW	REVLTCVSQL
EHMQLISSSR	SRKPTEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVDF	VRALCDVSWE
EIQSSGLSQH	PRLFSLQKLV	EIAYYNNMRI	RLEWSNLWDI	LGEHFNQVCC	HNNPHVGGFA
LDALRQLAMR	FLEKEELPHF	KFQKDFLRPF	EYTMIHNSNP	DIRDMVLQCL	QQMIQARVGN
MRSQWRTMFG	VFSAASKVPT	ERVANSAPEL	VTSLNKEHFS	AIVRHGAFAD	LTVCITDFCK
VNKDDPMIKF	WFPVLFGFYD	VIMNGEDLEV	RRLALDSLFS	TLKTYGKTFP	VDFWDTVCQE
LLFPIFAVLK	SSQDMTRFNT	QEDMSVWLST	TMIQALRNLI	DLYTFYFETL	ERFLDGLLDL
LCVENDTLAR	IGTSCLOQLL	ENNVKKLSPA	RWERVATTFV	KLFRRTTTPHQ	LFDENLRLVER
RRIFRQIIVK	CVLQLLLIEM	TNDLLRNDEV	YNTMPPEHLL	RLMGVLDHSY	QFARMFNEDK
DLRTGLWKES	SSASTLVHVL	LRMYDYTRSE	HQAARQVMD	RLMPLGLGLV	GDFNKLRVDT
QLKNIVAWTP	VVAEIMQGFV	RLDDKAFGRY	MPAIYPLATD	LLSRDPEVRD	RLREYFKRVG
YIQGI					
>PP					
DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFVE	LVDVVVHTIT	SCHSENAPET
VSLQIVKALL	ALVLSSTILV	HQSSLLKAVR	TVYNVFLST	DPVNQTVAGG	GLTQMVHHVF
DLFIKDAFLV	FRALCKLTMK	PLNSESERDL	KSHGMRKLL	SLHLVLTILN	SHMALFVSPS
AVIYSSSTHE	ATSFVQAVNQ	YLCLCLSRNA	VSPVLQVFEI	SVEVFWRVIS	GLRTKLKKEV
EVLMEHIFIP	ILEMKTSTLK	QKAIILGMLQ	RLCQDPQVLV	EIYLNDCDS	EAVDNIYEHL
MNIISKIGTP	SLSTTALTGP	GSQPVLSQQ	LRRQGLECLV	AVLKSILVAVG	TDDPSKFESA
KQKKNLLEGG	VKRFNTKPKG	IQFFIETGFI	PSNSSQDIAR	FLHETDLGLN	AMIGEGEREEN
IVIMHAFVDQ	MDFRNLPFVD	ALRTFLQGFR	LPGEAQKIDR	FMLKFAERYI	AGNDAAVILA
YSTILLNTDA	HNPQVKRRMS	LQDFIKNNRG	INDLPEDFLT	SIYQSIVTNE	IRMKDEVANV
GRDLQKEAYV	MQSNNMTNEH	FFSASHFVHV	RPMFEVAVIP	FLAGLSGPLQ	DTDDLDIVEI
CLDGFKAFVT	TLAKFTFLNN	LGEMKTKNMD	AIKTLLDVAV	TEGNNLKGSW	REVLTCVSQL
EHMQLISSSR	VRKPTEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVEF	VRALCDVSWE
EIQSSGLSQH	PRLFSLQKLV	EIAYYNNMRI	RLEWSNIWEI	LGEHFNQVCC	HNNPHVGGFA
LDALRQLAMR	FLEKEELPHF	KFQKDFLRPF	EYTMIHNSNP	DIRDMVLQCL	QQMIQARVGN
MRSQWRTMFG	VFSAASKVPT	ERIVSSAPEL	VTSLNKEHFT	AIVRHGAFAD	LTVCITDFCK
VNKDDPMIKF	WFPVLFGFYD	VIMNGEDLEV	RRLALDSLFT	TLKSYGKTFP	VDFWDTVCQE
LLFPIFAVLK	SSQDLRSFST	QEDMSVWLST	TMIQALRNLI	DLYTFYFETL	ERFLDGLLDL
LCVENDTLAR	IGTSCLOQLL	ESNVKKLSPA	RWERVATTFV	KLFRRTTTPHQ	LFDESLRLVER
RRIFRQIIVK	CVLQLLLIET	TNDLLRNDEV	YNTIPPEHLL	RLMGVLDHSY	QFARMFNEDK
ELRTGLWKES	SSASTLVHVL	LRMYDDLPE	HQAARQVAE	RLLPLGLGLV	GDFNKLRIDT
QLKNIAAWTP	VVAEILQGFV	RFDDKAFARY	LPAIYPLATD	LLSRDPEIRE	GLRDYFMRVG

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DRPREIFEPL	RLACETRNEK	LMIASLDCIS	KLISYSFFVE	LVDVVVHTIT	SCHSETTPEA
VSLQIVKALL	ALVLSPTILV	HQSSLLKAVR	TVYNIFLLST	DPVNQTVAQG	GLTQMVNVHF
DLFIKDAFLV	FRALCKLTMK	SLNTESERDM	KSHAMRSKLL	SLHLVLTILS	SHMPIFVSPS
AIYYSSSSHE	ATSFVQAVNQ	YLCLCLSRNA	VSPVPQVFEI	SVEIFWRVIS	GLRTKLKKEI
EVLLEHIFIP	ILEMKTSTLK	QKAVILNMLQ	RLCQDPQVLV	EIYLNDCDS	EAVDNIYEHL
MNIITKIGTP	SLSTTALVGP	GAPVALSEQQ	LRRQGLECLV	AVLKSLVAWG	TDDPSKFESA
KQKKTTLLEG	IKKFNFKPKG	IQFFIETGFI	SSNSPKDIAK	FLLES DGLSK	AMIGEGDEEN
IAIMHAFVDM	MDFRNLA FVN	ALRTFLQAFR	LPGEAQKIDR	FMLKFAERYI	AGNDTAYVLA
YSIILLNTDA	HNPQVKRRMT	LAD FVKNNRG	INDLPGEFLS	SIYDDIVSNE	IRMKDEVANV
GRDLQKEAYM	MQSNNMTNDQ	FFSASHFVHV	RPMFEVAVIP	FLAGISGPLQ	ETDDLEIVEI
CLDGFKAFVT	TLAKFTFLNN	LGEMKTKNME	AIKALLDVAV	TEGNHLRTSW	REVLTCVSQ L
EHMQLISSNR	VRKPPTEELA	NESRSTHITV	AADMVFSLSH	YLSGTAIVEF	VRALCDVSWE
EIQSSGLSQH	PRLFSLQKLV	EISYYNMSRI	RLEWSNLWEI	LGDHFNQVCC	HNNPHVGFFA
LDALRQLAMR	FLEKEELPHF	KFQKDFLRPF	EYTMIHNSNP	DIRDMVLQCL	QQMVQARVGN
MRS GWR TMFG	VFSAASKVPT	ERIVNSAFEI	VTRLNKEHFS	AIVRHGAFAD	LTV C ITDFCK
VSKDDPMIRF	WFPVLFGFYD	VIMNGEDLEV	RRLALDSLFT	TLKTYGSTFP	VDFWDTVCQE
LLFPIFAVLK	SSQDLSRFST	QEDMSVWLST	TMIQALRNLI	DLYTFYFETL	ERFLDGLLDL
LCVENDTLAR	IGTSC LQQLL	ESNVKKLSSP	RWERVATT FV	RLFRTTTPHQ	LFDESLRVER
RRIFRQIIVK	CVLQ LLLIET	MNDLLRNKEV	YDTIPPEHLL	RLMGVLDHSY	QFARMFNE DK
ELRTGLWKES	SSAATLVHVL	LHMYYPD RPA	HQAAR PQVAE	RLMPLGLGVL	GDFIKLRVDT
QLKNIAAWTP	VVAEIMQGFA	QLDDKAFARY	LPAIYPLATE	LLSREAE LRE	ALRDYYRQVG

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04-CCR4-NOT

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QRQAIILAAQ	AKFGPEAVAP	ILQAI FPTLS	LQVGTS LVTA	LIQLGPEITS	DSQTVRAVLA
RFGLTAAIPP	TDAQVVEIVQ	TLARRVADTH	PLCDVGALIR	ALSSFGVSIN	WANVVRAF DW
PDRGVDTATL	KLVI AVL VHS	PRAEHPAVAG	FWQTWSNPLS	QLRLLDALLS	LPSDTFN FVT
LPGRRVVKVD	DVAGASPTIK	ALAANVQGH T	WNSLDLFETL	VRVGVS DSPE	VRACVHMDLD
KAVKISAE LV	HMGLLQVPPW	NELQVEYSTK	LLNMFLAGHP	NHQLVFMRIW	QIEPTYLT TA
FRDFYTENPL	NITRILDILD	ALLDVRPFIF	ALDEYLNLDK	WLADNITQHG	SAFLRAVIDF
LDVKTTSEKQ	ARVTENPDRT	MALNAQTIAI	FLRVLRNSSS	MLAQADIDYC	LEIRDACLQV
YPR LMDQEPG	FSVVSYSQEI	ESEVDGIYKQ	MYEENISIEQ	VIQMLQRMKE	STTARDHEIF
SCMLHFLFDE	YKFFQYPARE	LNMTANLFGS	LVQHKLIDYI	PLGIAIRYVL	DALQCPSDSN
LFSFGVQALS	RFEGRLREWQ	PLCQALLRIP	HFAEDRPDLA	DAARRAELSD	KILFIINNLA
PSNFDSKLQE	MKERFSTEPN	NHALYLRFLD	GMEKQPLMKL	IVHETIVKSA	NLLNSEKTMN
SPSERTVLKN	LASWLNQPIK	HKNI AFKELL	LEGYDQHRLI	LAVPFVCKIL	EGSAKSKIFQ
PPNPWLMAVI	ALLAEVYHYA	DIKLNLRFEI	EVLWKKLDID	GANIEPTSLI	RNRPRNMTMH
IETILGSLPS	VVVINPQLAL	QATQAFKQAV	TMAVDRSVRE	IILPVVERS V	TIAGISTREM
ITKDFATEGD	EGRLRTSAHA	MARRLAGSLA	LVT CREPLRS	NLTAHIRSFL	LEHGFT EQML
ISLLVNDNID	IACNAIERAA	MDRAAADVDE	SFVQAFDARR	RHREQRP GSN	VTSNLPDLLR
IKPGGLTNQQ	LHVYEEFFTH	LMAEVDNVLG	QSPQSLTMLP	QNHPLKVLGR	QIEGLADNED
TLLNFSQRIV	HALFKVSTQL	GRDFYTAMLE	RLCRTSEKVA	HEALSWLLYS	EDERKFSVPV
IATLMRAGLI	PLVEHDAHLA	KTNNPTIIDF	AVGLIRQLTS	AESTLAKFHN	SIDWFMKWVQ
IFQRSASAEK	SFVTFIQQLT	KEGVLNGDET	FAFFRVSAEA	CIDNYRKQTS	TGNLTNIFQP
IDALSRLIAL	LVKYHGESSQ	DSFKIKLLSK	ILTIIVLVLA	HAHETQGFQQ	KPFFRFFSS F
LNDLHSMEAN	LGSTYFQILL	SLANNFQTLQ	PTYFPGFAFS	WITLISHRLF	MPKLLLS ENR
EGWACFHTLV	ICLFKFLANF	LRPVQLSDAV	RDLYRGAMRL	LVVLLHDFPE	FLSEYYFTIC
DVI PPRCIQL	RNVVLSAYPA	SLVLPDPHLR	NIKMGPI PPI	LSEFTVPLKI	GDLRSFLDQF
LLNRASTASL	PFLKEFLEKY	NLSAINALVM	YVGVS SVAQA	KARSGSSIFV	PSDPGVVLLQ
YLVTNLDAEG	QYHVLSAAIM	HLRYPNAH TH	WFSSLLLFLF	AEINDEGFRE	IMTRALLERF
IVHRPHPWGA	MVT FIELLRN	PRYEFWTHDF	TRVAPEIQLL	LDGV	

>EG

QRQAIIILAAH	AKFGPEAVAP	ILQTIFPSIS	LQPGTSLVQA	LIQLGPEITS	DTVTVRALLA
RFGITPPTPP	TDAQVVEIVQ	TLARRVADTH	PLCDVGALVR	ALSSYGVPIN	WAAVIRAFDW
PDRGVDATL	KLVIAILVHS	PRAEHPAVAG	FWMTWANPLS	QLRLLDALLS	LPSDTFNFVT
LPGRRVVKVD	DVAGASPTIK	ALAANVQGHT	WNSLDLFETM	VRLGVSPE	VRACVHMDLD
KAVKISAEIV	HMGLLQVPPW	NELQVEYATK	LLNMFLAGHP	NHQLVFMRIW	QIDPTYLTTA
FRDFYAENPL	NITRILDILD	ALLDVRPFIF	ALDEYLNLDK	WLADNIAQHG	ATFLRAVIDF
LDVKTTSSEKN	ARVTESPERT	MALNAQTIAI	FLRVLNSSS	MLAQADIDYC	LEIRNACLQV
YPRMLMDQEPG	FSVVSYSQEV	ETEVDISIYK	MYEDDISIDQ	VIVKLQAYKE	STNTREHEIF
SCMLHFLFDE	YKFFQYPHRE	LGMTAYLFGS	LIQHRLIDYI	PLGIAIRYVL	DALQCPPESEN
LFQFGAQALE	RFVGRLEWQ	PLCQALLRIP	HFVDSRPDLA	EAARRAEVSD	RILFIINNLA
PSNFESKLQE	MKERFSSEPN	NHALYLRFLD	GLEKQGLMKL	VIHETIMKSA	MLLNAEKTMS
SPSERSVLKN	LASWLNQPIK	HKNIAPFKELL	LEGYDNGRLI	LAIPFVCKIL	EACAKSKVFQ
PPNPWLMAVI	ALLSELYHFA	DIKLNLRFEI	EVLWKKLDID	GAKIEPTLLV	RNRPRAMNLH
IEELLASLSN	TIVINPQLAL	QATQAFKGAV	TLAVDRSVRE	IILPVVERSV	TIAGISTREL
VTKDFAMEGD	EQRMRIAAQV	TATKLAGSLA	LVTCKEPLRS	NLTTHIRNYL	LEHGFTQML
ISLLVNDNIE	QACKAIEQAA	MDRAKADVDD	SFMQAFETRR	RHREHRPGST	ATSNLPDALR
IRPGGLSQQQ	MHVYEEFFTH	LMVEVDAVLN	QAPQTFSMPL	QNHPLRTYGR	QIESLAKSEE
TLLNFSQRVV	HALFKVQTQL	GRDFYAAMLE	RLCRTSEKVA	QEALLWLLYA	EDERKFSVPV
IATLLRAGLI	PALDQDIQLA	KSFNPTIIDF	TVGLLRQLFP	GDASQKQFQY	SFEWFLKWVQ
IFQRSATTEK	SFVTFIQQLQ	KEGILSGDEQ	FSFFRVCAEA	SVESYRKQAM	TGNLTNIFQP
IDALSRLIAL	LIKYHGDTTQ	DHVVKVYLSK	ILTIIVLVLA	HAHEKQGFQQ	KPFFRFFSSF
LNDLHSMESN	LGTAYFQILI	TLSDNFSTLQ	PTFFPGFAFS	WITLISHRLF	MPKLLLSSEN
EGWSAFHKLIV	ICLFKFLASF	LRPVHLSVAV	RDLYRGAMRL	LVVLLHDFPE	FLGEYYFTIC
DVIPPRCIQL	RNVVLSAYPA	TLVLPDPHLR	NVKMGPIPI	LSDFSTLKT	GDLRNYLDQF
LLNRANSSTL	PFVKECLEKY	NLSAINALVM	YVGVSVAQA	KARSGSSVVF	PSDPGVVILQ
YLVTNLDAEG	QYHVLSAAIM	HLRYPNAHTH	WYSSLLLFLF	AEINDERFRE	IMTRALLERF
IVHRPHPWGA	MVTFIELLRN	PRYDFWNHEF	VRVAPEIQML	LEGV	

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QRHDIIMTVQ	SKYPHDIISP	VVQQVFANLS	VPSGSNVVEI	LCDLGTDITS	DPSYVRAVLQ
RFGFTEAVPP	TDVQVTEMMS	TLSKRTFEST	QLCDARTLLR	VLNSFDVNIN	WPSLIKAFDW
PDRGVDTPTL	KLLIVILLNS	PHVEPHAVAG	FWTIWTNSLY	QLRLLDALLS	LPADTFNFVS
LPGRRIVTVD	DVANASPTIK	ALAANVQGHT	WNSLELFEVL	ITLGSDVPE	IRTCVREMLD
KAVKISAEIV	HMGLLQVSPW	NGTQKEYAAK	LLSMFLAGHP	NHQLVFMRIW	QIDPTYLTTS
FRDYYNESPL	NITRILDILD	TLLDVRPFTF	ALDEYLNLDK	WLLDNINTHG	AEFLHSVIEF
LDFKTASEKT	ARLADPPEKT	MALNPQTITI	FLRILRNNS	MLSDDETSY	FEVRNACLQI
HPRLMDQEPG	FAVVTYSTEV	ENEVDISIYK	MYDESITIDQ	VIQRLKQAKD	STNPRDQEIF
SCMLHFLFDE	YKFFQYPPRE	LAMTGylFGS	LIQHRLVDYI	PLGIAIRYVL	DALQCPPETN
LFKFGIQAALS	RFESRLSEWQ	PLCEKLLQIP	HLLEARPDLA	ESARRAEVSD	KILFLVNNLA
PSNFDAKVRE	MKERFCTEPN	NHHLYIRFLE	ALDRQLLFKF	VLHETFKSA	NLLNSEKTLT
SSSERAILKN	LGSWLNKPIL	HKNLSEFKDLL	LEGYDSNRLI	TAIPFVCKIL	EGCSKSLVFK
PPNPWLMGVI	SLLVELYHFA	ELKLNLFKEI	EFVCKSLDL	LDQVPATTIL	RNRPRGITPQ
IESILVNLSN	MIQISSDLAL	HTNIAFKRAV	QLAVDRVRE	IIVPVVERSV	TIAGISTREL
VSKDFASEPN	EEKLRSAAHL	MARKLAGSLA	LVTCKEPLKT	NLSNHIRHFL	TEHGFAEHPI
ITMIANDNID	LCCAAIEKAA	MDRAVADVNE	NFTPAFDLRR	RHREHFRPN	YMAHLPDLLR
LKQGGVMPLQ	GRVYEDFFNR	MMNDLDRVLT	QLGQSLSSFP	PNHELRFQGR	TVAVLASPDE
LALLFSQKV	SHLYKTPLTI	GREMYVDILD	RLCQEFKVA	KEAVDWLLTS	EDERKYNVPV
TIALIRGSLV	TIWQEDQLS	KDPRPSLLNF	TASFIRECLT	TDATRQELAL	SIEWFHHWSL
LYRESASSEK	AFLSFIPQFT	SEGYLAEDTT	TLFFRICMEA	SVAAYHQRIA	TGDDGRAFDQ
IDAFSRLIVM	LIKYNGDVNA	DTKKLRYLTK	ILSIVVLVLV	HQHEERGFQQ	KPFFRFFSSL
LHDLHSVSS	LHTAYLPLLQ	TICDTFNTLK	PAHFPGFAFS	WMSLISHRL	MPKLLASDAQ
EGWHNLHQVL	LALLHFLAPF	LRAGELPRSI	RDVYQGTLR	FVVLLHDFPD	FLTEYHFSLC
DAIPPRCVQM	RNLITSAPFA	TLTLPDPYLR	NVRMGPIPTT	RFDIAAALKT	YELAPTLEAL
MLKRGPSSFL	QSLKDRLSTY	NLSAMNAVVF	YIGLSSVAQA	KSKSGSPTFV	PSDPGVGIVT

YLATNFDPEG	QYHLLGAILL	HLRYPNAHTH	WFSSMLHLF	IDMKDIRFKE	IMTRILLEHI
AVHRPHPWGV	MVTFIELLRN	PKYEFWNHEF	VRSSPEITLI	MENI	
>SP					
QRQALLSATQ	AKFGVETIAP	VFQQILSHIS	LPSGTTLVQL	MVQLGPDITS	NANVLRGILG
RFGISEHHAP	TDALNVELFS	TLGRLAAEGT	PMGDVGLLVQ	MMGAFAPNLD	WSKVIESFDR
PERGVDMATL	KLLIAILGNS	SHTNKPSISG	FWSTWKNSLY	QLKLLDALLS	LPSDTFNFVN
LPGRRVVMVD	DVSSASPTIK	ALAINVQGHT	WNSLDLFEVL	VRGGSEIIE	VRNCVRDILD
KAKRISAEIV	HMGLLQVPPW	NAIQEYLYQQ	LLEMFLNGHP	NHQLVFMRIW	QIEPPYLTNA
LRDFYEKNPM	NITRILDILE	PLLEVRPFIF	ALDEYLNLDK	WLADNINQHG	AEFLHAVIEF
LELKAQNEKI	TRTSDPSART	MALSPQTIAI	FLRVLNNSS	DMDERDVDYC	IEVRSVCLQI
HPRLMDQDPG	FSVVSYSADI	EAEVDSIYKQ	MYDEQITIDG	VIALQKTKE	STNPRDHEIF
SCMLHFLFDE	YKFFQYPARE	LAMTGYLFGS	LIQHQLVDYI	PLGIAIRYVL	DALQCPPDSN
LFKFGLQALS	RFEARLPEWR	LVCQALMDIP	HAEARPDI	ETVRAEVSD	KILFIINNLA
PSNFDAKVEE	MNERFSIEPN	NHQLYLRFLD	GLKSSALMKL	ILHETFKVSA	ALLNSEKTKA
SSSERSVLKN	LGSWLDKPIK	FKNMSFKDFL	IEGSESDRLI	VAIPFVCKIL	EACSKSKAFK
PPNPWLMGII	SLLAELYHFA	ELKLNLFKEI	EVLCKALGLD	MDDIEVANIL	RSRPRNVGAH
IEGILANLAN	SVIVNSQLAY	MRDPNFKRSV	QLGIDRAVRE	IILPVVERSV	TIASLTREL
VVKDFATESS	EDRVRKAGHL	AGQKLAGSLA	LVTCKEPLKT	TLPGHIRAYL	TENGFSQAQI
VLLLAQENLD	IACEAIEKAA	MDRAIGEIDE	AFVPHLEARR	RHHEQRPQSS	FASGLPDPLR
VKANGPQEAQ	LRVYEEFFSL	CMSKLETILQ	ETSASLAVLP	QTHDIRTIVH	RILTIADRFK
LPLLISQKIV	QYLYKTSTQL	GRELYATLLE	QLCQSYDEVA	KEAITWLIYA	EDDRKFNIPIV
TVTLLRCRLV	SVAEEDQQLA	RSRPPVLQDF	AVGLMRECLT	CDATRQQFTL	TLDCFQQQVA
VFQRSSSPEK	SFVPYITNLT	KQNILKAEDS	SFFFRVCAET	SVGHYSNCLA	SGDFDNAFLA
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LFNRIAPNSL	APLKERLESY	NISVVNAVVM	YIGVSSVAQA	KARTGSPLFV	STDGAVTSL
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IVHRPHPWGA	LMTFIELLRN	PKYEFWARDF	VRMVPEVALL	LESV	
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KAVRISADIV	HMGLLQAPPW	NALQVEYSRQ	LLGMFLSGHP	NHQLVFMRIW	QIEPSYLTSA
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LETQMONEKI	ARTIDPQART	MALSPTTIAI	FLRALRNFSS	VMDEADMDFC	IETRACLQI
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CVKDFASEAS	EEKLRKAGHL	TCQKLASSLA	LITCKEPLRT	NIPGHIRTYL	AEHGFTQQV
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TVTILRSRLI	TVTDEDLQLA	KNIRPNLQDF	ASGLIRECLS	TEATQISFQY	TLDCFQQQVS
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LANRVSQVSL	STLKERLENY	NISLMNTMVM	YIGVTTVAQA	KARSGNP	IFN	PSDPAVV	VLS
YLAYNLDPEG	QHHLVSAMVL	HLRYPNAH	THWFSSLV	LHLF	EQANDET	FRE	ILTRVLLERF
IVHRPHPWGA	LLTFIELLRN	PKYDFWNKDF	VRAPPEVTLM	LDNV			
>TA							
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KAMRISADIV	HMGLLQVPPW	NSLQIEYSRQ	LLGMFLAGHP	NHQLVFMRIW	QIEPTYLT	T	T
LREFYDENPL	NITRILDILD	SLLEVRPFTF	ALDEYLNLDK	WLADNVSAHG	AEFLRAVITF		
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HPRLMDQEPG	FSVVSYPDI	EAEVDGIYKQ	MYDEQITIDQ	VIQLLQRKKD	STNPRDHEIF		
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PSNFDDKLA	E	MKERFSTEPN	NHQLYLRFLD	GLDSKVLARF	ILHETYVKSA	VMLNAEKT	TKT
SSSERAILKN	LASWLDKPIK	HKNLSFKDFL	IEGADNDRLI	IAIPFTCKVL	EWAGKSKAFK		
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VLLLVS	DNLD	IACEAIEKAA	MERAIREVDT	ALAGSFDSRR	RHRDARSGSP	FISNLPD	PLR
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VFQRSSTPEK	SFVPYITQLT	KQGILKAEDS	SFFFRVCAES	SAAHYTACMA	QGDYENQ	FLA	
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LSDLHSIETY	LGNAYFQLLI	ALCDTFSSLQ	PVYFPGFAFS	WMTLISHRLF	MPKLLTSEN	R	
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DIIPPRCVQL	RNVILSAFPT	SITLPDHLR	GLSMGPIPP	LSDFTLILKN	GDLRTYLD	DQC	
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>FM							
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PERGVDTNTL	KLLIAILVNS	PRADKPAVAG	FWSNWKNSLY	QLRLLDALLS	LPSDTFNFVS		
LPGRRVVTV	D	VAAASPTIK	TLAANVQSHT	WNSLDLFEIL	VRGDSSEIEN	VRSYVREMLD	
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HPRLMNQEPG	FNVVSYS	TDI	EAEVDGIFKQ	MYDEQITIDQ	VIIMLQRTKE	STNTRDHEIF	
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STSER	TILKN	LASWLDKPIK	HKNLSFK	EFL	IEGADSDRLV	VAIPFVCKVL	EGAAKSKAFR
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IFQSSSNPEK	MFVQYVTALS	KQGILKVEDS	SFFFRVCAES	SISHYTKSVA	AGDFGHS	FLA	
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LLSRMPQTS	ATLKERMETY	NVPLINAMVM	YIGVSSVAQV	KARSGSSVFI	PTDPGVVALT
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IYHRSPNPEK	SFVGFITQVL	KSGVLNIDES	QLFFRVCAET	SVNHYAKAVA	VGNYASAYS
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FTDFYHDNQL	NITRILDILD	TLLAVRPFTF	ALDEYLNLDK	WLADNIADHG	AEFLRAVIEF
LDAKTASEKE	TRVTEPAART	MALSPQTIAT	FLRVLNNSS	VLA PGD VDYC	LEIRNACLQI
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IKPNGLQLPQ	WRVYEDFFV	MTHELEMLVT	QIPQPLSALP	VAHEVKQLIR	QILFCADRDK
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TVTLLRSLGI	PVAQQDAQLA	REARPSLIDF	TANLIRECLA	GDATAQFQD	SLSWFQQWVM
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FNDLHAIEPH	VGSAYFPLMI	ALSDTFSSLQ	PIYFPGFAFS	WMCLISHRLF	MPKLLSSES
EGWSAFHTLL	VSLFKFLGFF	LNALDLKDAA	RDLYRGAVRI	LLVLLHDFPE	FLAEYYFSIC
EAIPPKCIQL	RNVVLSAFPM	HVVLPDPYLR	NLQIGPIPI	LSDFTSALQP	GELRTYLDHF
LLNRGTTSTF	PSLKERLEKY	NLSLINSIVM	YIGVSSVAQA	KARSGSAVFV	ASDPGVVILQ
YLAMNLNVEG	QHLLSSSMVL	HLRYPNAHTH	WFSSLLLHLF	VEVKDEVFCE	LMTKVLLERF
IGHRPHPWGA	LVTFIELLRN	PKYEFWSREF	TRIAPEITML	LEGV	
>CC					
QRLALIMTFQ	TKYGKEALAP	ILPALFANLS	LSSSATLVQT	FVQLGSEITS	DRDAMHGLLQ
RFDISDANPP	HDAQLVEIVS	ALGRLIAEGT	NVPDASVLIH	TLASYRANLN	WPAAIKTFDR
PDRTVDTPTL	KLLIAILLNA	PRQEPHAVAG	FWEPWSNPLY	QLRLLDALLS	LPGDTFNFVS
LPGKRIVTV	DVSGATPTIR	SLALNVQGYT	WNSLELFQIL	VKLADSESQE	IRNCVREMLD
KAIKISAEIV	QMGLLQVPQW	NEIRLEYSRK	LLAMFLAGHP	NHQLVFMRIW	QIKPNYLTNA
FREFYEENNL	NITRILDILD	ALLEVKPFTF	ALDEYLNLDK	WLADNVANHG	EDFLRSVILF
LQQKMESEKV	SRLSDPAVRT	LTLSPNTITI	ILRVLNNSS	AMTEADVEAS	IEVRNACLQI
HPRLMEVEPG	LTVVNYSNEI	ETEVDISIYKQ	MYDDVITVGQ	VIQMLKQYKE	SSNTHDHEVF
SCMIHFLFDE	YKFFQYPARE	LQMTADLFGS	LIQHKLIDYI	PLGIAIRYII	DALNCPPETN
LFRFGRQALG	RFEFRLVEWR	PLCEALLRIP	ALAETSPELI	QTIQRAEISD	KILFIVNNLA
PSNFEVKLKE	MREQFSTEPN	NHPLYLRFLD	SLDKKPLNKF	ILQETFVKAA	ALLNSEKAMQ
SGSERNTLKN	IGSWLDKPIK	HKNLSFKELL	MEGFD SGRLV	VAIPFVCKTL	EPCAKSRVFK
PPNPWLMAVL	SLLEVELYHFA	DLKLNLFKEI	EVLCKGLEID	LDAIEATTIL	RNRPGVNQLA
IESLLAALSN	NAQINPQLSL	NVNPTFNRAV	RLAIDRAVRE	IIVPVVERSV	TIAGISTTEL
VVKDFASEPN	EQKLRRAGHV	MAQKLAGSLA	LVTCKEPLKT	NLA AHFRQAL	NEHGFTQAV
VQILVQDNLD	IACNTIEKAA	MDRVAVDIDE	SFAQSYEIRR	RHRETRPAST	FTNTLPDLR
IKLSGLQPPQ	LSVYEDFFAS	HTRDLEAVV	QIPQSLAALP	ANHDIRVLVS	RVLMLADRER

SPLMISQKIV	QLLYKTPSQL	GREVYIAILE	QLCQSFEeva	KEAINWLLYA	EDERKYNIPV
TITLLRSGLI	NPTLHDQQLA	KNARPNLVAY	AVGLIREALT	GDL PQSNFQF	SIEWFHQWVA
IFQRTPSPEK	AFVPFITSLT	KQGILKVEDS	SFFFRVCTEA	SVAVYIKCIA	TGEFDYAFQA
LDAFSRLIVY	IIKYHGDANN	EQAKVHYFTK	ILSIFVLVLA	NMHEEQGFQP	KPFFRFFSTL
VNDLHSVEGS	LGPVYFQLLL	ALSDTYSSLQ	PTYFPGFAFS	WMCLISHRLF	MPRLLLSENR
EGWSAFHKLL	LSLFKFLAPF	LKEGDLRQAE	RDLYRGVLRL	LLVILHDFPD	FLSEYYFTLC
DIIPPRCVQL	RNIILSAFPA	AVVLPDPHLR	NVSMGPIPI	LSDFTSALRT	GDLRNHLDQY
LLSRSSVAFI	SQLKDKLESY	NLSLINAIVM	YIGVSSVAQA	KARSGSSLFV	ASDPGAVALQ
YLATNLDNEG	QHLLSSIIIL	HLRYPNAHTh	WFSSLLLHLF	LEVKDDRFRE	IMTKVLLERF
IVHRPHPWGA	LVT FIELLRN	PKYDFWSKPF	VRIAPEVTVL	LESV	
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PERGVDAPTL	KLLIAVLMNS	PRAVPHAVTG	FWSNWSNQIY	QLKLLDALLS	LPNDTFNFVA
LPGRRVVTV	DVAGASPTIK	SLAANVQSHT	WNSLDLFEVL	VR LGVSENTD	VRGIVREMLD
KAVRISADIV	HMGLLQVPPW	NAIQLEYSSQ	LLGMFLAGHP	NHQLVFMRIW	QIEPTYLT TA
LREHYEENPV	NITRILDILD	ALLEVRPFVF	ALDEYLNLDK	WLADNVNAHG	AEFLHAVINF
LELKAQNEKI	ARTSDPSART	MSLSAQTI AI	FLRVL RNSST	LMDEKDVDYC	LEVRNACLQI
YPR LMDQEPG	FSVISYSTEV	EAEVDGIYKQ	MYDEQITIDG	VIAL LQRTKV	STAPHDHEIF
SCMLHFLFEE	YKFFQYPPRE	LAMTGYLFGS	LIQHQLVDYI	PLGIAIRYVL	DALHCPPETN
LFKFGLQALS	RFESRLQEW R	PLCQALIEIP	HLIEARPDLA	DNIRRIGISD	KILFIVNNLA
PNNFDSKLDE	MKEWFGTEPN	NHQLYLRLLD	GMDCTVLVKF	ILHETITKSA	TMLNSEKTKQ
SGIDRTVLKN	LGSWLDKPIK	QRNISFKELL	LEGADSDSLL	LAIPFVCKVL	EAASRSRVFK
PPNPWLIGIM	GLLAELYNHA	DLKLHLKF EI	EVL CGALGIQ	LDQVEVSSIY	RGRPRVVGSH
IENILSTLTA	VVKINPQLAL	HTNQSFKRAV	QLAIDRSVRE	IILPVVERSV	TIATITAREL
GVKDFASEVN	EDRLRKAGQI	ISQQALALS LA	LVTCKEPLKS	NMPTHIRHYL	NEQGFNEQPV
VQMIVQDNLD	VACATIERAA	TDRAVVELDE	ALASACEVRR	RHLRERPD TQ	FIANLPDILR
IKPGGLIARQ	LRVYEDFFNG	IVAQLESVLA	QTPISLSALP	PNHDIRNLLR	RILQIADRSQ
TPLLLSQKL V	QHLYKTTSQ L	GRDVYAAALLE	QLCRAFDEVA	KQAI PWLLFA	DDDRKFNIPV
MITLLRCRLI	NVAEQDQH LA	KDPRHALQNF	SAGLIRECLT	SSASQADYVY	TIPCFQQWVS
VFQRSSTPEK	AFIPYITQLT	KQGILKAEDS	SLFFRVCAES	SVNAYTS AVL	AGEYENAF LA
LDAMSRLIVY	IIKYHGDANN	DQAKTHYFSK	IMSILVLVIA	NFHEELGFQQ	KPFFRFFSTL
LNDLHDMENY	LGNVYLHLLV	TLSDTFSS LQ	PVYFPGFAFS	WTTLISHRLF	MPKLLLLTDNR
EGWAAFHKLV	LALLRFMAPF	LRTADMQVTS	RNLYRGLLRL	LLVLLHDFPE	FLSEYYFTLC
DAIPSRCIQL	RNIVLSAYPP	SCILPDPHLV	HTRMGPIPI	LSDFTLV LKN	GDLRTLLDQC
LLNRVTTSPL	SVLADRLEMY	SLTLVNATVM	YIGVSSVAQA	KARSGSALFA	PGDPGVVAMT
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VVHRPHPWGA	LMT FIELLRN	GKYDFWSGSY	IRAVPEVALL	LDSV	
>PS					
QRQELLRAAR	TKYGDEIIEP	ILQRILPNLS	LAPGTDLVDT	FIDLGPENTG	DVQSMRALLF
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PDRSVDTATL	KLLIAILLNS	PEAEPHAVTG	FWDIWDNALA	QLRLLDALLS	LPGDTFNFVT
LPGRRIVTV	DVSVASPTIK	SLAANVQGHT	WNSLDLFEVL	VR FSEIGTPE	IVSCVHEMLD
KAVKISAE LV	HMGLLQVEDW	SGIRREYGDK	LLHMFLNGHP	NHQLVFMRIW	QIRPTYLTDA
FRDFYNESEV	NITRILDILD	SLLDVQPFTF	ALDEYLNLDK	WLQDNINTHG	KEFLMAILDF
LQAKMESEKA	ARTSEVAVRT	MPLNPQTITI	FLRTL RNSSS	MMEKKDVDYC	LEVRNSCLQV
HPRLMEVEPG	FTVVSYSPEI	EAEVDSIYKQ	MYDESITIDE	VIVMLQR FKN	STNPRENEIF
SCMLHFLFDE	YKFFQYPARE	LAMTGYLFGS	LIQYELVDYI	PLGIAIRCVM	DALKCPPQTN
LFKFGLEALA	RFEGRLAEWR	PLCELLLEIP	NLLQQRPELG	PIIHRAESSD	KMLFIVNNLA
PSNFESKIDE	MREQFSTEPN	NHQLYLRF LD	AIGSKTLFRF	ILHETFVKSA	ALLNSDKTMQ
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PPNPWLMAVI	GLLAELYHFA	ELKLNLKF EI	EVLCKALNIN	LDTVEATSLI	RNRPRAVGSH
IEGILSSLLS	LVTISPQLAL	HTNIAFKRAI	QLGVDRAVRE	IILPVVERSV	TIAGISTREL
VVKDFATDTN	VDRLQKSAHM	MAQKLAGSLA	LVTCKEPLRS	NLATHMRQSL	AEHGFG EIQI

IMLLVQDNLE	FACQAIEQAA	KDRAVDEIDD	ALMPSEYEGRR	RHNQQRPNNI	YPVPLPDPLR
IKASGVQPVQ	LRVYEDFFLI	IVKELDAILE	QLPDSLTLALP	ANHEVRQLVR	QVLFLTEPSH
TALALSQKIV	QCLYRTQSQL	GREIYVALLQ	QLCDMFRDVR	QEALPWLAEA	EDDRKFNVVPV
TVLLFKSGLL	KVSQQDVHLA	KNRPILQTY	VAGLIRECVT	ANASHHQFVT	CVPHFQRWVG
IYQRSPKLDV	HFEYFVRELE	KTRVLSTDDS	LLFFRVCGEA	SISHYVRSVA	TGQFDYAFQA
VDAFARLVMT	LVRFQGDKGF	DQAKVYYLKK	ILSTVTLILA	HLHEEQGFQQ	KPFFRFFSSL
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EGWSSFHELL	LSLFKFLAPF	LKNADLQPAM	KDLYRGTLRL	LLVLLHDFPE	FLSEYYFTLC
DAIPPRCVQM	RNIILSAYPA	GLILPDPNLR	DLKMGPIPAV	LSDFAAGLRD	PELRSQLDQY
LVNRGTPLFL	PSLKSRLLEGY	DLSFINSIVM	YIGMSSVAQA	KVRSGATLFV	PTDPGVVALQ
YLATNLDMEG	QYHLLSSMVL	HLRYPNAHTQ	WFSSSLVLHLF	LEIQEGRFGE	VVTRVLLERF
VVHRPHPWGA	MVTFIELMRN	PKYEFASKEF	VRIASEVTLL	LESV	

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QRQALLAAIQ	AKYGFEALGS	RVHQIILTMMS	LSSGTSVLVQT	LIELGPDITS	DSDIVRALLN
RFGITDQKPP	RDAQIVEIFS	NLGRLLAAEGA	TLCDVGALVR	ALNSFNVQLN	WAKVIESFDW
SDRGVDTATL	KLLIAVLHNA	PRAEPHAVAG	FWTKWSNSLY	QLRVLDALLS	LPSDTFNFVS
LPGRRVVTV	EVASASPTIK	SLAANVQGH	WNSLDLFEVL	SRLGDAESPE	VRGCIHMDLD
KAVKISADLV	HMGLLQVPPW	NAIHMEYTQK	LLSMFLGGHP	NHQLVFMRIW	QIEPSYLTTA
LREFYEENPM	NITRILDILE	SLLEVRPFIF	ALDEYLNLDK	WLADNVNQHG	AEFLHAVIAF
LELKAQNEKT	SWLSDPSTRT	MALNPQTIAI	FLRVLRNSSS	VMDEADVDYC	LEVRNACLQI
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SCMLHFLFDE	YKFFQYRARE	LHMTGYLFGS	LIQYQLVDYI	PLGIAIRFVL	DALQCPPDTN
LFKFGVQALS	RFESRLPEWK	PLCQALAEIP	HLEARPDAVA	EAVERAESVD	KILFLVNNLA
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SASERALLKN	LASWLDKPIK	HKNVSFKDLL	IEGADSNRLI	VAIPFVCKVL	ESCAKSKAFK
PPNPWLMAVI	SLLAELYTFA	DLKLNLFKEI	EVLCKALDLD	LDKIEPTSIL	RTRPRAVGAH
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ILLIVQDNID	VACAAIEKAA	MDRAVADVDD	GFGQAYETRR	RHREQRPGAP	FIATLPEPLR
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TPLAMSQKIV	QLLYKTSSQL	GRELYVALLE	QLCQSFEDEA	KEAITWLIYA	EDERKFNIQV
TVTLLRSRLI	NVAQQDQQLA	KDPRTTLQDF	TAGLIRECLT	SDAAQSQFSF	AIECFQQQWN
VFQRSSVPEK	SFVPYITQLT	KQGILKAEDS	SFFFRVCTES	SIDQYMKAVA	TGDYEHAFQA
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DIIPPRCIQL	RNIILSAFPP	SITLPDPHLR	NIKMGPIPII	LSDFTFILKT	GDLRGYLDQF
LLNRGTQASL	SALKDRLEVY	NLSVINAIVM	YIGVSSVAQA	KARSGSSVFFV	ASDPGVVALT
YLAVNLDPEG	QHLLSSSIVL	HLRYPNAHTH	WFSSLLLYLF	SEVKDERFKE	IMTKVLLERF
IVHRPHPWGA	LVTFIELLRN	PKYEFWSRDF	IRVAPEVTLL	LESV	

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QRQALLAAMQ	SKYGFEALGS	RVHQIILTMMS	LSSGTSVLVQT	LIELGPDITS	DSDIVRALLN
RFGITDQKPP	RDAQIVEIFS	NLGRLLAAEGA	TLCDVGALVR	ALNSFNVQLN	WAKVIESFDW
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LPGRRVVTV	EVASASPTIK	SLAANVQSH	WNSLDLFEVL	SRLGDAESPE	VRGCIHMDLD
KAVKISADLV	HMGLLQVPPW	NAIHMEYTQK	LLSMFLGGHP	NHQLVFMRIW	QIEPSYLTTA
LREFYEESPM	NITRILDILE	SLLEVRPFIF	ALDEYLNLDK	WLADNVNQHG	AEFLHAVIAF
LELKAQNEKT	SWLSDPSTRT	MALNPQTIAI	FLRVLRNSSS	VMDDADVDYC	LEVRNACLQI
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LFKFGVQALS	RFESRLPEWK	PLCQALAEIP	HLEARPDAVA	EAVERAESVD	KILFLVNNLA
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SASERALLKN	LASWLDKPIK	HKNVSFKDLL	IEGADSNRLI	VAIPFVCKVL	ESCAKSKAFK
PPNPWLMAVI	SLLAELYTFA	DLKLNLFKEI	EVLCKALDLD	LDKIEPTSIL	RTRPRAVGAH

IESILMNLAN	LVVINPQLAY	HTNQSFKRAV	QSAVDRSVRE	IIMPVVERSV	TIAGISTREL
VAKDFCTEQN	EEKMRKAGHL	MAQKLAGSLA	LVTCKEPLRS	NMASHVRHYL	SDHGFNEQQV
ILLIVQDNID	VACAAIEKAA	MDRAVADVDD	GFGQAYETRR	RHREQRPGAP	FIATLPEPLR
IKASGLQMQQ	TRVYEDFFNL	LVSELEGMLP	HVPNSLTVLP	TGHEVRGLVR	RILFLADRNR
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>GT					
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LPGRRIVTVD	DVANASPTIK	SLAANVQGQT	WNSLDLFEVL	VTHAGSESLE	VHNYVREMLD
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FRDFYEEESP	NITRILDILD	SLLEVRPFTF	ALDEYLNLDK	WLADNVSAHG	AEFLHSVIQF
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PSNFDSKVTE	MKEYFSTEPN	NHPLYLRFLD	MLDGPILPKF	ILHETYIKSA	ALLNSEKTAQ
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IESLLSQLSQ	RVMISPQLPF	AHNHVFKRAV	QLAVDRAVRE	IIMPVVERSV	TIAGISTREL
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VMLLVQDNLD	EACHAIEQAA	MDRAVADVDE	GFATAYELRR	RHREQRTGSS	FVASLPDPLR
IRAAGVQANQ	MLVYEDFFAL	LNQELEAFIP	QMPQSLAALP	PNHDLRQIIR	QIVLVTEAER
TALLVSQKIV	QYLYRTQWQL	AREIYVALLD	QLCQNFADVA	KEAITWLIYA	KDDRKFNVPA
TLTLLRSLGV	QVQTQDEQLA	KDPKIQQLNF	AARLIRECLS	IDGSQTQWSF	TIDWFQQWVS
IYQRSPSPEK	AFVPFITQLT	KQGILKVEDS	SFFFRVCAES	SVQMYMKCVA	TGDFTHAFQA
LDAMARLIVY	IIKYHGDANN	DQAKVHYLTK	ILSIFVLVLA	NMHHEEQGFQQ	KPFFRFFSSL
INDLHTIEAQ	LGTAYFQLLI	AISDTFSSLQ	PTYFPGFAFS	WMSLISHRLF	MPKLMLHENR
EGWAAFHKLL	LSLFKFLSPF	LKTADFRLPS	RDFYRGTLRL	LLVLLHDFPE	FLSEYYFSLC
DVIPPRCIQL	RNIILSAFPP	SLVLPDPHLH	DVKMRTIPPI	LSDFTASLKN	GDLRDILDQH
LLGRGTPSTL	PSLKERLEAY	NLSLINSVVM	YIGVSSVAQS	KAKNGSSLFL	PSDPGVVLLQ
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>LB					
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PDRGVDTATL	KLLIAILLNS	PRVEPHAVTG	FWEAWSNSLY	QLRLLDALLS	LPADTFNFVQ
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LFKFGIQALG	RFEFRLTEWR	PLCEALLQIP	HLEAVRPDLM	ATIQRGELSD	RILFIVNNLA
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SGSDRNTLKN	VGAWLDQPIK	FKNLSFKELL	IEGYESSRLI	VAIPFVCKTL	EPCVKSKVFK
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VLLLVSNDLD	FACTAIEKAA	MDRAVSDVDE	GFATSYESRR	RHREQRNGSN	FSSTLPDPLR
IKSTGLQQHQ	FRLYEDFFGV	LTRDLEAVMV	QIPQSLAALP	PNHDIRHLVQ	QVVILADRER
TPLMMSQKIV	QLLYKTPSQL	GREVYVALLD	QLCRTFEDVA	KEAITWLLYA	EDERKYNVPV
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IFQRSHSPEK	NFVPFITQLT	KQGILKVEDS	SFFFRVCAES	SVNSYIKSIS	VGDDYDYAFQA
LDAVSRLIVY	IIKYHGDANN	DQAKVHYMTK	ILSIFVLVLA	NLHEEQGFQQ	KPFFRFFSSL
VNDLQSVESH	LGPAYFQLLI	AISDTYSSLQ	PTYFPGFAFS	WMCLISHRLF	MPKLLLSENR
EGWSAFHKLL	LSLFKFLSPF	LKDADLQPAA	RDLYRGALRL	LLVLLHDFPE	FLSEYYFTLC
DAIPPRCIQL	RNIILSAFPP	AVILPDPHLR	NVNMGPIPI	LSDFTSGLKS	GDLRGYLDQY
LLNRGTPSFL	HSLKDRLESY	NLSLINSIVM	YIGVSSVAQA	KARSGSSIFI	ASDPGAVALQ
YLTNTLDVEG	QHHLMSIVL	HLRYPNAHTH	WFSSLLLHLF	VEVKDDRLRE	VMTKVLLERF
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>CP					
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RFNITESSPP	REAQVTEIVT	SLARFVTEGV	PLCDVGALIR	ALSSLQPTMN	WVNVIKSFDR
PDRGVDATL	KLIISVLMNS	PLVTPHAVSG	FWEPWSNSLY	QLKLLDALLS	LPGDTFNFVS
LPGRRVVTV	DVASAGPTIK	ALASNVQVHT	WNSLELFEVL	VSLADSESAD	TRAFIREMLD
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FRDFYNENPL	NITRILDILE	NLLEAQPTF	ALDEYLNLDK	WLADHVAEHG	ASFLHAMVSF
LEIKMESEKT	ARLSDPAVRT	IPLSPQSVTV	FLRTLRSNTS	VMSREDIDYC	LEVRSAQLQV
YPRIMEVEPG	FTVVNYSPI	EAEVDAIYKQ	MYDEQTTIDE	VIAMLVCKG	SSDQRDSEIF
SCMLHFLFDE	YRFFQYPARE	LAMTGylFGS	IIQHQLVDYV	PLGVAIRYV	DALSCPADTN
LKFQGLQALG	RFESRLPEWQ	PLCQALLRIP	TLMEARPDL	SVIHRAELSD	KILFIVNNLS
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QTSERHILKN	IGAWLDRPIK	HKNLSFKDLL	IEGYDNGRLM	VAIPFVCKTL	EPCAKSKVFK
PPNPWLMAMV	SLLAELYHFA	DLKLNLFKEI	EVLCKGLDID	LDTVEATTML	RTRPLDVGGH
IESILQGLSQ	RVVINPQLAL	HINQAFKRAV	QLAVDRSVRE	IIIPVVERSV	TIAGISTREL
ATKDFATEPS	EDKLRKAGHL	MAQKLAGSLA	LVTCKEPLKS	NLATHLRSFL	VDHGFNEQQV
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DSIPSRCIQL	RNIILSAFPS	TITLPDPHLL	NYKMGPPIPI	LSDFTSNLKN	GDLRTHLDQY
LLNRGSPTFL	PSLKDCLDY	NLPLINSIVM	YGVSSVAQA	KARSGSSIFV	SGDPGVVALH
YLATNLDVEG	QHLLSSMVM	HLRYPNAHTH	WFSSLLLYLF	VEVQDDHFRE	VMTRVLLERF
IVHRPHPWGA	LVTFIELLRN	QKYEFWSKEF	TRVAPEVHML	LDSV	
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RFGISDATPP	RDSQVIELIT	SLARLAAEGT	TLCDVGALVR	ALSSFPVNLN	WANVIKAFDW
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LPGRRIVTV	DMANASPTIK	SLAANVQGHT	WNSVELFEVL	VRQSCSESID	IKNCVQEMLD
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YPRLMDAEPG	LTVVNYSPEI	EAEVDAIYKQ	MYDEQTTIDE	VVSLLRQSKA	STDSRDHEIF
SCMLHFLFDE	YKFFQYPPRE	LAMTGylFGS	LIQHQLVDYL	PLGIAIRYV	DALNCPPETN

LFKFGLQALS	RFESRLSEWQ	PLCQALLRIP	HLMEARPDLT	AVIHRAELSD	KILFIVNNLA
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VAKDFATEAS	EEKLRKAAHL	MAQKLAGSLA	LVTCKEPLKS	NLGTHIRSFL	AEHGFNEQHV
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IEVILSDLIQ	HVTVNAQLAF	STNHTFKRAV	QLAVDRSVRE	IILPVVERS	TIAGISTREL
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DVIPSHCIQL	RNIILSAFPP	TLVLPDPHLR	NVKMGPI PPI	LSDFTSGLKT	GELRNYLDQY
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PDRGVETSTL	KLLIAILLSC	PLSEHHA VSG	FWQMWKNSLY	QLRLLDALLS	LPSDTFNFVT
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IENILASVLP	LVVINPALAL	HTNQTFKRAM	QMAVERSIRE	IIMPVVERS V	TIAGISTREL
VLKDYVTEQS	EEKLRHAGRL	MSQKLAGSLA	QVTCKEPLRS	NLASHLRLVL	TEFGFAEEVEV
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LNDLHAIEAS	LGAVYFP LLL	AVSDTFSSLQ	PTFFPGFAFS	WMSLISHRLF	MPKLLLS ESR
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LFKFGLQALS	RFEGRLHQWR	PLCNALLDIP	ALLEVRPELG	IIIRRAEVSD	KILFIVNNLA
PSNFDSKLTE	MREHFSTEPN	NHQLYLNFLD	ALDVQALFRF	VLHETYIKSA	ALLNSEKTMQ
STSERTVLKN	VASWLDLRPIR	HKNLSLKDLL	IEGYDNGRLI	VAVPFVCKTL	EPCAKSKVFK
PPNPWLMAVI	SLLAELYRYA	EMKSLLKFEI	ELLCKALDIN	LDAIQPTTIL	RNRPRVLGTH
IENILQSLLP	HVIIHPQLAL	HTNQTFKRAV	QMAIDRSVRE	IIVPVVERSV	TIAGISTREL
VAKDFAMEPS	EEKMRKAGHL	MAQKLAGSLA	LVTCDPLKT	NLVGHIRTFL	NECGFNEQPV
VQLLVQDNLE	LACQVIEKAA	MDRAIVDVDD	GFAAAYEVRR	RHRETHPGHP	LATQFPEPLR
IKPAGIQQIQ	AVVYEDFFNA	MVKDLEALLL	QLPQSLAALP	PTHEIRLLVR	QILYLADHQR
TPLLMSQKIV	QLLYKTSSPL	GREIYVALLD	QLCHIFEDVA	KEAITWLIYA	EDERKFNVPV
TVTLLRSRLI	SIEQEDQQLA	KNPRPTLLTF	AAELIRECLS	IDATQSQFAY	TLEWFQQWVS
IFRGSHTEPK	SFIPFITQLT	KQGILKVEDS	SFFFRVCAES	SVNSYIKCVN	AGEYGLAFQA
LDAMSRLIVY	IIKYHGDANN	DQAKVHYLTK	ILSIFVLVLA	NMHEEQGFQQ	KPFFRFFCSL
LHDLHANASS	LETAYFPLLL	ALSDTFSSLQ	PTYFPGFAFS	WMSLISHRLF	MPKLLLSNLR
ERWSAFYKLL	ISLFKFLSPF	LKAADLQQAS	RDLYRGSRLI	LLVLLHDFPE	FLSEYYFSLC
DVIPARCIQL	RNVILSAFPP	GVMLPDPHLR	SIDTGPIPAI	LSDITSGFKP	GDLQGYLDQY
LLNRGSPSVL	SSLKDRLESY	NLSLINSIVM	YIGVSSVAQA	KTRSGSALFV	STDPGVVALQ
YLATNVDAEG	QHLLLSAMLL	HLRYPNAHTH	WFSSVMLHLF	LEIKSEQFRE	VMTKVLLERF
LVHRPHPWGA	LVTFIELLRN	PKYDFWSQEC	IRSVPEVTIL	FEQV	
>DS					
QRQALILAAQ	AKYGSEIVSP	ILQHIMPNLS	LPPGTSVLQA	LVQLGPDITS	DADVVRSLMA
RFGISEVNPP	TDAQVVDLVT	SLARLASEGT	SLPDVGAVVR	ALSSFNSSLN	WAAAIQAFDI
PDRGVDATL	KLLIAILMNT	PREQHHAVTG	FWSLWSNTQY	QLRLLDALLS	LPADTFNFVN
LPGRKIVTVE	DVAGASPTIK	SLAANVQGHT	WNSLDLFEVL	VQAADFNSTE	ITNLVREMLD
KAVKISAEIV	HMGLLQVPSW	NDIRLEYTQR	LLAMFLAGHP	NHQLVFMRIW	QIEPAYLTNA
FRDFYDESNL	NITRILDILD	ALLEVRPFFK	ALDEYLNLDK	WLADNVTHG	ADFLHAVIAF
LELKMDSEKT	VRVSDPPVRT	MQLSPQTIAI	FLRVLNRSSS	IMHENDVDYC	LEVRNACLQI
HPRLMDIEPG	FSVVTYSTEI	ETEVDGIYKQ	MYDEQITIDD	VIKLLQRNKA	SSNPRDHEIF
SCMLHFLFDE	YKFFQYPHRE	LAMTGYLEFGS	LIQYQLVDFI	PLGIAIRYVL	DALNCPPETN
LFKFGIQUALS	RFESRLSEWQ	PLCQALLKIP	HLLEARPDLA	VSIQRAEVSD	KILFIVNNLA
PSNFESKLAE	MKGHFSIEPN	NHQLYLRFLD	ALDVQSLFRF	VLHETLVKSA	VLLNSEKTQQ
LSSERAVLKN	VGSWLDRLPIK	HKNLSFKDLL	IEGYDNNRLV	VAIPFVCKTL	EPAARSKVFR
PPNPWLMAVI	SLLTELYHFA	ELKLNLFKFEI	EMLCKALDID	LDVVQATTIL	RNRPRVLGAH
IENILSSILP	HVTINPQLAL	NTNPSFKRAI	QMAIDRAVRE	IILPVVERSV	TIAGISTREL
VAKDFVTEPN	EDKLRKAGHL	MAQKLAGSLA	LVTCKEPLKG	NLGSHIRQFL	SEFGFTDQQV
IFLLVQENIE	LACQAIEKAA	MDRAVIDVDD	GFAAAYELRR	RHRESRPGSN	VFGSLPDPLR
IKPTGVQQIQ	AAVYEDFFNA	LVRDLEAVLI	QLPASLAALP	PNHEVRHLVR	QILFIADRSR
TPLLMSQKIV	QLLYKTPSQL	GREIYVALLD	QLCHSFEEVA	REAITWLIYA	EDERKFNVPV
TVTLLRSGLV	TISQEDQQLA	KDPRPSLQNF	AAGLIRECLA	ADATQAQFSY	SLEWFQQWIS
IYQRSHSPEK	SFVPYITQLT	RQGILKAEDS	SFFFRVCAES	SVNSYIKHVN	AGEFGFAFQA
LDAMSRLIVY	IIKYHGDANN	DQAKVHYLTK	ILSIFVLVLA	NMHEEQGFQQ	KPFFRFFSSL
LNDLHVSVESS	LGSAYFQLLI	AISDTFSSLQ	PTYFPGFAFS	WMSLISHRLF	MPKLLLSNLR
EGWSAFYKLL	LSLFKFLAPF	LKTADLQPAG	RDLYRGTLRL	LLVLLHDFPE	FLSEYYFSLC
DVIPPRCIQF	RNIVLSAYPP	NVVLDPDLR	DIDMGPIPI	LSDFAASLRA	GDLRMYLDQF
LLNRGPQTF	SSLKDRLETY	NLPLINSIVM	YIGVSSVAQA	RARSGGPLFV	PTDPGVVALH
YLATNLDVEG	QHLLLSAMVL	HLRYPNAHTH	WFSSMLLYLF	HDIQVDQFRE	IVTRVLLERF
LVHRPHPWGA	LVTFIELLRN	PKYNFWNQEF	IHIAPEVTLL	LENV	
>TV					
QRQALILAAQ	AKYGSEIVSP	ILQRILPNLS	LPNGTSLVQA	LVQLGPEATA	DPDVVRALFV

RFGLTENNP	TDAQLEVEIT	SLARLASEGT	HLPDVGSVVR	ALNSLNGELN	WAAAIKAFDM
PDRGVDTATL	KLLIAILMNA	PRDNQHAVTG	FWQLWSNTLY	QLRLLDALLS	LPADTFNFVN
LPGRKIVTVD	DVAGASPTIK	SLAANVQGHT	WNSLDLFEVL	VQAADLNNPD	VENTVREMLD
KAVKISAEIV	HMGLLQVPPW	NDIRLDYTQR	LLAMFLAGHP	NHQLVFMRIW	QIEPVYLTNA
FRDFYEEESPL	NITRILDILD	SLLEVRPFTF	ALDEYLNLDK	WLADNVSAHG	ADFLHAVIAF
LDLKMESEKA	QRVSDPPVRT	MQLSPTITIT	FLRVLNRSSA	IMHESDIDYC	LEVRNACLQI
HPRLMDTEPG	FAVVSYSAEI	ETEVDGIYKQ	MYDEQITIDD	VIKLLQRNKT	SSSPRDHEIF
SCMLHFLFDE	YKFFQYPPRE	LAMTGYLFGS	LIQFQLVDFI	PLGIAIRYVL	DALGCPPETN
LFKFGLQALS	RFESRLAEWQ	PLCQALLKIP	HLLEARPELA	VIIQRAEVSD	KILFIVNNLA
PSNFDAKLLE	MKGQFSTEPN	NHQLYLRFLE	ALNLQPLSHF	ILHETLVKSA	ILLNSEKTMQ
LGSERAILKN	VASWLDRIPIK	HKQLSFKDLL	IEGYDNGRLI	VAIPFVCKTL	EPAARSKVFR
PPNPWLMAVV	SLLTELYHFA	ELKLNLFKEI	EMLCKALDVD	LDIMQATTIL	RNRPRVLGAH
IENILSSVLP	QVTFSPQLAL	NTNPSFKRAV	HMAIDRAVRE	IILPVVERSV	TIAGISTREL
VAKDFVTESS	EDKMRRAGHL	MAQKLAGSLA	LVTCKEPLKG	NLGSHMRHFL	TEFGFTEQQV
IFLLVQDNIE	LACSAIEKAA	MDRAVIDVDE	GFAAAYELRR	RHREQRPGSP	IVTSLPDLPLR
IKASGVQPSQ	MRVYEEFFNA	LVRDLEAVLL	QLPTSLAALP	PNHEVRHLVR	QILFLADRTR
TPLLMSQKIV	QLLYKTPSQL	GREIYVALLD	QLCHSFEDVA	KEAITWLVA	EDERKFNVVP
TVTLLRSLGLV	TIVQEDQQLA	KDPRPSLQTF	AAGLIREYLA	ADSTQGQFSY	SMEWFQQWVS
IYQRSHSPEK	SFVPYITQLT	RQGILKAEDS	SFFFRVCAES	SVNSYIKHVN	AGEFGFAFQA
LDAMSRLIVY	IIKYHGDANN	DQAKVHYLTK	ILSIFVLVLA	NMHEEQGFQQ	KPFFRFFSSL
LNDLHSIESS	LGTAYFQLLL	AIGDTFSSLQ	PTYFPGFAFS	WMSLISHRLF	MPKLLLSDBG
EGWSAFYKLL	LSLFKFLGPF	LKSADLQAAG	RDLYRGTLRL	LLVLLHDFPE	FLAEYYFSLC
DVIPPRCIQL	RNIILSAYPP	NIILPDPHLP	DIDMGPIPI	LSDFAAGLRA	GDLRLYLDQF
LLNRNSQTFL	SSLKDRLEPY	NLSLINSIVM	YIGVSSVAQA	RARSAGPLFV	PTDPGAMALH
YLATNLDVEG	QYHLLNAMVL	HLRYPNAHTH	WFTLLMLHLF	HEIEADSFRE	VMTRVLLERF
LVHRPHPWGA	LVTFIELLRN	PKYQFRQQDF	VNVAPEVTLL	LENV	

>FP

ERQALITAAM	AKYGPDTVVP	MLRRIFPELS	LPAGTTFVQA	LVQLGPEITA	EPAAVHALLT
RFNFTASNPP	QNAQVVEWVQ	SLARLASEGT	VLPDVGSLVK	ALDSFAVIFD	WAGVIKAFDM
PDRGVDTATL	KLLIAILQNT	PRAKPHAVTG	FWQTNLNPY	QLRLLDALLS	LPADTFNFVT
LPGARIVTVD	DVANASPTIK	SLAANVQGHT	WNSLDLFEVL	VRLSDCDSPD	VRNFVREMLD
KAVKISAEIV	HMGLLQAPNW	GEIRVDYTQR	LLALFLAGHP	NHQLVFMRMW	QIEPSYLTNA
FRDFYEEESPL	NITRILDILD	ALLEVRPFTF	ALDEYLNLDK	WLADNVTAHG	ADFLHAVIAF
LDIKMESEKA	TRISDPAVRT	MPLNPQTITI	FLRVLNRSSS	IMRESVDVYC	LDIRNACLQI
HPRLMDAEPG	ISVVSYSAEI	EAQVDGIYKQ	MYDEQISIDD	VITLLQRHKE	STNPRDHEIF
SCMLHFLFDE	YKFFQYPPRE	LAMTGYLFGS	LIQYQLVDYI	PLGIAIRYVV	DALNCAPETN
LFKFGIQAALT	RFESRLAEWQ	PLCQALLKIP	HLLEARPDLA	AAIHRAEVSD	KILFIVNNLA
PSNFESKLSE	MREHFSTEPN	NHQLYLRLLD	ALDMPLLLRF	VLNETFVKSA	SILNSEKTLN
SSSERTILKN	IGSWLDRIPIK	HKNLSFKDLL	IEGYEHGRLT	VAIPFVCKTL	EPCANSKVFR
PPNPWLMAVI	SLLAELYHFA	ELKSILKFEI	ELLCKALDID	LDGVQATTIL	RNRPRALGAH
IENILSSLLP	LVQISPQYQL	HTNQTFKRAV	QMAVDRAVRE	IIMPVVERSV	TIAGISTREL
VSKDFATEPN	EERMRAKAGHL	MAQKLAGSLA	LVTCKEPLKT	NMTAHLRNFS	NEFGFNESSS
VNGIVADNLE	LACQAIERAA	MDRAVIDVDD	GFAAAYEARR	RHREQRPGSA	LASTLPEPLR
IKPTGVQPNQ	AGVYEDFFSL	VVKDLEAILL	QIPPSLSSLP	PNHEIRGLVR	QILNLAERQR
TPLLMSQKIV	QYLYKTPTQL	GREIYAALLE	NLCTSFEEDA	KEAITWLIYA	DDERKYNVPV
MATLLRTGLV	PILQQDQQLA	KDPRPNLLNF	AAELIRECLS	TDASQSQFVY	TLEWFQQWVS
IFQRSHSPEK	AFVPFITQLT	KQNILKAEDS	SFFFRVCAES	SVNSYIKCIQ	AGEFTYAFQA
LDAMSRLIVY	IIKYHGDANN	DQAKVHYLTK	ILSIFVLVLA	DMHEEQGFQ	KPFFRFFCSL
LNDLHSIEGS	LGTAYFQLLV	AISDTFSSLQ	PTYFPGFSFS	WMSLISHRLF	MPKLLLSEN
AGWSAFYKLL	VSLFKFLSPF	LKAADLQPAS	RDLYRGSLRL	LLVLLHDFPD	FLSEYYFSLC
DVIPPRCIQL	RNIILSAFPP	TIMLPDPHLP	SFEMGPIPI	LSDFASVLKA	GDLRLYLDQY
LLNRGVQSFL	PSLKDRLETY	NLSLINALVM	YIGVSSVAQA	KARSGSSLFV	ASDPGVVALQ
YLATELDAEG	QHLLLGAMVL	HLRYPNAHTH	WFSSLMLHLF	VEVKSQNFRE	ILTKVLLERF
LVHRPHPWGA	LVTFIELLRN	SKYDFWNQEF	IRVAPEVTLL	LENV	

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QRQALIAAAQ	NKYGSEIVAP	IVQRLVPSLS	LLPDATIGQS	LADLGLDMSN	DPEVVLAMLA
RFGVSATSPP	TNEQVVDVVQ	GLALMAAEGR	MLPDVGTILR	VLASFDSNIQ	WASIIKAFDM
PDRGVDTATL	KLLIAILVNA	PRDEDHAVTG	FWQLWNNPLY	QLRLLDALLS	LPADTFNFVS
LPGHRIVTVD	DVANASPTIK	SLAANVQGHT	WNSLDLFEVL	VRLSESDSID	VRNFVREMLD
KAVKISAEIV	HMGLLEVPPW	SEIRLDYTQR	LLSMFLAGHP	NHQLVFMRIW	QIEPSYLTNA
FRGFYEESPL	NITRILDILD	ALLEVRPFTF	ALDEYLNLDK	WLADNVTAHG	ADFLHSVIAF
LDLKMESEKA	TRISDPVVRT	MPLNPQTITI	FLRVLNSSS	MMHESDVDYC	LEVRNACLQI
HPRLMDVEPG	FTVVSYSAEI	EAEVDGIYKQ	MYDEHISIED	VIALLRHKT	STNPKDHEVF
SCMLHFLFDE	YKFFQYPPRE	LAMTGFLFGS	LIQHQLVDYI	PLGIAIRYVL	DALNCAPETN
LFKFGIQALS	RFESRLSEWQ	PLCQALLKIP	HLLEARHDLA	ASIQRAEVD	KILFIVNNLA
PSNFEAKLAD	MREQFSTEPN	NHQLYLRFLD	ALDVQPLNRY	VLHETLVKAA	ALLNADKTMQ
LTSERVILKN	MASWLD RPVK	HKNLSFKDLL	LEGYENGRL	VAVPFVCKTL	EPCAQSKVFR
PPNPWLMAVI	SLLAEMYHFA	DMKSILKFEV	ELLCKALDID	LDAVQLTATL	RNRPRVLGAH
IENILSSILP	RVTINPQLSL	HTNQTFKRAV	QMAVDRAVRE	IIVPVVERSV	TIAGISTREL
VAKDFATEPN	EEKMRQAGHL	MAQKLAGSLA	LVTCKDPLKS	NLGGHIRALL	VDCGFSEVGG
IMVLANDNLD	LACQAIEKAA	MDRAVIDVDE	GFAAAYETRR	RHREQRPPTA	ITSTFPDPLR
IKASGVQPIQ	AAVYEDFFNI	MVKDLEALLL	QLPQSLAALP	PNHDVRQLVR	QVLFLADRHR
TPLLMSQKIV	QLLYKTPSQL	GREIYVALLD	QLCHSFEDVA	KEAITWLIYA	EDDRKLNVPV
TVTLLRSLGI	NVVQEDQQLA	KDPRPSLLNF	AAELIRECLT	ADASQNQFTH	TLAWFQQWVT
IFQRSHSPEK	AFVPFITQLT	KQGILKVEDS	SFFFRVCAEA	SVESYITCIN	AGEYGYAFQA
LDAMSRLIVY	IIKYHGDANN	DQAKVHYLTK	ILSIFVLVLA	NLHEEQGFQQ	KPFFRFFCSL
LNDLHTIEAN	LGTAYFQLLL	AIGDTFSSLQ	PTYFPGFAFS	WMSLISHRLF	MPKLLLSSEN
EGWSAFYKLL	VSLFKFLSPF	LKAADLEPAS	RDLYRGSRL	LLVLLHDFPD	FLSEYYFTLC
DVIPPQCIQL	RNIILSAFPP	TTLLPDPHLR	NVDMGPIPI	LSDFTSGLKA	GDLRAYLDQY
LLNRGSPSFL	PSLKERLEAY	NLPLVNSLVM	YVGVSVAQA	KARSGSSLFT	PTDPGVIVLQ
YLATNLDMEG	QHLLGSMVL	HLRYPNAHTH	WFSSMLLYLF	QEVKNDQFRE	VMTKVLLERF
LVHRPHPWGA	LVTFIELLRN	PKYDFWSQEF	IRVAPEVTLL	LETV	

05-DNA-directed polymerase

>RM

GQRKLYLQIC	FRNVSDLLAV	RKELVPLALE	NGAKLSAVDA	YAEVVDARDS	IIDAREFDVP
YYLRVAIDNE	IRVGLWYSIS	FVNGQPQIDR	LDRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYIDGQ	GYLITNREIV	SEDIEDFEYT	PKEGIEGPFT	IFNEADEAAT	ITRFFQHIQA
VKPTVMATFN	GDDFFDFPFLC	ARAKVHGIDM	FLETGFADKS	EDEFKSRSCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDP	MTPYAMEQPQ	VLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLCPDEVL	RKSGTLCET	LLMVEAYRAQ	VIMPNRHEDP	LGNMFEGHLL
ASETYVGGHV	EALAGVFRS	DINTNFKIVP	AAQLIDQLD	AALTFYITNY	DEVKAEIQAK
LETMRDNPIR	FDKPLIYHLD	VAAMPNIML	SNRLQPDVSV	EEAMCAVCDF	NRPGKTCDRR
MTAWARGEYF	PAQRDEFNME	WFPPKKPSGP	KRRYVDLSPA	EQTALLHKRL	GDYSRKVYKK
TKETKVVNRE	SIICQRENPF	YVDTVRTFRD	RRYEYKGLHK	TWKKKLDGIA	EVDEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPGIFPENF	KFKMKNGKTL	ALSYPCTMLN	QMVHARFTNH	QYHDLDKETG	HFQVHSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	EECYAAVAEI	ADRWLDVLF	KAESLSDEEL	VDLIAENRSM	SRTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISQKPIGAPV	TERAVPVAIF	SAEESVKRTY
LRRWLKDNGL	ANFDLRSILD	WDYYIERLGS	VIQKLITIPA	AMQKVANPVS	RIRHPDWLHR
RVRAMDDKFK	QHKMTDFFRG	RFTMWLAVNN	DIVPVTIRIP	REFYLYNYKT	EHYTRERVVR
MLPHNRACGD	ILMNKINQPN	VDGAYELQTL	NRARDNGVDL	GQMSRKIVFL	HHAYTPSAPV
HCFSIVLPDG	IKLHVVDPAT	RRQPTDYHSN	EATALRAISR	ELGLLENKAY	TLVLSSTRDT
HYFTSMVPKL	AKFPILRMPS	SKPGHILDFP	WQSALAKKLL	SRYLSLSAWL	HRTIAQASHY
PLFFSDIDFA	RRLVAQDMVL	WWSPGEHPDL	GGYEDDALPS	DELVNPEFTS	PGVYSRVCLS
IQVRNLAVNS	VLQSSIVNEL	EGCGGTGFD	TAQATATLSD	SNLPPQTFMV	LKHMVRSWLT
KNAGPAGLTI	DHFWRWISSS	SSHMFDSQIQ	RFVHGLMRKT	FIQLLAEFKR	LGSNLVYADF

TRLVLVTSKP	PGTANAYATY	LLTAVTSHEL	FKHVYLRTDR	FYDFLSFMDP	ANEGGVLCED
PLAIEPPKQL	SVFLTWNICK	FLPPAVQDHF	KAVIKYFIVE	MHKISRARVK	EIDAIKGFIS
QRLTRKMLQT	VFPILPGSYL	NLTDPALEFV	KFTCAIFGLA	HDYQIEIGLL	KRNLLELVGV
KEFSEVASFH	NPCDPLKLSM	VTCQYCDYLR	DFDFCRDDDL	FPWTCPECLC	EYDRTAIEFS
LIQMLHRLER	GFSQQDLKCS	KCKQIRSDNV	SKHCCSGSYE	LTIGKVEVRR	KLRTIVNVAI
VHKLNLRL					
>SN					
GHRRLYLQLC	FRNVSDLLTV	RRDLLPLAQA	NAAKIDAVDA	YAEVVDPRDA	IIDIREYDVP
YYLRVAIDQD	IRAGLWYAVT	FVDGKPLFDR	VKRAEPVUMA	YDIETTKAPL	KFPDQAIQV
MMISYMIDGQ	GFLITNRDIV	SEDIEDFEYT	PKDGYEGPFT	IFNEADEEAV	LRRWFEHIRT
ARPTVMATFN	GDFFDFFPVA	ARAKVHGLDL	YLETGFAIDS	EEEFRSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTVAKLG	YNPIELDPEL	MTPYAVEQPQ	VLAQYSVSDA	VATYYLYMKY
VNPFIFSLCN	IIPLNPDEVL	RKSGTLCET	LLMVEAYRGN	IIMPNRHEEE	HGNMFEGHLI
ASETYVGGHV	EALEAGVFRS	DIPTHFKIDK	TAAQLIDQLD	AALKFCVANY	DEVKQQITEA
LEEMRDNNIR	SDKPLIYHLD	VAAMPNIML	SNRLQPDSVV	DESVCAVCDY	NRPGKQCDRR
MKWAWRGEYF	PAHRDEFNME	QFPPKRPNDP	KRRFHDLSA	EQSALLHKRL	GDYSRKVYKK
TKETKVIERE	SIICQKENPF	YIDTVRRFRD	RRYEYKGLLK	TWKKNLPIA	EIEEAKKLTL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVERIGRP	LELDTDGIWC
MLPSIFPENF	KFKLKSGKSI	AFSYPCTMLN	HLVYDGFTNH	QYHDLDPDTG	EYKIHSNSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQL
FERFLLGTTT	EECYAAVAEV	ADRWLDVLFT	KGESLEDDEL	VELIAENRSM	SKTLAEYGAQ
KSTSISTAKR	LAEFLGNQMV	KDKGLACKFI	ISARPMGAPV	TERAIPVAIF	SAEESVKRTY
LRKWLKDNSL	ANFELRSILD	WNYIYERLGS	VVQKLITIPA	AMQKVSNPVP	RIHHPDWLQR
RVAAMDDKFQ	QHKMTDFFHG	KFIMWLSLAN	ELVAIPLRIQ	REFYINFKTS	PDYTHEAVTR
TLPQNRPCLF	LFMHLTSNSD	IDGIYERQTL	NRARNVGFDL	QQLETEPVFL	FHASSSDSRI
HVFALFDPVG	ARIHIIDPSS	QRQRTVYHGS	LSTAFKGLTR	ELNNLENQSH	VLVISSHKDV
DYEEANISNL	IKFPVFMMAG	PKKAHSLDLL	WQKDVSKKMF	SRYIFLGRWL	YELTEKAKYF
SLSCQDLDF	RRLVKQDMLL	WWSPLPKPDL	GGVEDLNTVV	EEPKNPEYCT	PGLYTNVISA
VNMYNLAINS	VIQSSLVNEM	EGSGGTAFD	APQTALTIGE	SATSVQVFQT	LKTMVKTWVI
DAHGPAELSV	EHFWRWLCSS	ASAMHDPQLQ	RFVHGLMKKT	FYQLLAEFKR	LGSNVIYADF
NTIWLVTSTP	PGAAYAYSTY	ITTAATSHDL	FRHILLRTET	YYNFFLLFDN	ANYGAIVCEN
PEEDKLPEGL	PLAMSWNIAA	FLPPAFQPHF	RQAVAFFIVE	MAMIKTRKIK	ELEVSQAFIA
ERLTRKLLSM	VFPILPGSHI	NMEDPAFEFV	KFVCAAFSPS	KDYGNELGIL	RRNLLEIVGV
KEFNDAAIK	NPCEPFKLPM	VICQFCDHVR	DFDFCRDQEL	MTWLCPMCDG	EYDRLAIEFM
LVSCVDKIE	LFGAQDLRCH	RCKQSRAENV	SRSCCSGHYE	LTVNKVELRR	RLRTIVNISI
VHGLDKL					
>DS					
GHRRLFLQLH	FRNVSDLLTV	RCDIMPLALA	NSAKLDAVDA	YAEVVDPRDA	IVDIREYDVP
YYLRVAMDNE	IRVGLWYAIS	FVQGPAPAFAR	VKRAEPVUMA	FDIETTKAPL	KFPDQAIQV
MMISYMDVQ	GYLITNREIV	SEDIEDFEYT	PKEGYEGPFI	VFNEPDEAAT	IRRWFISHIQE
VKPTVMATFN	GDFFDFFPFLD	ARSKVHGIDM	FLESGFAKDS	EDEYKSRGCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YDPIELDPEL	MTPYAMEQPQ	VLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLCPDDEV	RKGTGTLCET	LLMVEAIRGQ	IIMPNRHEES	HGTMYEGHLV
ASETYVGGHV	EALEAGVFRS	DIVTHFKIEP	SAVQLIDQLD	AALTFCVTNY	DEVKAEIQAK
LEEMRDNPQR	MDSPLIYHLD	VAAMPNIML	SNRLQPDSVV	DEATCAVCDY	NRPGKTCDDR
MTWAWRGEYF	PARRDEYNME	TFPPKKPGGP	QRKFVDLSEA	EQTALLHKRL	GDYSRRVYKK
IKDTKIENRE	AIICQRENPF	YIDTVRRFRD	RRYEYKGLHK	TWKKNLDSIA	EVDEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPGVFPENF	KFKLANGKAI	AFSYPCTMLN	HLVHAKFTNH	QYHELDPETG	EYKVHSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	EECYAAVAEV	ADRWLNVLVS	HAEDLSDEL	VELIAENRSM	SKTLSEYGGQ
KSTSISTARR	LAEFLGDQMV	KDKGLACKFI	ISAKPMGAPV	TERAVPVAIF	SAEESVKRTY
LRKWLKDNSL	TSFDLRSILD	WDYIYERLGS	VIQKLITIPA	AMQKVANPVP	RIHHPDWLHR
RVVAMEDKFR	QHKVTDFFPG	RFTLWLSING	SLTAVPLRIP	REFYIHLRTP	ELYQCQKVAR

SMPRDRPCVN	LFIDITNDPN	VDGVYELQNL	TRAEAIGFDL	QQLGRKYIFL	YHACAANAPV
HVFALFIPGE	AKLHIVDPAT	RRQPTTYHGN	DATAKKAISR	ELGLVENRSY	IVVISSSKEQ
SYFDLHTPKL	AKFPVLSMSK	AKSPHSLDFP	WQTSVAQKLI	NRYLSLGPWL	DRTIAMADYY
PLLLADIEFA	RRLTSQDVIL	WWSPGDRPDL	GGIEEDNRPO	EELAKTEFKS	PGCYSNVCLE
IAVRNLAVIDA	VLHSVIVNEL	EGSGGATAFD	ASMQDLTLGE	SNVSPHIFSI	LKGLVKAWMV
DKISPATIAI	DHFWRWISST	ASNMYDTGIH	RFVHGLMRKT	FIQMLAEFKR	LGSHVVYADL
SRILLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHVYLHTR	FYDFLIFMDE	ANYGAVVCEN
PLAIEPPEEL	AIEMRWNIQS	FLPPAIQADF	RAVVRYFLVE	FFRTAQKKVE	ELSACREFVS
RKLTRRMLRV	LFPILPGSHL	PLSNPGLELV	KFTCAVFALA	KEYTLEVGLL	KRNLLDLVGV
REFASEAAVF	NPCEPLKLSA	VPCRHCDSMK	DFDFCRDPVL	LPWLCTKCGG	EYDRAGIEFA
LVRLVHELER	RFAQQDLRCA	RCSQVRADNV	SRHCCSGAFV	LTMNKADVRR	RLRTVVNVAL

AHGMGRL

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GHTRLYLQLH	FRNVSDLLTV	RRDIMPLALA	NSAKLDAVDA	YAEVVDPREG	IIDIREYDVP
YYLRVAMDND	IRVGLWYAVS	FTAGQPGFER	VKRADPVVMA	YDIETTKAPL	KFPDQAIQDV
MMISYMIDGQ	GFLITNREIV	SEDIDDFEYT	PKEGYEGPFT	VFNEPDEAAV	IRRFWSHIQD
VKPTVMATFN	GDFFDFFPVA	ARAKVHGIDM	FLEIGFAIDS	EDEYKCRSCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDPOL	MTPYAIEHPQ	ILAQYSVSDA	VATYYLYMKY
LHPFIFSLCN	IIPLCPDEV	RKGTGTLCE	LLMVEAFRGQ	IIMPNRHEES	HGNMYDGHLL
ASETYVGGHV	EALAGVFRS	DIETHFKIEP	SAVQLIDDL	AALTFCVTNY	DEVKAAVQAK
LEVMRDNPQR	MDQPLIYHLD	VAAMPNIML	SNRLQPDVSV	NEATCAVCDF	NRPGKECDRK
LQAWARGEFF	PARRDEFNME	SFPPKKPGGP	QRKFNDLPQA	EQTALLHKRL	GDYSRRVYKK
IKDTKIETRE	AIICQRENPF	YIDTVRRFRD	RRYEYKGLHK	TWKKNLDSIA	EVDEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGAKIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPGVFPENF	KFKLANGKAL	AFSYPCTMLN	HLVHAEFTNH	QYHELDPEAG	EYMHVSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGSTL	DECYAABAQV	ADRWLDVLF	HADDLSDEEL	VELIAENRSM	SKTLAEYGGQ
KSTSISTARR	LAEFLGDQMV	KDKGLACKFI	ISSKPMGAPV	TERAVPVAIF	SAEESVKRTY
LRKWLKDNSL	TNFELRSILD	WDYYIERLGS	VIQKLITIPA	AMQKVTPNPV	RIRHPDWLFR
RVAALDDKFH	QHKVTDFFPG	RFTLWLSVDG	TLASVPLRIP	REFYMHRLTP	EMYQCEKVVR
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HVFALFIPGE	VKLHIVDPAT	RRQPSTYHGN	DVTALKKAISR	ELGLVENRSF	IVVVSSSKEQ
SYFDLHTPKL	SKFPVLSMNK	TKSAHSLDFP	WQTSVAQKLV	SRYLSLQKWL	DTAMAQADYY
PLLLADVEFA	RRLMSQDVVL	WWSPGDRPDL	GGIEEDNRPO	EELAKTEFTS	PGCYSNVCLE
ITVRNLAVIDA	VLHSVIVNEL	EGSGGATAFD	AAMQDLTLGE	SNVSPLAFSI	LKSLVKTWML
DKISPATTVL	DHFWRWISST	ASHMYDTSIH	RFIHLGLMRKT	FIQMLAEFKR	LGSHVVYADL
SRILLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHVYLHTR	FYDFLIFMDE	ANYGAVVCEN
PLAIEPPEEL	AIEMRWNIQS	FLPPAIQSD	RALVRYFLVE	FFRTSQKKAN	EISACREFVQ
RKLIRRTLRL	LFPVLPGLSHL	HLTNPGLLEFA	KFACAVFALA	KEHTLEVGLL	KRSLLELVGV
REFAPEASFQ	NPCEPLKLAS	VPCQHCDAK	DFDFCRDPAL	LPWLCARCD	EYDRTAIEFA
LVRMVGDAER	RFAQQDLRCS	RCAQLRSDNV	AKHCCSGNYQ	LTMNKAEVVR	RLRTIVNVAL

AHNMGRL

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YYLRVAIDNE	IRVGLWYAVT	FTAGQPSFER	VKRADPVVMA	YDIETTKAPL	KFPDQAIQDV
MMISYMDVGQ	GYLITNREIV	SEDIEDFEYT	PKEGYEGPFT	IFNEPDEAAA	ITRFFQHIQE
VKPTVMATFN	GDFFDFFPFLC	ARSKVHGIDM	FLETGFAIDS	EDEFKSKTCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YDPIELDPOL	MTPYAMEQPQ	VLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPKLPDEV	RKSGTLCET	LLMVEAYRGH	IIMPNRHEEA	QGNMYEGHLL
ASETYVGGHV	EALAGVFRS	DIATHFKIEP	SAAQLIDELD	AALMFCVTNY	DEVKQIQISA
LEEMRDNPLR	HDKPLIYHLD	VAAMPNIML	SNRLQPDVSV	DESVCAVCYD	NRPGKQCDRR
MTAWARGEFF	PAHRDEYNME	TFLSKRPGGP	HRRFTDLSES	EQTALIHKRL	GDYSRKVYKK
MKDTKVENRE	SIICQRENPF	YIDTVRTFRD	RRYEYKGLHK	TWKKNLDTIA	EVEEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQLGRP	LELDTDGIWC

MLPGIFPENF	KFKLKNGKAI	AFSYPCTMLN	HLVHDKFTNH	QYHDLDPVTG	QYTIHSENSI
FFELDGOPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGSTT	EECYAAVAEV	ADRWLDVLF	RAENMPDNEL	FDLIAENRSM	SKTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISARPMGAPV	TERAIPVAIF	SAEESVKRTY
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RVVAMDDKFR	QHKVTDFFPG	RYTLWLSIDS	ELVAIPLRVP	REFYIHFRSP	DQYFCEQVVK
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HVFAVFHPDG	VKLHIVDPAT	RRQGTTHSS	DVTALKAVSR	ELGLLEGRSY	TVVISSMKEQ
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PLYVADLEFA	RRLKEDMVL	WWSPGDRPDL	GGIEEDKRQT	QEIASTEFLS	PGCYVNVCL
IAVRNLA VNS	VLHSVVVNEL	EGSGGATAFD	SAPRDLTLGE	SNVSPKTLNV	LKSMIKTWLL
DKISPATLAI	DHFWRWISSN	ASNMYDGSIH	RFVHSLMRKT	FIQLLAEFKR	LGSHVVYADF
SRILLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHVYLNTER	FYDFLVFMDQ	ANLGGVVCED
PLAIEPPEEL	AIEMRWNIET	FLPKAIQEDF	RSIVRFFVIN	LYRTQQQKVK	EMEATREFIA
RRLTRRCLKT	VFPVLPGAHL	AMTNPPLEFV	KFVCAVFHLA	KDYQVEMGLL	RRLNLELVGV
REFADDAVFR	NPCEPLRLTN	VPCRHCDA LR	DFDFCRDTEL	LPWACGECGG	DFDRTAIELA
LIDIVYTLER	TFTQQDLRCS	KCKQIQSDNV	SRHCCSGAYQ	LTISKADVRR	KLKTIVNVAM
VHNLGRL					

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NPGRFLQLC	FRNVSDLLTV	RREIVPLALA	NGAKRDAVDA	YAEVVDPREG	IIDAREYDVP
YYLRVAIDND	LRVGLWYAVT	LTAGQPSFER	VKRADPVVMA	YDIETTKAPL	KFPDQATDQV
MMISYMIDGQ	GYLITNREIV	SEDIEDFEYT	PREGYEGPFT	VFNEPDEPST	IMRWFRHVQE
VKPTVMATFN	GDFDFPFPLC	ARAKVHGIDM	FQEIGFAIDN	EEEFKSRSCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDPEL	MTPYALEQPQ	VLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLNPDENV	RKSGTLCET	LLMVEAYRGH	IIMPNRHEEE	HGNMYEGHLL
ASETYVGGHV	EALAGVFRS	DIPTHFKIDP	TAAQLIDQLD	AALEFCVTNY	DEVKGQIQAK
LEEMRDNPLR	MDKPLIYHLD	VAAMPNIML	SNRLQPDSIV	DEATCAVCDY	NRPGKTCDRK
LTAWARGEFF	PAHRDEFNME	SFPPKKPGWP	QRRFTDLSEA	EQTALMHKRL	GDYSRKVYKK
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AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGAKIIQMA	RQLVERIGRP	LELDTDGIWC
MLPGTFPEDE	KFKLKSGKPI	GFSYPCTMLN	HLVHAQFTNH	QYHDLDPETG	EYKVHSENSI
FFELDGOPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	QECYAAVAQI	ADRWLDVLYS	RADDLSDEEL	VELIAENRSM	SKTLAEYAGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISQKPMGAPV	TERAVPVAIF	SAEESVKRTY
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RVMAIDDKFH	QRKVTDFFPG	RFMLWLNVD	RLVPIPLRIP	REFYIHTRTP	ELWTAEKVVR
GLPRGAPCVN	LFIDLTNDPN	VDGVYELQTL	NRAQGTGLDL	YQLERKYVFL	YHAMAATAPV
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PLLLADIDFA	RRLTKEDLVL	WWSPGDLPLD	GGIQDDKRPS	EPLPGTEFLS	PGCYFNVCL
IEVRNLAVNA	ILHSVIVNEL	EGSGGATAFD	SAQRDLTLGE	SNVSPKTFGI	LKAMVKTWLL
DKISPSSLTI	DHFWRWISSS	VSHLYDPSIH	RFVHGLMRKT	FIQLLAEYKR	LGSHVVYADL
SRILLVTSKP	PGTADAYATY	INTAVQSNE	FQHIWLKTER	FYDFLLFMDP	ANLGGVVCEN
PKAVEPPEEI	VIEMQWNIQN	FLPPAIQKDF	ASIVRYFMIE	LYRSRQKKVK	EMELTREFIA
RRLTRKLLRM	VFPVLPGSHL	RLYDPVLEFV	KFVCAVLALA	KEYQIEVGLL	RRSVLELTGV
REFSNDVFR	QPCEPLKLSN	VPCKHCDSLR	DFDFCRDPEL	LPWLCGNCGG	EYDRTAIEFA
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LHNLHRL					

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GHRRLYLQLH	FRNVSDLLTV	RRDVMPLALA	NSAKLDAVDA	YAEVVDPREG	IIDIREFDVP
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DSYLPQGSQG	LKAVTTAKLG	YNPIELDPEL	MTPYAMEQPQ	VLAQYSVSDA	VATYYLYMKY

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ASETYVGGHV	EAEAGVFRS	DIATQFKIEP	TAVQLIDQLD	AALTFCVTNY	DEVKAQIQAK
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FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
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KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISAKPLGAPV	TERAVPVAIF	SAEESVKRTY
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HVFALFLPSG	VRLHIVDPAT	RRQATTYHAN	DLTALKALSR	ELGLLENQGL	TMVISSLKEQ
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VTVRNLAVDA	VLHSMIVNEL	EGSGGATAFD	ATQKDLTLGE	SSVSPVTFSI	LRSMVKTWLL
DKISPASLAI	DHFWRWISSN	ASNLYEPSLH	RFVHGLMRKT	FIQMLAEFKR	LGSHVVYADL
SRILLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHVYLHTR	FYDFLIFMDP	ANLAGIVCED
PLAVDPPEEL	CLEMRWNIQS	FLPPAIQEDF	KKAIRNFLVE	FFKVQKQKTK	EQEDSKEFIQ
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REFSPEAAFQ	NPCEPLKLSN	VPCRHCDSL	DFDFCRDPEL	LEWTCANCYG	EYDRTMIEFA
LIEMVWELER	RFAQQDLRCT	KCKQIQSDNV	SRFCCSGNYQ	LTISKADVRR	RLRTMVNVAL
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FERFLLGETT	EECYSAVAQI	ADRWLDVLF	KAENLPTQEL	VELIAENRSM	SKTLAEYAGQ
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SRVLLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHVYLHTR	FYDFLVFMDQ	ANLGGVVCED
PLAIDPPEEI	CIEMRWNIET	FLPPAIQRDF	RNVVRFFLVE	LFRTCQKKTQ	EVEASREFIS
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AHNLNRL					

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IKDTKVENRE	AIICQRENPF	YIDTVRRFRD	RRYEYKGLHK	TWKKNLDSIA	EVDEAKKMIL
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FERFLLGNNT	EECYSAVAQV	ADRWLDVLF	KAENLGDDDEL	VELIAENRSM	SKTLAEYAGQ
KSTSISTAKR	LSEFLGAQMV	KDKGLACKFI	ISERPMGAPV	TERAVPVAIF	SAEENVKRTY
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HVFALFIPGN	VKLHIVDPAT	RRQPSNYHGN	DVAALKAISR	ELGLVETQSY	MIVISSMKEQ
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PLLLSDIEFA	RRLTEHDLVL	WWSPGDKPDL	GGAEDDCRPS	EELPKTEFMS	SGCYSNVCLE
ITVRNLAVNA	VLHSVIVNEL	EGSGGATAFD	SSQRDLTLGD	SSVSPQTFSI	LKSMVKTWLL
DKISPATIAI	DHFWRWISSN	ASHMYDPSIH	RFVHGLMRKT	FIQMLAEFKR	LGSVVYADL
TRVLLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHVYLHTR	FYDFLLFMDQ	ANLSGVVCE
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RRLTRKMLKA	VFPLLPGSYL	TLTNPILFV	KFTSAVFLA	KDYQIEVGLL	KRNLELIGV
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AHNLTRL					

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VKPTVMATYN	GDFFDFFFLC	ARAKVHGIDM	FVEIGFAKDS	EDEFKSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDP	MTPYAVEQPQ	TLAQYSVSDA	VATYYLYMKY
VHPFVFSLCN	IIPLCPDDEV	RKSGGTLCE	LLMVEAYRGK	IIMPNRHEEE	HGKMYEGHLL
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LEEMRDNPHR	MDKPLIYHLD	VAAMYPNIML	SNRLQPDVSV	DEAVCAVCDY	NRPGKTCDRR
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IKDTKVENRE	AVICQRENPF	YIDTVRRFRD	RRYEYKGLHK	TWKKNLDPIT	EVDEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPGIFPENF	KFKLSNGKAI	GFSYPCTMLN	HLVHAKFTNH	QYHDLNPETG	EYGVHSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	EECYAAVAQI	ADRWLDVLF	KADSLEDEEL	IELIAENRSM	SKTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISASPGAPV	TERAVPVAIF	SAEESVKQAY
LRKWLKNNSL	ADFNIRSILD	WGYIERLGS	VIQKLITIPA	AMQKVANPVS	RIQHPDWLHR
RVVALDDKFH	QHKMTDFFPG	RFAMWLVGG	DLVSIPLRIP	REFYVHLRAP	DMYLCEKVVR
SLPRDRPCAN	LFIDLTNDPN	IDGVFELQTL	NRAETVGFEL	DQLGRKYIFL	YHACSNSAPV
HVFALFIPGS	VRLHIVDPAT	RRQPSTYHGN	DATALKAISR	ELGLIENQSF	MVVISSSKEQ
TYFDAYVPR	AKFPVLSMSK	TKIPHTLDFP	WQTNVAQKMI	SRYLCLGTWL	DRTIALADYY
PLLLADIDFA	RRLSEQDHVL	WWSPGSRPDL	GGIEDDARPT	EELPKTEFMS	PGCYSNVCLE
ITVRNLAVNA	VLHSVIVNEL	EGSGGSTAFD	ASQRDLTLGD	SNVSPQMFSI	LKGMVKTWLL
DKISPASIAI	DHFWRWISSN	ASCMYNPSLH	RFIHLMRKT	FIQMLAEFKR	LGSVVYADL

SRVLLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHVYLRTER	FYDFLLFMDQ	ANLGGVVCED
PLAVEPPEEL	SIEMRWNIET	FLPLAIQRDF	RNTIRFFLVE	FFRTCQKKTQ	EMGACREFIA
RRLTRKTLKA	VFPLLPGSHL	HLSNPILEFV	KFCCAVFGLA	KEYQIDVGLL	KRNLLLELVGV
REFASEATFH	NPCEPLRLAN	VPCRHCNDLR	DFDFCRDPEL	MPWLCSNCGG	EYDRTMIEFA
LMDMVFDLER	RFAQQDLRCS	KCQRLQSDNV	SRHCCSGNYQ	LSIIKADVRR	RLRTIVNVSI
AHSLSRL					
>SC					
GHQRLYIQLC	FRNVTDLLTV	RRDIMPIALA	NGAKRDAVDA	YAEVVDPQDS	IIDIREYDVP
YYLRVAIDID	IRVGLWYGVT	FEAGQPHFER	VKRADPVVMA	YDIETTKAPL	KFPDQALDQV
MMISYMVDGQ	GYLITNREIV	SEDIGDFEYT	PKEGYEGPFI	VFNEADEAAT	ISRFFQHIQE
IKPTVMATFN	GDFFDPFPLD	ARAKANGIDM	FLEIGFTKDN	EDEYKSRCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDPEL	MTPYAQEQPQ	VLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLCPDEVL	RKGTGTL CET	LLMVEAYRGH	IIMPNRHEEA	HGNMYEGHLL
ASETYVGGHV	EALEAGVFRS	DIPTDFKIDP	TAIQLIDQLD	AALTFCVTNY	EEVKGEIQRM
LEVMRDDPKR	TDKPLIYHLD	VAAMPNIML	SNRLQPDSMV	DESVCAVCDY	NRPGKTCDRR
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FFELDGPKYA	MILPASKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	QECYAABAEV	ADQWLDVLF	HADSLPDEEL	VELIAENRSM	SKTLAEYAGQ
KSTSISTARR	LAEFLGDQMV	KDKGLACKFI	ISQRPAGAPV	TERAVPIAIF	SAEEDVKRTY
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RVANAVDKFK	QNKVTDFFPG	RYMLWLSVEA	DLVSVAVRVP	RQFYINLRTP	DLYQWEKVTR
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HVFALFYPPG	VKMHVVDPAT	RRQPTTFHGN	DATAKAVSR	ELGLIENRGY	TVVISSSKDQ
SYFDRSVQKL	TKFPILSMTK	IRQAHTLDFP	WQLHVAHKMN	ARYLAMGPWL	DRLIATAQYF
PLVVSIDISFA	RRLVQQDMVL	WWSPGENPDL	GGIECDRRPT	DDFPRTEFMS	PGAYPNVCLE
ITIRNLAVNS	VLHSLVLNEL	EGSGGATAFD	ANQRDVTFG	SNVSPHMF	LRNMLKGWLL
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GRVLLATSKP	PGTAYAYATY	LTSAVTSHEL	FEHVKLTTDR	FYDFLLFMDP	ANVGGVVCED
PLAVEPPTEL	ALEMRWNIAQ	FLPKAIRPDF	EAVVQYFIVE	LFKARQKKVQ	EADLIQEFIS
RKLTRKMLRA	VFPVLPGSHL	TLESPPLEFV	KFACAVFTLA	KDYTVEVGLL	KRLLELIGV
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VHNLPR					
>HI					
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MMISYMVDGQ	GYLITNREIV	SQDIEDFEYT	PKEGYEGPFI	VFNEADEAAT	ITRFFEHIQE
VKPTVMATFN	GDFFDPFPLN	ARAQVHGIDM	FLETGFAKDT	EDEYKSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTVAKLG	YNPIELDPEL	MTPYALEQPP	TLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLCPDEVL	RKGTGTL CET	LLMVEAFRGH	IIMPNRHEEE	HGNMYEGHLL
ASETYVGGHV	EALEAGVFRS	DISTHFKIEP	SAAQLIDELD	AALSFCVANY	DEVKGQIQAA
LEEMRDNPLR	MDKPLIYHLD	VAAMPNIML	SNRLQPDVSV	DESVCAVCDY	NRPGKTCDRR
LTWAWRGEFF	PARRDEYNME	TFPPKKNGGP	PRKFVDLSET	EQTALIHKRL	GDYSRKVYKK
IKDTKVENRE	AILCQRENPF	YVDTVRRFRD	RRYEYKGLHK	TWKKNLDSL	EVDEAKKLIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGVTC	LTGATIIQMA	RQLVEQVGRP	LELDTDGIWC
MLPGVFPENF	KFKLRNGKAI	GFSYPCTMLN	HLVHDQFTNH	QYHDLDPETG	EHKVHSENSI
FFELDGPKYA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGSTT	EECYAABAQV	ADQWLDVLF	KAEDLSDEEL	VELIAENRSM	SKTLAEYGTQ
KSTSISTAKR	LAEFLGSQMV	KDKGLACKFI	ISERPFAGAPV	TERAIPVAIF	SADESVKRTY
LRKWLKDNGL	TQFDLRSILD	WEYYIERLGS	VIQKLITIPA	AMQKVANPVP	RIRHPDWLHR
RVVALDDRQ	QHKVTDFFPG	RYNLWLSVDS	KLVSAPLRIP	REFYLHLRNP	DLYSCDKVVK

NLPRNLPCVN	LFVDLTNDPN	VDGIFELQTL	NRAQITGLDL	DALQPKYVFL	YHACSINRPT
QIFALFLPNG	VRLHLVDPAT	RRQPADYHAN	DITALKAVSR	DLGMLDQSL	TVVISSVKEQ
SYFDAFLPKL	SKFPVLSMPK	ARAPHS�DFP	WQTHFAQKML	IRYFSLGPWL	DRMVSLAEYY
PLFLSDLDFA	RRLTNQDTLL	WWSPSGRPDL	GGMEDDRRFT	EELPQTDVFS	PGCYSNVSL
ITVRNLAVNA	VLHSVVNEL	EGSGGTAFD	SAKRDLTLGE	SNISPQTIGV	MKSMVKTWLL
DKISPASLAI	DHFWRWISSR	ASHMYDPSMH	RFVHGLMRKT	FIQLLAEFKR	LGSHVVYADF
SRILLVTSKP	PGTAHAYATY	ITTAVTSHEL	FQHIYLFTEK	FYDFLIFMDE	ANLGGIVCED
PLAVEPPDEL	IIEMNWNQK	HLPVAIQRDF	IDLVRFYIIH	LYKTKQKRTK	EMDSVKDFLA
RRLMRKLFMF	IFPLLPGSYL	NMSDPTLEFI	KFVCAVFELA	KDYQSEVGLL	KRNALELIGV
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GHRRLYLQIC	FRNVSDLLAV	RRDIVPLALA	NSAKRSVDA	YAEVVDPREG	IIDVREYDVP
YYLRTAMDNE	LRVGMWYGV	FNAGQPEFER	VKRDPVMA	YDIETTKAPL	KFPDQAIQV
MMISYMVDGQ	GYLITNREIV	SEDIDDFEYT	PKEGYEGPFI	IFNEADEAAT	IRRFQHIQE
VKPTVMATFN	GDFDFPFLLC	ARAQTHDIDM	FLEIGFAKDS	EDEFKSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTVAKLG	YNPIELDP	MTPYAMEQPQ	VLAQYSVSDA	VATYYLYMKY
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PLFLSDLEFA	RRLISQDCVL	WWSPSGSPDL	GGMEGDQRYT	EELPHTEFKS	PGCYSNVSL
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DKISPASLTI	DHFWRWVTSK	SSHLYDPSIH	RFIYGLMRKT	FIQLLAEFKR	LGSHVVYADF
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RKLTRKLFKY	IFPLLPGSYL	RLVDPTLEFI	KFACAVLELA	KDFQSEIGLL	KRNALELIGV
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VHNLGRL

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YHLRVAIDND	IRVGLWYAIT	FTAGQPTFER	VKRADPVMA	YDIETTKAPL	KFPDQAIQV
MMISYMVDGQ	GYLIVNREIV	SEDIEDFEYT	PKEGYEGPFI	VYNPNNEEAT	IKRWFSHIQE
VKPTIMATFN	GDFDMPFID	ARAKVNGLDM	FLETGFAIDA	EEYKSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDP	MTPYAVEQPQ	VLAQYSVSDA	VATYYLYMKY
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TKETKVETRT	SIVCQRENPF	YVDTVRRFRD	RRYEYKGLHK	KWKNLDSIA	EVDEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RALVEQIGRP	LELDTDGIWC

MLPGVFPENF	KFNLKNGKSI	KFSYPCTMLN	HLVHDKFTNH	QYHDLNPETG	EYEVHSENSI
FFELDGOPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	QECYAAVAEV	ADQWLDILYT	RGETLSDEEL	VDLIAENRSM	SKTLAEYGGQ
KSTSISTARR	LAEFLGDQMV	KDKGLACKFI	ISAKPIGSPV	TDRAVPVAIF	SAEDSVKRTY
LRKWLKDSSL	NNFDLRAILD	WDYYIERLGS	VIQKLITIPA	AMQKVANPVP	RIRHPDWLFR
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DKISPACLAL	DHFWRWVTSK	GSQLYDPSLH	RFIHGLMRKT	FIQLLAEFKR	LGSVVYADF
STILLATSKP	PGTAHAYATY	ITTAVTSHEL	FQHIYLTTEK	FYDFLICMDR	ANMGGVVCE
PLAVEPPAEL	AVEMNWNIOH	FLPPAIQHDF	GSVVQYYIVE	LYRIRQKNS	EKSMIVDFIA
RKFTRKLLKV	IFPTLPGSHL	HMTHPTLELI	KFLCAVFLA	KDYTVEIGLL	KRNLLLELINV
REFAQEAIYR	NPCEPLKLSN	VPCRHCDDL	DFDFCRDLSL	LPWLCTNCNG	EYDKTVIEFS
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EYKLARL					

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GHRRLFLQLC	FHNISDLLTV	RRDILPLAQA	NSAKRDAVDA	YAEVIDPREG	IIDIREYDIP
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KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISAKPMGAPV	TERAIPVAIF	SAEESVKRTY
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HVFAVFMPPG	VRLHIVDPAT	NRQPTAYHSN	DTTALKAVSR	ELGLFEDKSF	IVVISSSKDQ
SYFDRLVPKL	AKFPVLCSMQ	AKGPHTLDFP	WHSHLAQKML	NRYLSLGLWL	DRMIDLAEYY
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ITVRNLAVNS	ILQSVMVNEL	EGSGGATAFD	STQRDLTLGE	SQVSAQTFGI	MKNMLKSWLV
DKINPANLAL	DHFWRWITSS	ASHLYDQSIH	RFVHGLMRKT	FIQLLAEFKR	LGSVVYADF
STILLATSKP	PGTAHAYATY	ITTAVTSHEL	FQHIYLNTER	FYDFLVCMR	ANLGGIVCED
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LIEMTRALER	NFAQQDLRCG	KCQQIQSDNV	SRYCCSGSYQ	FTISKADMRR	KLRTIVNVAR
EYNLPRL					

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MLPGVFPENF	KFKLNNKGAL	AFSYPCTMLN	HLVHAQFTNH	AYHDLNPETG	DYDIHSENSI
FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NDDGSMaelK	GFEVKRRGEL	QLIKIFQSQL
FERFLLGTTT	EECYRAVAHA	ADQWLDILFS	KAETLSDEEL	VDLIAENRSM	SKTLAEYAGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISAQPHGAPV	TERAVPVAIF	SAEESVKRTY
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RVAGQVDKFK	QNKMTDFFLG	RFNLWLSVDN	SVVSIPLRIP	REFYLHFKTP	EYYSKAVVR
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HVFALFLPAG	VKLHIVDPAT	RRQPTTYHnk	DTTALKAISr	ELGTLEDrsY	IVVLSSMKDQ
SYFDMWTPKL	AKFPVLSMPK	TRKPHSLDFP	WQTHVAKNML	SRYLNVGSWL	DRSIALADYY
PILLSDISFA	RRLAEQDIVL	WWSPSDRPDL	GGVEQDNrPT	EELQTEFNs	PGCYSNVCL
ITVRNLAVNS	VLHSLVVNEL	EGAGGATSFD	SQQRDLTLGE	SQVSSITFGI	LKSLIKGWL
DKISPATLTI	DHFWRWVSSS	ASHMYDPNIH	RFIHGLMRKT	FIQMMAEFKR	LGSVVYADF
SRILLATSKP	PGTAHAYATY	ITTAVNSNEL	FQHIFLrTER	FYDYLLFMDQ	ANLGGVVCED
PLALEPPEDI	SIELRWNIQT	FLPAAIQQDF	ANIMQYCIvK	LFKIRQKKEN	EIELTRDFIA
RQLQRKLLST	VFPVRPGSYL	ALSNPVLEFV	KFACAVFGLA	RDYSVEVGLL	KRSLDLAGV
REFAAEAVFR	NPCEPLKLSN	VPCRHCdQLR	DFDFCRDEEL	APWTCGTCGG	EFDRMAIeld
LMKMVANLER	AYTQQDMVCV	KCKQLRSDNV	SRWCCSGAYQ	LTIGKAEMRR	RLRTIVNVAL
VHGLPRL					
>SL					
GHRRLYLQLC	FRNVSDLLTV	RRDIAPLALA	NGAKRDAVDA	YAEVVDPGEC	IIDIReYDVP
YYLRVAIDNE	LRVGLWYAVT	FTAGQPSFER	VKRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYMVDGQ	GYLITNREIV	SEDIEDFEYt	PKEGYEGPFI	VFNEPDEAAT	MMRFFQHIQE
VKPTVMATFN	GDDFDFFFLC	ARAKANGIDM	FLETGFAIDS	EDEFKCRTCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDPeL	MTPYAMEQPQ	VLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLCPDEVL	RKSGTLCET	LLMVEAYRGR	IIMPNRHEDA	HGNMHQGHLL
ASETYVGGHV	EAEAGVFRS	DIPSDFKVVP	SAVQLIDDLd	AALMFCVTNY	DEVKNEIQAA
LEVMRDNPKR	TDKPLIYHLD	VAAMPNIML	SNRLQPDSMV	DESVCAVCDY	NRPGKTCDRR
LEAWRGEFF	PAHRDEFNME	SFPSKRPGGP	QRKFADLTET	EQTALLHKRL	GDYSRKVYKK
IKDTKIETRE	SIVCQRENPF	YVDTVRRFRD	RRYEYKGLHK	TWKKNLDSIA	EVDEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RALVEQIGRP	LELDTDGIWC
MLPGVFPENF	KFKLNNKGSi	AFSYPCTMLN	HLVHAQFTNH	QYHDLDPETG	EYVVHSENSI
FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NDDGSLAEELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGSTT	EECYAAVAEV	ADQWLDILFS	KAETLGDDeL	VDLIAENRSM	SKTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISARPMGAPV	TERAIPiAIF	SAEESVKRTY
LRKWLKDNSL	TNFDLRSILD	WDYYIERLGS	VIQKLITIPA	AMQKVtNPVP	RVRHPDWLHR
RVAGAIKFK	QNKVTDFFQG	RFTLWLSIDG	ELTPVALRIP	RVFYHLHkSL	GHYSCDKVIR
NLPRGLHCSY	LFTDLINDPN	VDGVFEQQTL	NRAQSSGVDL	VQLDRKYIFL	YHACSNsAPI
HVFVLFPLSG	VKLHVVDPAT	RRQPTTYHNN	DITALKAISr	ELGLLENMSY	SIVVSSTKEQ
TYFDTWVPKM	SKFPVLSMSK	TKAAHTLDfP	WQTHVAQKLL	YRYLSVGGWL	DRLVVlADYY
PLLLSDITFA	RRLIQQDTVL	WWSPSERPDL	GGLEDDFRPV	EELQNTeFMS	PGCYSNVCLD
VAVRNLAVNS	VLHSVVVNEL	EGSGGTtAFD	SAQRDITLGE	SSLSPQTFGI	LRTMVKGWLL
DRISPATLAI	DHFWRWVSTS	ASNMHDPsIH	RFVHGLMRKT	FIQMLAEFKR	LGAHVvYADF
SHILLATSKP	PGTAHAYATY	VATAVTSHEL	FQHIYLKAER	FYDFLLFMDP	ANMGGVVCED
PLAVDPPEEL	SIEMRWNIQT	FLPPAIQDDF	GKVLQYFIVE	LFQIRQKKVN	EMDATREfIA
RRLTRRLKLV	VFLLPGSHL	HLINPILEFI	KFTCAVLGLA	QEYRIEvGLL	KRNLLDLAGV
REFATEAIFR	NPCEPLRLAN	VPCRHCdTLR	EFDFCRDPeL	MPWLCGGCGV	EYDRIAIELE
LMRMVCSLER	SFAQQDLRCA	KCKQVRSDNV	SRYCCSGAYQ	LTMNKAeVRR	RLRTVvNVAI
VHGMAKL					

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GHRRIYLQLC	FRNVADLLNV	RRDIVPLALA	NSAKRDAVDA	YAEVVDPREG	IIDVREYDVP
YYLRVAIDNE	IRVGWYSVT	FNAGQPSFER	VKRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYVMDGQ	GYLITNRDIV	SEDIEDFEYT	PKEGYEGPFI	VFNEADEAAT	IMRFFEHI
VKPTVMASFN	GDFDFPFPLD	ARSKANGIDM	FLETGFAKDS	EDEYKSRACA	HMDCFRWVKR
DSYLPQGSQG	LKAVTTSKLG	YNPLELDPEL	MTPYAVEQPQ	ILAQYSVSDA	VATYYLYMKY
VHPFTFSLCN	IIPLNPDEVL	RKSGTLCET	LLMVEAYRGQ	IIMPNRHEEA	HGSMYDGHLL
ASETYVGGHV	EALEAGVFRS	DIPTDFNVVP	SAVQLIDDL	AALKFCVTNY	DEVKAEITAA
LELMRDNPKR	TDKPLIYHLD	VAAMYPNIML	SNRLQPDSVV	DEAVCAVCDY	NRPGKTCDRR
LDWAWRGEFF	PAHRDEFNME	TFPPKFPGKP	QRRFPELTEA	EQTALLHKRL	GDYSRKVYKK
TKDTKVETRE	AIVCQRENPF	YVDTVRAFRD	RRYEYKGLLK	TWKKNLDSIT	EIDEAKKLVL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RALVEQLGRP	LELDTDGIWC
MLPGVFPENF	KFKLKNGKSI	GFSYPCTMLN	HLVHAQFTNH	VYHDLDPETG	EYIVHSENSI
FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQTSI
FEKFLLGSTT	EECYAAVAQV	ADQWLDVLF	KADTLGDDEL	VDLIAENRSM	SKTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISAKPMGAPV	TERAVPVAIF	SAEESVKRVY
LRKWLKDNSL	ANFELRSILD	WNYIERLGS	VIQKIITIPA	AMQKVSNPVP	RIRHPDWLHR
RVAGAVDKFK	QNKVTDFFAG	RFTLWLSVDA	KLVSVSLRIP	RTFYLNKSP	EFYSYEKVV
NLPHDIRGAN	LFMDLTNDPN	VDGVFEQQTL	NRAENIGFDL	DQLDRKFIFI	YHASSSTGNL
HVFVAVFPTG	VKLHVVDPAV	HRQNTTYHSK	DITALKAINR	ELSFMEDMSY	TLVISSTKEQ
AYFEAHIPRL	TKFPVLSMPK	TKMAHALDFN	WQTHVGPKML	NRYLRLGQWL	GRQISWADYY
PLFLADINFA	RRLNEQDMII	WWSTSDRPDL	GGIENDRRPI	EDLPNTEFVS	PGCYPNVCLE
VTVRNLAINS	VLHSVMVNEL	EGSGGATAFD	SAQRDLTLGE	SSVSVQTFGI	LKTMIKTWLL
DKISPAAVAV	DHFWRWISS	ASHMFDP	RFIHLMRKT	FIQMLAEFKR	LGSHIVYADF
SHILLATTKP	PGTAHAYATY	IMTAVTSNEL	FQHIYLNTER	FYDFLLFMDQ	SNMGGMVCE
PLAITPPEEL	SIEMRWNIAS	FLPLVIQSEF	NSIIQFFIVE	LFRIRQKTK	EMDAMREFIA
RRLTRKVLRA	VFPTLAGSHL	RLENPVLEFC	KFACAVFGLA	KEYQVEIGLL	KRSLLELINV
REFSSEATFR	NPCEPLKLSN	VPCRHCDA	DFDFCRDPDL	SAWLCDTCGG	DYDRTTIELM
LMEVVYSLER	SFAQQDLKCA	KCKQIQSDNV	SRYCCSGSYQ	HTVSKVDVRR	KLKTVVNVAI

MHNLGRL

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GHRRIYLQLC	FRNVSDLLTV	RRDIMPLALA	NSAKRDAVDA	YAEVVDPREG	IIDIREFDVP
YYLRVAIDND	IRVGLWYAVT	FTAGQPSFQR	VKRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYVMDGQ	GYLITNRDIV	SEDIEDFEYT	PKEGYEGPFI	IFNEADEAAT	ITRFFEHIRD
VKPTVIASFN	GDFDFPFPLD	ARARINGIDM	FLETGFAKDA	EDEYKSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDP	MTPYAMEQPQ	ILAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLNPDEVL	RKSGTLCET	LLMVEAYRGQ	IIMPNRHEEA	HGSMYDGHLL
ASETYVGGHV	EALEAGVFRS	DIPIDFKIEP	SAVHLIDDL	AALTFCVTNY	DEVKREITAA
LELMRDNPKR	TDKPLIYHLD	VAAMYPNIML	SNRLQPD	DESICAVCDY	NRPGKTCDRR
LDWAWRGEYF	PAHRDEFNME	SFPPKRP	QRRFPDLTET	EQTALLHKRL	GDYSRKVYKK
TKETKIE	AIVCQRENPF	YVDTVRRFRD	RRYEYKGLLK	TWKKNLDSIA	EIDEAKKLIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RALVEQIGRP	LELDTDGIWC
MLPGVFPENF	KFKLDNSKSI	AFSYPCTMLN	HLVHAQFTNH	EYHELNPETG	EYVVHSENSI
FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQTSI
FEKFLLGATT	EECYAAAVEV	ADQWLDVLF	KADTLGDDEL	VELIAENRSM	SRTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISARPMGAPV	TERAVPVAIF	SAEESVKRVY
LRKWLKDNSL	TNFDLRSILD	WDYIERLGS	VIQKLITIPA	AMQKVSNPVP	RIRHPDWLHR
RVAGAVDKFK	QNKVTDFFSG	RFTLWLSVDS	ELVSVTLRVP	RIFYLNKTP	DFYSCEK
NLPRDLNGAN	LFVDLINDPN	VDGVFEQQTL	NRAERTGFDL	SQDRKFVFF	YHACSGNGAV
HVFALFLPAG	VTLHIVDPAT	RRQPTTYHSK	DATALRAISR	ELGLENMSH	TVVISSSKDQ
TYFDSSMPKL	SNFPVLAMSK	AKGHHS	WHSHVAQKML	NRYLNF	DRMIQLADYY
PLLLADISFA	RRLSQQDMVL	WWSPGDRPDL	GGVENDKRPT	EELPNTEFVS	PGCYSNV
VTVRNLAVNS	VLHSVMVNEL	EGSGGATAFD	STQRDLTLGE	SSVSAQTFAI	LKSMIKTWLL
DKISPATLAV	DHFWRWISS	ASHMFDP	RFIHLMRKT	FIQMLAEFKR	LGSHIVYADF

SRILLATSKP	PGTAHAYANY	ITSAVTSNEL	FQHIYLNTER	FYDFLLFMDQ	ANMGGVVCEN
PLAVAPPEEL	AIEMRWNIES	FLPPAIQGDF	SAVVQYFLVE	LFRIQKQKAN	EMDDSDREFIA
RRLTRKLLKV	VFPHTPGAHL	QLVNPVMELV	KFMCAIFGLV	KDYSVEIGLL	KRNLLLELIGI
KEFATEAIFR	NPCEPLKLSN	VPCRHCDAIR	DFDFCRDIEL	IPWFCQHCQG	EYDRIAIELM
LMEVVQTLER	TFAQQDLKCS	KCKQIQSDNV	SRYCCSGTYQ	FTISKADVRR	KLRTIVNVAL
VHNLRL					
>AS					
GHRKLYLQLC	FKNVTDLLAV	RRDIMPLALA	NSAKMNAVDA	YAEVVDPRES	IVDIREFDVP
YFLRVAIDNE	IRVGLWYTVT	FSAGKPTISR	VQRAEPVMA	YDIETTKAPL	KFPDQIDQV
MMISYMIDGQ	GFLITNRDII	SEDIDDFEYT	PKEGYEGPFT	VFNEPDEAAT	IKRFFQHIQT
AKPTVMATFN	GDFDFPFPLC	ARAKVHDIDM	LLETGFAKDS	EDEFKSNTCV	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDPCL	MTPYALEQPQ	TLAQYSVSDA	VATYYLYMKY
VHPFIFSLCT	IIPLRPDEVL	RKSGTLCET	LLMVEAYRAG	VIFPNKHEDP	HGNTFEGHLL
ASETYVGGHV	EALGAVFRA	DIPTHFKIVP	SACQLIDGLD	AALKFCVTNY	EDIKSQIQSA
LEEMRDNPMR	MDKPRIYHLD	VAAMPNIML	SNRLQPDSSV	DEATCAVCDY	NRPGKTCDRR
MTWAWRGEYY	PAQRDEYNME	MFPPRRPGLP	KRRFVELGEA	EQAALLHKRL	GDYSRKVYKK
TKETRVVERE	AIICQRENPF	YVETVRTFRD	RRYEYKGLHK	TWKKNLDSVA	DIEEAKKMIL
AHKCILNSFY	GYVNRKGARW	QSMEMAGITC	LTGAHIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPDVFPEDF	TFQVSKGKPL	KFSYPCTMLN	HLVHDKFTNH	QYHDLKETG	EFKVHSENSI
FFELDGPYLA	MILPSSKEED	KLLKKRYAVF	NYDKSLAELK	GFEVKRRGEL	QLIKIFQSEI
FDKFLLGSTT	EECYAAVAEI	ANQWLDILFS	RANMSDDEL	FELIAENRSM	SRTLAEYAGQ
KSTSISTAKR	LAEFLGEQMV	KDKGLACKFI	ISAKPIGAPV	TERAVPVAIF	SADEAVKRTY
LRRWLKDNSL	STFDLRSILD	WDYYIERLGS	VIQKLITIPA	AMQKVSNPVP	RIRHPDWLFK
RVAALDDKFH	QHKVTDFFPG	RFALWLSTGS	DLVSITLRIP	REFYINLKRA	PGYLSEQVAR
TLPRNRPSGS	LFAELTNNTN	VDGVYELETL	NKARDDGVDL	TGLEHKYFLF	YHASSGSSSV
NVFALFTPRG	ARLHVVDPAT	RRQPVSYHKT	ESAAQKAVSR	DLGLLEKEQY	VLVISSAKGM
SWHQAAPKV	ERFPVMMTS	SLRSTHSLN	WHVEVVKRMC	TRYLAAGPWL	HSLVGQATYY
ALFFADVDF	RRLKEDMIL	WWSSGSRPDL	GGIEDDVRTT	EEVINPQLVV	PGCYDNVCLS
VQVRNLAINS	VLQSSLVNEM	EGAGGSTAFD	SAQSSTTLGD	AAVSPLTFNV	IKSMVRSWLL
DKAGPADLVI	SHFWRWMSSI	AAQMHDPLGM	RFVHGLMHKT	FMQMLAEFKR	LGSNVVAADF
GSILLVTSKP	PGTAYAYGTY	LKGAVTSHEL	FKHMYLEIDR	YYDYLVMYDN	ANQAAVVCQN
PQEVEPPKSL	AVTMAWNIE	FLPPAVQRIF	HESVNFFMIS	MYRIKRERNK	EMEAVRSFIA
TRLTRKMLRS	VFPVLPGSHL	TLHNPALFV	KAVCAVFALA	KDFKTEIGIL	KRNMLDLVGV
REFAEEAVFR	NPCEPFTLTM	VICPCCADMR	DMDFCRDVDL	LPWQCAQCGY	DFDKQEIDFA
LVSIIERLEA	SFTTQDLRCS	KCKQVRSNDV	SKHCCSGEWR	YILSKAEFRR	RLRTAVNVAT
VHNLPLL					
>EG					
GHRMYLQIL	FKNVTDLLAV	RRDIMPLALA	NSAKMNAVDA	YAEVVDPREC	IIDIREYDVP
YYLRVAMDNE	IRVGLWYTIT	FSAGKPTVSR	VARAEPVMA	YDIETTKAPL	KFPDQIDQV
MMISYMIDGQ	GFLITNRDIV	SEDIEDFEYT	PKEGYEGPFT	VFNEPDEEAT	IKRFFQHIQT
AKPTVMATFN	GDFDFPFPLY	ARSKVHGIDM	LLETGFAKDN	EDEFKSNTCA	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPLELDPCL	MTPYAMEQPQ	TLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLNPDEVL	RKGTGTLCET	LLMVEAFRGG	VIMPNRHEDP	YGNLFEGHLL
ASETYVGGHV	EALGAVFRS	DIPTHFKIKP	EACQLIDDL	RALKFCVTNY	DDVKGQIQAA
LEEMRDNPMR	MDKPRIYHLD	VAAMPNIML	SNRLQPDSSII	DEATCAVCDY	NRPGKTCDRR
LPWAWRGEFF	PAQRDEYNME	WFPPKRVGLP	KRRFIELSES	EQSALLHKRL	GDYSRKVYKK
TKETRIVERE	AIVCQRENPF	YVDTVRRFRD	RRYEYKGLHK	TWKKNMDALA	DIEEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGAHIIQMA	RALVDQIGRP	LELDTDGIWC
MLPDVFPEDF	TFEVSKGKPL	KFSYPCTMLN	HLVHDKFTND	QYHDLKETG	EYAIHSENSI
FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NFDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGSTT	EECYAAVAEI	ANQWLDVLF	HADTLNDEEL	VDLIAENRSM	SRTLAEYAGQ
KSTSISTAKR	LAEFLGEQMV	KDKGLACKFI	ISAKPIGAPV	TERAVPVAIF	SADEAVKRTY
LRRWLKDNSM	TTFDLRSILD	WSYYIERLGS	VIQKLITIPA	AMQKVSNPVP	RIRHPDWLHK
RVAALDDKFQ	QHKVTDFFPG	RFQLWLSTGS	ELVSIALRIP	REFYINLKTA	PGYLSEPAVR

TLPRNRPCHS	LFAQLTNNPA	VDGVYELETL	NKARAEGVDL	STLEHKYIFL	FHASSSSASV
NVFALFMP TG	VRLHVVDPAT	RRQPVSYHKT	EGAAQKAVSR	DLGLVEKESY	ILVISSSKSM
SWHQSAIPKI	ERFPVVMMS	SLRSTHALLN	WQVEVVKRMS	TRYLAAGPWL	HDSVEHATYY
ALYFADLDFA	RRLVKEDMVL	WWSSGSRPDL	GGIEDDIRTT	EELANSQ LTY	PGCYDNVCLS
VQIRNLAINS	VLQSSLVNEM	EGAGGSTAFD	SAQAATSLGD	AAVSPLTFAV	VKSMVKS WLL
DKAGPADLVV	NHFWRWMTSM	SSQMFDPGLM	HFVHGLMHKT	FMQLLAEFKR	LGSNVVSADF
GSILLVTSKP	PGTAYAYATY	ITSAVTSNEL	FKHIHLETDR	FYDYL VFMDN	ANQAAVVCQN
PREVEPPQSL	AVTMAWNIET	FLPTALQRHF	HDSVNYFMVS	MYRIKREKNK	EADAVRTFIA
QRLTRMLRA	VFPVLPGSHL	TMTNPALEFV	KFVCAIFALA	KDFKTEIGIL	KRNMLDLVGV
REFADDAVFR	NPCEPFVLSM	VICPYCADVR	DMDFCRDADL	LPWQCAQCDY	DFDRQEIDFA
LVSIVERLET	AFTTQDLRCA	KCKQVRSDNV	SKHCCSGEWR	YSLSKAELRR	RLRIAVNVAT
VHNLVLL					

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GHRRLYLQLC	FRNVSDLLTV	RREILPLALA	NSKKMDAVDA	YAEVVDPRES	IIDIREYDVP
YYLRVAIDND	IRVGLWYAVT	FIAGQPSFER	VKRADPVVMA	YDIETTKAPL	KFPDQAVDQV
MMISYMIDGQ	GYLITNREIV	SEDIEDFEYT	PKEGYEGPFT	VFNEKDEVAT	LRRFFEHVKA
AKPTVMATFN	GDFFDFFFLK	ARSEIHGIDM	FLEIGFAIDN	EEEFKSRTCA	HLDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDPEL	MTPYAIEQPQ	VLAQYSVS DA	VATYYLYMKY
VHPFIFSLCN	IIP LNPDEVL	RKSGTLCET	LLMVEAYRGE	IIMPNRHEDP	HGNMFEGHLL
ASETYVGGHV	EAEAGVFRS	DIPTHFKVVP	EAVQLIDQLD	AALTFCVTNY	DEVKGKIQSA
LEEMRDNPMR	FDNPLIYHLD	VAAMPNIML	SNRLQPD SVV	DESVCAVCDY	NRPDKTCDRR
MTAWARGEYF	PAQRDEFNME	AFPPKRP GDP	KRKFDVLPAA	EQTALLHKRL	GDYSRKVYKK
TKD TKVVYRE	SIICQRENPF	YVDTVRRFRD	RRYEYKGLLK	TAKKNLDSMA	QQDEGKKLIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPGIFPENF	TFQVNKGKSV	AFSYPCTMLN	HLVHAQFTNH	QYHDYNKDSG	RYDIHSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NEDGSLAELK	GFEVKRRGEL	QLIKIFQTQI
FERFLLGTTT	EECYAAVAEV	ADRWLDVLFT	KADSLSDEEL	VELIAENRSM	SKTLAEYGAQ
KSTSISTARR	LAEFLGDQMV	KDKGLACKFI	ISQKPIGAPV	TERAVPVAIF	SAEESVKRTY
LRKWLKDNSL	ANFELRSILD	WNYIIERLGS	VIQKLITIPA	AMQKVSNPVP	RIRHPDWLHR
RVAALDDKFQ	QHKMTDFFPG	HFTMWLSMDN	DLIPVSLRIP	REFYLN LKQM	ESYSHEKLVR
TLPRSQPCLN	LFINLVNPN	VDGVYELKNL	NRARDIGFDL	KQLERKYIFL	FHSSAATAPV
HVFGFLFYPTG	VHLHIVDPAT	RRQPTAYHGN	DTTALKAISR	ELGLIENRSF	ALI ISSGKEL
SYIETQISKL	SRFPVFAMPS	NRASHSLDFP	WQADVAKKML	SRYLVAGGWL	LRTWDQAVYF
PLFMADIEFA	RRLQKQDMVL	WWSPNEQPDL	GGSEDDRRAG	EELVSPEFHA	PGCYSNVCLS
ISVRNLAVDA	VLQSSIVNEL	EGSGGSTAFD	SAQANITLGD	SSVSPSVFAI	LKNMVKTWLL
DKASPADVAV	GHFWRWICST	AAQMFEPNLQ	RFIHGLMRKT	FIQLLAEFKR	LGSNVVFADF
SRILLVTSKP	PGTAYAYATY	ITSAVMSHEL	FKHVDLQSEQ	YYNYLVYMDH	VNCGAIVCKD
PLATESAKGL	VVSMDWNIER	FLPPAVQQHF	TEVVKTFIVD	MYKIKQMKQK	ELEACRTYIT
QRLTRKMFRA	VPILPGSHL	NLTNPPLFV	KSACAVFGLA	KEFSIEVGIL	KRNLLDLVGV
KEFADEAIFR	NPCEPLKLPM	VICQHCNHIR	DFDFCRDADL	FPWKCEPCDC	EYDRLAIEFA
LIDL IHRLEA	NFAPQDLKCG	KCKQIRADNV	SKHCCSGTYQ	FTVSPA EFRR	KLRTIVNVAT

VHNMQKL

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GHRRLYLQIC	FKNVSDLLAV	RRDIVPLAVE	NGAKLNAVDA	YAEVVDPREC	ILDAREFDVP
YYLRVAIDNE	MRVGLWYTVT	FVAGQPQFDR	VKRADPVVMA	YDIETTKAPL	KFPDSAIDQV
MMISYMIDGQ	GYLITNREIV	SEDISDFEYT	PKEGYEGPFT	IFNEPDEAAT	IMKFFHHIQT
AKPTVMATFN	GDFFDFFFLC	ARAKAHGIDM	FLETGFAIDP	EDEFKSRTC V	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YDPIELDPEL	MTPYALEQPQ	TLAQYSVS DA	VATYYLYMKY
VHPFIFSLCN	IIP LNPDEVL	RKSGTLCET	LLMVEAYRGN	IIMPNRHEDA	HGNMFEGHLL
ASETYVGGHV	EAEAGVFRS	DIPTHFKIVP	EAAQLIDQLD	DALTFCVLNY	DEVKAEIQAA
LEQMRDNPML	FEKPLIYHLD	VAAMPNIML	SNRLQPD SVV	DESVCAVCDY	NRPGKQCDRR
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TKETKVVNRE	SIICQRENPF	YVDTVRRFRD	RRYEYKGLLK	TWKKKLD SIA	EVDEAKKLIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC

MLPGTFFPENF	KFKLSNGKPL	QVSYPTMLN	HLVYAQFTNH	QYHDLDPETG	SYKVHSENSI
FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGNTT	QECYGAVAEV	ADRWLDVLF	HADTLSDEEL	VDLIAENRSM	SKTLAEYAGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISAKPIGAPV	TDRAVPVAIF	SAEESVKRTY
LRKWLKDSSL	ANFELRSILD	WEYYIERLGS	VIQKLITIPA	AMQKVANPVP	RIRHPDWLHR
RVVASDDKFK	QHKMTDFFRG	KFTMWLSVNS	ELIPITLRIP	REFYLNFKTP	VPYLRERVIR
TLPRERPCLH	LFMAEINNPN	VDGVYELQTL	NKARDNGIDL	TQVDHKYLFL	YHAYSPSAPL
HVYALFLPNG	VKLHIVDPAT	RRQPTDYHGS	AAAALKAISR	ELGTLENRSF	VLLLSSAKDF
TYFESMVPKL	VKFPVLRPLG	GKAAHALDFP	WQSGIAKKMF	ARYFSISPWL	RRSIQQASYF
PLFLCDIDLA	RRFAAQDMLL	WWSAVDRPDL	GGLEDDLQLS	EETTNPFLT	PGMYSNVCLN
IQVRHLAIDA	VLQSAVVNEL	EGSGGTAFD	SAQPNVTLGE	ANLSPQTFAT	LKQMVRAWLL
DKACPSSLTI	DHFWRWISTT	SSRMYEPSVQ	KFVHGLMRKT	FIQLLAEFRR	LGSNIVCADF
SRIVVVTSKP	PGTAYAYATY	ITTAVTSQEL	FKHIHLRTDQ	FYDFLLFMDP	ANQGILCED
PLAVEPTDQL	AVFSSWNIKK	FLPAAVQDKF	RSVIKYFIVE	MFKIRSSKQK	ELDASKNFIM
QRLTRKMLQT	VFPTLPGSHL	NLTDVTLFV	KFTCAVFLA	KEFQIEVGLL	KRNLLLELVGV
REFADAAAFK	SPCDPLKLSM	VTCKYCDHIR	DFDFCRDEDL	FPWYCSECGC	EYDKGVIEYS
LLQVLWRLER	SFTEQDLRCG	KCKQIQSDNV	SKYCCSGSYQ	LTVTKADARR	KLRTMINVAI

>RF

GHRRLYLQLC	FRNVSDLLTV	RREVVPALALA	NGAKLDAVDA	YAEVVDPRDA	IVDVREFDVP
YYLRVAIDND	IRVGLWYTVS	FVAGQPQFER	VKRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYMVDGQ	GFLITNREIV	SEDIDDFEYT	PKEGYEGPFT	VFNEADEAAT	ITRFFQHIQT
AKPTVMATFN	GDFFDFFFLC	ARAKVHGIDM	FVETGFAIDS	EDEFKSRTCA	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YHPIELDPEL	MTPYAMEQPQ	ILAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLNPDV	RKSGTLCET	LLMVEAYRGE	IIMPNRHEEE	HGNMFEGHLL
ASETYVGGHV	EALAGVFRS	DISTHFKIEP	SAAQLIDELD	AALSFCVTNY	DDVKSQIQSA
LEQMRDSPLR	HDKPLIYHLD	VAAMPNIML	SNRLQPDSVV	DESVCAVCDY	NRPGKTCDRR
MTWAWRGEYF	PAQRDEYNME	WFPPKKPDGP	KRRYTDLAPA	EQTALLHKRL	GDYSRKVYKK
TKDTKVVNRE	SIICQRENPF	YIDTVRTFRD	RRYEYKGLLK	TWKKNLDAVA	EVDEAKKMVL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPGIFFPENF	KFQLKNGKSV	AFSYPCTMLN	HLVHAKFTNH	QYHDLDTRETG	TYAVHSENSI
FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	EECYAAVAEV	ADRWLDVLF	KADTLGDDEL	VELIAENRSM	SKTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISAKPIGATV	TERAVPVAIF	SADESVKRTY
LRKWLKDNSL	ANFDLRSILD	WDYYIERLGS	VIQKLITIPA	AMQKVSNPVP	RIRHPDWLHR
RVAAIIDDKFT	QHKLTDFFRG	RFTLWLSVNN	DVVPVKLRIP	REFYLNFKSE	QYYSRERVIR
TLPRDRPCLH	LFVNEMNNPN	VDGVYELQTL	NRARDHGVEL	EQLIRKYVFL	YHAFSPSSPI
NVFALFMPNG	VKLHIVDPAT	RRQTTDYHGN	EATALKAVSR	DLGVMENKGY	TLVLSSVKEL
GHFERSVPKL	SKFPVLCMPS	NRAGHALDFP	WQSNVGKKVL	TRYFHLAPWL	QRVVAQAAYY
PLFLCDMEFS	RRLKQDMVL	WWSAGEKPD	GGLEDDMHAT	EELVNPEFVS	PGCYSNVCLS
VQVRNLAINS	ILQAAIVNEL	EGSGGTAFD	STQAAVTLGD	SSMSPQTFAT	LKAMVKTWLL
DKASPSHLTI	EHFWRWISSS	GAHMFDP	RFVHGLMRKT	FIQLLAEFKR	LGSNVVYADF
SRIVLVTSKP	PGTAHAYATY	ITSAVTSHEL	FKHVLLRTDQ	FYDFLLFMDP	ANQGGVVCED
PLALEPPEQL	AVFMSWNINK	FLPPAVQDRF	RRIVRYFLVE	MYKIRRSKVK	EMDATRSFIA
QRLTRKMLQT	VFPLLP	HLTDPALFV	KFTCAAFALA	RDYQIEVGLL	KRNVDLDLVGV
KEFSDHAVYH	NPCDALKLSM	VTCKYCDNLR	DFDFCRDEDL	FPWFCSEDC	EYDRVAIEFA
LIQIVHRLER	SFAQQDLRCS	RCKQIQSDNI	SKHCCSGSYQ	LTIPKADVRR	KLRTIVNVAI

AHNLSRL

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GHRRLYLQLC	FRNVSDLLTV	RREVVPALALA	NGAKLDAVDA	YAEVVDPRDA	IVDVREFDVP
YYLRVAIDND	IRVGLWYTVS	FVAGHPQFER	VKRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYMVDGQ	GFLITNREIV	SEDIDDFEYT	PKEGYEGPFT	VFNEADEAAT	IMRFFQHIQT
AKPTVMATFN	GDFFDFFFLC	ARAKVHGIDM	FVETGFAIDS	EDEFKSRTCA	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YHPIELDPEL	MTPYAMEQPQ	ILAQYSVSDA	VATYYLYMKY

VHPFIFSLCN	IIPLNPDV	RKSGTLCET	LLMVEAYRGE	IIMPNRHEEE	HGNMFEGHLL
ASETYVGGHV	EAEAGVFRS	DISTHFKIEP	SAAQLIDELD	AALSFCVTNY	DDVKSQIQAA
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MTAWARGEYF	PAQRDEYNME	WFPPKKPDGP	KRRYTELAPA	EQTALLHKRL	GDYSRKVYKK
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FFELDGPYRA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGTTT	EECYAAVAEV	ADRWLDVLF	RADTLGDDEL	VELIAENRSM	SKTLAEYGGQ
KSTSISTAKR	LAEFLGDQMV	KDKGLACKFI	ISAKPIGATV	TERAVPVAIF	SADESVKRTY
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RVAADDDKFT	QHKLTDFFRG	RFTLWLSVNN	DVVPVKLRIP	REFYLNFKSE	HLYTRERVIR
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NVFALFMPNG	VKLHIVDPAT	RRQSTDYHGN	EATALKAVSR	DLGVMENKGY	TLVLSSVKEL
SHFERSVSKL	SKFPVLCMPS	NRAGHALDFP	WQSNVGGKVL	TRYFHLAPWL	QRVVSQAAYY
PLFLCDVEFS	RRLKQDMVL	WWSAGEKPD	GGLEDDMPAT	EELINPEFVS	PGCYSNVCLS
VQVRNLAINS	ILQAAIVNEL	EGSGGTAFD	STQAAVTLGD	SSMSPQTFAT	LKAMVKTWLL
DKASPSHSTI	EHFWRWISSS	GAHMFDP	RFIHGLMRKT	FIQLLAEFKR	LGSNVVYADF
SRIVLVTSKP	PGTAHAYATY	ITSAVTSHEL	FKHVLLRTDQ	FYDFLLFMDP	ANQGGVVCED
PLALEPPEQL	AVFMSWNINK	FLPPAVQDRF	RRIVRYFVVE	MYKIRRSKMK	EMDATRSFIA
QRLTRRMLQT	VFPLLP	HLTDPALFV	KFTCAAFALA	KDYQIEVGLL	KRNVLDLVGV
KEFSDQAVYH	NPCDALKLSM	VTCKYCDNLR	DFDFCRDEDL	FPWFCSEDC	EYDRVAIEFA
LIQIVHRLER	SFAQQDLRCS	RCKQIQSDNI	SKHCCSGSYQ	LTIPKADVRR	KLRTIVNVAI
AHNLSRL					
>PN					
GHRRLYLQLR	FRNVSDLLAV	RRDIVPLAQA	NGAKLNAVDA	FAEVVDPRDA	IIDVREYDVP
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MMISYMIDGQ	GFLITNREIV	SEDIEDFEYT	PKEGLDGPFT	VFNEADEAAT	IMRFFRHIQE
VRPTVLATFN	GDFDFPF	ARAKTHGIDM	FLEIGFAKDS	EDEFKSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YDPIELDPEL	MTPYAIEQPQ	TLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLCPDEV	RKGTGTLCET	LLMVEAYRGH	IIMPNRHEDP	HGNMFEGHLL
SSETYVGGHV	EAEAGVFRS	DIATHFKIVP	AAAQLIDELD	AALSFCVTNY	NEVKSQIQSA
LELMRDNPLR	FDKPLIYHLD	VAAMPNIML	SNRLQPDVSV	DESVCAVCDY	NRPGKTCDRR
MTAWARGEYF	PAQRDEYNME	GFPPKRTGDP	QRRFTDLSPS	EQSALLHKRL	GDYSRKVYKK
TKETRVVQRE	TIICQRENPF	YVDTVRRFRD	RRYEYKGLHK	TWKKKLDAVA	EVEEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQLA	RQLVEQIGRP	LELDTDGIWC
MLPGVFPENF	KFELKNGKTI	GFSYPCTMLN	HLVHAKFTNH	QYHDLDPETG	EYKVHSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGSTT	QECYSAVAEI	ADRWLDVLF	KAELSDDEEL	VELIAENRSM	SKTLAEYAGQ
KSTSISTARR	LAEFLGDQMV	KDKGLACKFI	ISAKPMGAPV	TERAVPIAIF	SAEESVKRTY
LRKWLKDNSL	ANFDLRSILD	WEYYIERLGS	VIQKLITIPA	AMQKVPNPVP	RIRHPDWLHR
RVIALDDKFK	QHKVTDFFRG	RFTMWLCVNA	ELIPVTLRIP	REFYLNFKTP	EYYTRERVIR
TLPRDRQCLH	LFTNEINHPN	VDGAYELQTL	NRLRDDGINL	VQLERKYLFL	YHAYAPTSPV
HVYALFLPNG	LKLHIVDPAP	RRQPTDYHSN	EIAALKALSR	ELGTLESKSY	TIVLSSAKDF
IYFSGMVPKL	SKFPVLRMPA	TKASHALDFP	WQSVVAKKMF	VRYLAFGSWL	HRAISQAAYY
PLFICDIEMA	RRLVAQDIVL	WWSANEKPD	GGSEDDSPPT	EELNNPEFLA	PGLYSNVCLS
VQVRNLAIDA	VLQSALVNEL	EGSSGATAFD	LAQPNVTLGD	SNLSPHTFAV	LKQMVRTWLL
DKACAASITL	DHFWRWVSSS	SSRMYEPSIQ	RFVHGLMRKT	FIQLLAEFKR	LGSNVVYADF
SRIILVTSKP	PGTAHAYATY	INSAVTSNEL	FKHIYLRDTR	FYDFLLYMDP	ANNGAVVCED
PLALVPPKQL	SISSNWNICK	FLPPAVQDYF	KNVVRVYFVQ	MAKIKREKVK	EMDQTRAFVA
QKLTRKMLHY	VFPVLP	HMTDPALEFI	KFSCAVFGLA	QEYQIELGIL	KRNLLLELVGV
KEFSDLAIFR	NPCDPLKLSM	VTCTCFDHIR	DFDFCRDEEL	LLWYCPEC	EYDRTAIEFS
LIQVLYRLER	NFTQQDLKCS	RCKQIQSDNM	SKHCCSGNYQ	LMVSKAEMKR	KLRTIINVAI
THGLSRL					

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GHKRLYLQLC	FRNVSDLLSV	RREIVPLATE	NGSKLNAVDA	YAEVVDPRDC	IIDAREFDVP
YYLRVAIDNE	IRVGLWYAIT	FVAGHPQFDR	VKRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYMIDGQ	GFLITNREIV	SEDIEDFEYT	PKEGLEGPFT	IFNEADEAAT	IMRFFQHIQE
VKPTVMATFN	GDFDFPFPLY	ARSKVHGIDM	FLETGFTKDS	EEYKSRTC	HMDCFRWVKR
DSYLPQGSQG	LKAVTTAKLG	YNPIELDP	MTPYAMEQPQ	TLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLCPDEVL	RKGTGTLCT	LLMVEAFRGH	IIMPNRHEDE	HGNMFDGHL
ASETYVGGHV	EALVAGVFRS	DIATHFKIVP	EAAQLIDELD	AALTFYVTNY	DEVKAQIQSA
LEEMRDNPLR	FDKPLIYHLD	VAAMYPNIML	SNRLQPDVSV	DESVCAVCDY	NRPGKKCDRR
MTWAWRGEYF	PAQRDEYNME	MFPPRKPGGP	QRRYVDLTQT	EQTALLHKRL	GDYSRKVYKK
TKETKVVNRE	SIICQRENPF	YVDTVRRFRD	RRYEYKGLHK	TWKKTLDVA	EVDDAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQLA	RQLVEQIGRP	LELDTDGIWC
MLPGVFPENF	KFKMSNGKTL	PISYPCTMLN	HLVHAKFTNH	QYHDLDPETG	EYMHVHSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FERFLLGTTT	QECYAAVSEI	ADRWLDVLF	KADNLSDEEL	VELIAENRSM	SKTLAEYGGQ
KSTSISTAKR	LAEFLGNQMV	KDKGLACKFI	ISAKPIGAPV	TERAVPIAIF	SAEESVKRTF
LRKWLKDNSL	ANFELRSILD	WDYYIERLGS	VIQKLITIPA	AMQKVPNPVP	RIRHPDWLHR
RVAALDDKFK	QHKVTDFFRS	RYTMWLSVNS	DLVPVTVRIP	REFYLNFKTA	EHYSRERVVR
TLPRDKPCLH	LFMNEINPN	VDGAYELQTL	NKARDDGVDL	SQVDRKYIFV	YHAFSPSAPV
NVFAIFLPDG	VRLHVVDPAS	RRQPTDYHSN	EATALKAISR	ELGTLENKSF	TVVISSAKDL
TYFTSAVPKL	GKFPVLRMP	SRAGHALDFP	WQANVAKKMF	SRYLSFAPWL	KRAITQAAYY
PLFLCDIELA	RRVVAHDMVL	WWSNGERPDL	GGLEYDLPPT	EELISPEFLT	PGLYSNVCLL
IQVRNLDAID	VLQSAVVNEL	EGTGGTTAFD	SSQPNVSLGE	SNLSPQTFSV	LKQMLKTWLL
DKASPSSITL	DHFWRWVSSS	ASRMYPEPSIQ	RFVHGLMRKT	FIQLLAEFKR	LGSNVVYADF
SRIILVTSKP	PGTAHAYATY	ITTAVTSHEL	FKHIYLRDTR	YYDLLLYMDP	ANFGGVVCE
PLALEPPVKL	SILSCWNIKN	FLPPAMQDHF	RSIIRLFISQ	MAKIKRDKLR	EIDGGKAFIA
QKLTRKLLQI	VFPVLPGSYL	HLTHPALEFI	KFTCAVFLA	QDLQIEIGIL	KKNLLELIGV
RQFADDAIFR	NPCDPLKLSM	VTCKYCDHIR	DFDFCRDDEL	LPWYCECEG	EYDRAAIEFS
LIQVLHRLER	NFAQQDLRCA	KCKQIQSDNV	SRHCCSGSYQ	LTIAKTDVRR	KLRTIVNVAK

VHNLGRL

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GHRRLYLQLC	FRNVSDLLAV	RREIVPLAME	NGAKLSAVDA	YAEVVDPRDA	IIDVREFDVP
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MMISYMIDGQ	GFLITNREIV	SEDIDDFEYT	PKEGLEGPFT	IFNEPDEAAT	ITRFFQHFQE
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DSYLPQGSQG	LKAVTTAKLG	YDPIELDP	MTPYAMEQPQ	TLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLNPDV	RKGTGTLCT	LLMVEAYRGH	IIMPNRHEDP	HGNMFEGHLL
SSETVYGGHV	EALVAGVFRS	DIPTNFKIVP	EAAQLIDELD	AALTFCVVNY	EQVKGQIQAA
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MTWAWRGEYF	PAQRDEYNME	QFPAKRPGGP	QRRFNELSPA	EQSALLHKRL	GDYSRKVYKK
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AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC
MLPEVFPENF	KFQLANGKTI	GFSYPCTMLN	HLVHAKFTNH	QYHDLDPETS	QYKVHSENSI
FFELDGPYKA	MILPSSKEED	KLLKKRYAVF	NDDGSLAELK	GFEVKRRGEL	QLIKIFQSQI
FEKFLLGSTT	QECYAAVAEI	ADRWLDVLYS	RAESLSDEEL	VELIAENRSM	SRTLAEYAGQ
KSTSISTARR	LAEFLGDQMV	KDKGLACKFV	ISAKPIGAPV	TERAVPIAIF	SAEESVKRTY
LRKWLKDNSL	ASFDLRAILD	WDYYIERLGS	VIQKLITIPA	AMQKVPNPVP	RIRHPDWLHR
RVVALDDKFK	QHKVTDFFRG	RFTMWLCVNA	ELIPVTLRIP	REFYLNFKAP	EHYIRDRVIR
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HVYALFLPNG	VKLHVVDSAT	RRQLTDYHSN	ETTALKAISR	ELGALEKKS	TIVLSSAKDF
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PLFFCDIELA	RRLSAQDMVL	WWSAGEKPD	GGFENDMPPA	EELTNPEFLS	PGLYSKVCLS
IQVGNLAIDS	VLQSALVNEL	EGSGGTAFD	SAQPNVTLGD	SNLSPQMFAI	IKQMVRAWLL
DKASPVSVTL	DHFWRWVSSS	SAMMYEPSVQ	RFIHLMRKT	FIQLLAEFKR	LGSNVVYADF

SRILLVTSKP	PGTAHAYATY	ITTAVTSHDL	FKHIYLRTER	FYDFLLYMDP	ANYGAVVCED
PLAIEPPKQI	AISSTWNINK	FLPPAVQGHF	RTVVRYFIAQ	MAKIRREKIK	EIDESKVFIA
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LIQHLLHRLER	NFVQQDLRCA	RCKQIQSDNV	SRHCCSGNYQ	LTTSKADVRR	KLRTIINVAI
THNLTRL					
>OS					
GHRRLYLQLC	FRNVSDLLSV	RREIVPLAVE	NGAKLNAVDA	YAEVVDPREA	IIDAREFDVP
YYLRVAIDNE	IRVGLWYTVS	FVAGQPQFDR	VKRADPVVMA	YDIETTKAPL	KFPDQAIQV
MMISYMGDQ	GFLITNREIV	SEDIDDFEYT	PKEGLEGPFT	IFNESDEAAT	IMRFFQHIQE
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DSYLPQGSQG	LKAVTTAKLG	YDPIELDP	MTPYAMEQPQ	VLAQYSVSDA	VATYYLYMKY
VHPFIFSLCN	IIPLNPDEVL	RKGTGTL CET	LLMVEAFRGH	IIMPNRHEDP	HGNMFEGLL
SSETYVGGHV	EAEAGVFRS	DIATHFKIVP	EAAQLIKELD	AALNFCVVNY	EQVKNQIQSA
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TRETKVVNRE	TIICQRENPF	YVDTVRRFRD	RRYEYKGLHK	MWKKKLDVVT	EVEEAKKMIL
AHKCILNSFY	GYVMRKGARW	HSMEMAGITC	LTGATIIQMA	RQLVEQIGRP	LELDTDGIWC
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KSTSISTARR	LAEFLGDQMV	KDKGLACKFI	ISAKPIGAPV	TERAVPVAIF	SAEESIKRTY
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RVVALDDKFK	QHKVTDFFRG	RFTMWLCVNS	DLIPVTLRIP	REFYLNFKVP	EHYTRDRVIR
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HVYALFLPSG	VKLHIVDPAT	RRQPSDYHSN	EATAKKAISR	ELGMLENKSF	TILLSSAKDF
VYFSSMVPKI	NKFPVLRMPS	TKVSHALDFP	WQDVVAKKML	LRYFSLAPWL	RRTITQAAYY
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VQVRNLAVDA	VLQSALVNEL	EGSGGTATFD	SAQPNVTLGD	SSISPQTFTT	LKQMVRTWLL
DKASSSSLTL	DHFWRWVSSS	AAQMYEPSIQ	RFVHGLMRKT	FIQLLAEFKR	LGSNVVYADF
SRIVLVTSKP	PGTAHAYATY	IITAVTSHEL	FKHVYLR TDQ	FYDFLIYMDP	ANHGAVVCED
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REFSDQAI FR	NPCDPLKLSM	VTCRYCDYIR	DFDFCRDNEL	LPWYCPECQG	EYDKTAIEFA
LIQDLHRLER	NFAQQDIRCS	RCKQIQSDNV	SRHCCSGRYQ	LVIGKADVRR	KLRTMINVAI
THNLSRL					

06-ARID domain

>AS					
APAAGKLDFT	AIKTSSPRPF	ALEDPCVFYP	SLEEFKDPMK	YMQVVGPKAR	DYGICKIVPP
VGWKMPFVTD	TEFRFTTRLQ	RLNSIEASSR	AKLTFLEQLY	RFHSSQGNTN	IAVPTVNYRR
LDLWLLRKEV	QKLGGYDAVK	NKKWGELAQI	MGYNAQGVAA	QLKASYSKVI	LPFENYSDHV
RSALCDGCDA	GYHTFCLDPP	LSAIPRGQWF	CQKCLFGTGD	YGFDEGEEHT	LQSFMMRDLT
FRRLWFASHP	PYSESDVERE	FWRLVQTPFE	TVEVEYGADV	HSTTHGGMPT	PETHPRNPYS
RDPWNVNNVP	ILPESLLRYI	KSDISGMTVP	WTYVGMIFST	FCWHNEDHYT	YSMNYMHWGE
TKTWYGIPGA	DALKFEAAIR	KEAPDLFDAQ	PDLLYQLVTL	MNPARLRDAG	VRVYACNQRA
GEFVVTFPRA	YHAGFNHGLN	FNEAVNFALP	DWLPFGLECV	KRYQEHRKLP	VFSHDELLIT
VTQSHSHSIKT	AVWVLDLRE	MIDRETAQRR	VVRPGLQETL	EEYDPENQYQ	CHVCKAFCYL
AQITCGCVAC	LEHAQLLCGC	RVLRKRFSDE	QLEDIYSKIM	ERASIPTDWQ	AKLQRTLQDS
ARNLRLVLRA	LLAEGERSVF	HLPELLALRK	CVQRANEWVE	VATSFTTRKQ	ANKRDRPERG
LKDVYALLEE	VELLGFDCPE	IETLRRITQS	AEEFKKKARL	TILETQITIG	AGLNMQLEEL
DEMRRIFMRC	KLVRDLLDDI	RSLLVRAKAC	GLTEESKLMK	TLLEKQRIGE	DWVQKVTALL
NLEQKPLPEI	PIDPTVLDRL	KAVRAKARDL	ERQARIMLAP	ELPRPSDALK	LVARAEKDFM
IPVIDELKRS	AEFANDLEEK	CDAVLSKRFR	YGTPFGLFRK	WVAYGHTHLS	FQLHNF EKLD

RQLIAHSQWI	ERLPWYCHSD	AILRDVRDCT	NPDEDHPPSD	EFISCICDRQ	VRPPPPGEAS
DAVQCDHCFA	RFHGACAANG	GSCPFCDHHH	WNGSIHKERN	WHFCFLPTML	VTAPDITKFY
STAWKELEYI	ISRVDRLCVS	IGSFLSFASN	QRPEFLPQVR	HYMRKLFRIQ	FAISPNPDVS
YGLDLAHLHR	ILAGKMHKKR	RRVKIVFQQD	VGPEPADGTQ	CLCKGTVCSR	WHHETCVFFC
PACSIKRNRA	YPYGEVRVRQ	APAEQLRRVQ	LPPNKNALVL	DLIRYSF	
>EG					
PAPAAKLDFS	SIKTESPRPF	GLEDCPAFYP	SMEEFKDPMK	YLQTVAPKAQ	EFGICKIVPP
VGWKMPFVTD	TEFRFTTRLQ	RLNSIEASSR	AKLTFLEQLY	RFHSSQGNSS	IAVPTVNHKR
LDLWLLRKEV	QKLGGYEAVK	NKKWAEELGQL	MGYQSPGLAS	QLKNSYMKII	LPFENYSDHV
RSALCDGCDA	GYHIFCLDPP	LSAIPRGQWF	CSKCLFGTGD	FGFDEGEEHT	LQSFMTDRDT
FRRHWFQAHP	PYSEGDVESE	FWRLVETPFE	TVEIEYGADV	HSTTHGGMPT	LETHPRDPYA
RDPWNVNNIP	ILQDSLLRYI	KSDISGMTVP	WTYVGMIFST	FCWHNEDHYT	YSINYMHWGE
TKTWYGIPGA	DALKFEAAIK	KEAPDLFEAQ	PDLLYQLVTL	MNPSRLREEG	VRVYACNQRA
GEFVVTFPRA	YHAGFNHGFN	FNEAVNFALP	NWLPFGLECV	KRYQEHSKLP	VFSHDELLIT
ITQHSHSIKT	AVWVLDLRE	MIDRETAQRR	AVLPGIQETL	EEYDPENQYQ	CHVCKAFCYL
AQITCGCVAC	LEHAKLLCNC	RVLKRKFSDE	QLEDVFSKVV	ERAAIPSDWQ	AKLQRTLQET
SRPNLRLVLA	LLAEGERSVF	HLPELLALRK	CVQRANEWVE	VATSFTTRKQ	ANKRERPERG
LKDVYALLDE	VELLGFDCPE	IEQLRRIAQT	AEEFRKKARL	TILETQITLG	QGLNMHLDEL
DEMKRIFMRC	RLVRDLLDDV	RQLLNRAKHC	GLADDSKVVL	GLLEKQRAGD	EWCKKVTDLL
ALPKKPLVEI	PIEPTLLSNL	TASRNSARGY	ERQAKFMLAP	ELPRPKDALD	LVHSAEKAFD
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RQLIAHSQWI	ERLPWYCHSD	AILRDVRDCT	NPDETPPQD	EFISCICERQ	VRPPPPGEVS
DAVQCDHCYA	RFHGACATNG	GSCPFCDHNH	WNGSIHKDRN	WHFCFLPTML	VTAPDITKFY
SVSWKELEYI	VARVDRLCVS	IGSFLSFASN	QRLELIPQVR	QYMRKLFRIQ	FAVSPNPEVS
YGLDLAHLHR	MLASKPPKKK	RRVRLVFQPE	VAPDPADGTR	CVCNGAGCSQ	WYHETCVWFC
PICAVKKTRV	YPYAEIRVRQ	TPSEQLRRVS	LAPNKNAIL	ELHRYSV	
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EGWKMPFATD	TEFRFKTRLQ	RLNSIEATSR	AKINFLEALY	QFHKQQGNPR	VTVPTINHTP
LDLWLLRKEV	QKLGGFETVK	EKKWVDIGRQ	LGYTGPGLST	QIKNSYTRVI	LPFEHYQSEG
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TKTWYGIPGE	DAAKFEAAIK	KEAPELFETQ	PDLLFQLVTL	MSPARLKESG	VRIYACDQRA
GEFVVTFPKA	YHAGFNHGLN	FNEAVNLALP	EWLPLGRECV	KRYQEHKKLP	VFSQDELLIT
ITQQSHSIRT	AIWLNDSFKE	MTDQEMEGRR	AVRLGVREIL	EERDAEEQYQ	CVYCKAFCYL
SQVICPCVVC	LEHVKYLCDC	RVLRLRFSDE	ELLNIQSTIA	ARAAIPENWH	SKLTKLLNDS
AKPQLRALRA	LVAEADRINY	PLKELSALRK	CVTRANWVD	VANSFTTRKQ	SRKRERPEKT
LDELYAVLKE	VDNLGFDSE	IALLRNLATQ	AEDFKARASA	LLCDALLAHG	SSLNVNLEEL
YKVENTVLQD	HLIKELLDEI	RQYLARAKAC	DLPPDNKYMK	VLEAKLQAGN	DWDERAASVL
TQPVKTIDEL	PVDPAVLNRI	KATRTRALEF	ERQAKGWLSP	ELPSVQDALR	LVQRAEKEFS
IPAIHDLKRT	ADFAYDLEER	CEAVLKDRYQ	HGSVFDAMDK	WRTYAREHLT	FRLPSFDKLN
AELELHEQWV	KKLPWYCHGR	EILNDVLDYT	KAEDDTPPDD	EFFTCICFDP	VRPPPPGKTS
DAVQCDHCFA	RFHGKCAVNG	GSCPFCDPNH	WNGNIHNERN	YHFCYLPTVL	HNASEITKSY
SEYWEQLKLI	VQHVERLCAV	IGHFLSFASN	QRAEYIPQVR	HYMRKLYKIQ	FAVSPNPEVS
FGLDLAGLHR	ILASRRMKKR	RRPRFLFGQD	IDRQWVDGTR	CICRGQTCQR	KYHTACVFTC
PLCCLRKAKP	YRWADIRVRQ	FSRDIIRIKL	TPPVTPTIFI	DLIQFTP	

>RF

IPVSSKLDMS	SVKTSSPRPF	DLEDCTFYF	THEEFRDPMA	YIKSISDRAR	NSGICKVVP
MGWKMPFVTD	TEFRFKTRVQ	RLNSIEASSR	AKLNFLEALY	RFHKQQGNPR	VTVPTINHKP
LDLWLLRKEV	HKLGGYEAVK	GKKWADLGRL	LGYGPGPLSM	QLRNSYVRVI	LPYEHFSDRV
RNSLCDGCDC	GFHTFCLDPP	LSVIPKGQWF	CDTCLSVTV	FGFDEGEEHS	LSRFQARDLA
FRKMWFESH	PVSEFDVENE	FWRLVQSPHE	TVEIEYGADV	HSTTHGAMPT	LETHPLDPYS
KDGWNLNNIP	IVSDSLLRFI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINFMHWGE
TKTWYGIPGE	DAEKFEAAIR	REAPDLFESQ	PDLLFQLVTL	MNPKRLTSAG	VRVFACNQRA
GEFVVTFPKA	YHAGFNHGLN	FNEAVNFALP	DWLPFGRDCV	QRYQEHKHP	VFSHDELLIT
ITQQSQSIKT	AIWLNDLQ	MTDREMAGR	LLRFKIKEVV	EARDREDQYQ	CAICKAFCYL
SQVICVCVAC	LDHAQLLDC	RTLRLRIPDD	ELLNTQCMIT	SRAAVPGNWQ	AKLRRVLSES
ARPPLRSLRA	LLAEGDRINY	PLPELPTLRK	CVTRANWVD	TANSFTTRKQ	SRKRDRPERG
LADLYALFTE	VGRLGFDTP	IGLLKNLAAQ	AEEVKARAAV	LLCEALIAHG	SSLNVHLDEL
YQVEDIVLQ	QLIKDLLDEV	RHLLARARAC	HLSGDNKYMK	ILEARLQAGN	DWDQRAADVL
AQPIKTIQDL	PVDPAVMIRI	MTARAKALEF	EKMAKAWLTP	ELPRVSDALR	LVHRAEREFS
IPSVHDLKRT	AEFANDLEER	CDRVLKNRYE	HGPMFETMQK	WRSYAREHLT	FILPNFDKLN
KQLDLHQQWI	QKLWPWFCHG	DVLDDVIETT	DPKDDIPPND	EFFTCICFVP	VRPPSNGEQS
DAVQCDHCSA	RFHGLCAKNG	GSCPFCDPHH	WNGSIHKNRS	WHFCYLPTVL	HSAPEVTKSY
SQDWKDLETI	VRRVDRLSGV	IGQFLSSVSS	RRLEMIAQVR	HYMRKLYQMQ	FAVSPNPEVS
FGLDLAGLHR	ILAGPARKKK	RRSKFIFGQD	VDKDWIDGTR	CICRGRTCKR	QYHKACVYVC
PLCCLRKGRS	YRYADVRVKT	HSRELKIRL	PKPVTQTLFV	ELVEYVP	

>RI

IPVSSKLDMS	SVKTSSPRPF	DLEDCTFYF	THEEFRDPMA	YIKSISDRAR	NSGICKVVP
MGWKMPFVTD	TEFRFKTRVQ	RLNSIEASSR	AKLNFLEALY	RFHKQQGNPR	VTVPTINHKP
LDLWLLRKEV	HKLGGYEAVK	GKKWADLGRL	LGYGPGPLSM	QLRNSYVRVI	LPYEHFSDRV
RNSLCDGCDC	GFHTFCLDPP	LSVIPKGQWF	CDTCLSVTV	FGFDEGEEHS	LSRFQARDLA
FRKMWFESH	PVSEFDVENE	FWRLVQSPHE	TVEIEYGADV	HSTTHGAMPT	LETHPLDPYS
NDGWNLNNIP	IVSDSLLRFI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINFMHWGE
TKTWYGIPGE	DAEKFEAAIR	REAPDLFESQ	PDLLFQLVTL	MNPKRLTSAG	VRVFACNQRA
GEFVVTFPKA	YHAGFNHGLN	FNEAVNFALP	DWLPFGRDCV	QRYQEHKHP	VFSHDELLIT
ITQQSQSIKT	AIWLNDLQ	MTDREMAGR	LLRFKIKEIV	EARDREDQYQ	CAICKSFCYL
SQVVCVCVAC	LDHAQLLDC	RTLRLRISDD	ELLNTQCMIT	SRAAVPGNWQ	AKLRRVLSES
ARPPLRSLRA	LLAEGDRINY	PLPELPTLRK	CVTRANWVD	TANSFTTRKQ	SRKRDRPERG
LADLYALFTE	VGRLGFDTP	IGLLKNLAAQ	AEEVKARAAV	LLCEALIAHG	SSLNVHLDEL

YQVEDIVLQE	QLIKDLLDEV	RHLLTRARAC	HLSGDNKYMK	ILEARLQAGN	DWDQRAADVL
AQPIKTIQDL	PVDPVAMIRI	MTARAKALEF	EKMAKSWLTP	ELPRVSDALR	LVHRAEREFS
IPSVHDLKRT	AEFANDLEER	CDRVLKNRYE	HGPMFETMQK	WRSYAREHLT	FILPNFDRLN
KQLDLHQQWI	QKLPWYCHGK	DVLDDVIETT	DPKDDIPPSD	EFFTCICFVP	VRPPSNGEQS
DAVQCDHCSA	RFHGLCAKNG	GSCPFCDPHH	WNGSIHKNRS	WHFCYLPTVL	HSAPEVTKSY
SQDWKDLETI	VRRVDRLSGV	IGQFLSSVSS	RRLEMIAQVR	HYMRKLYQMQ	FAVSPNPEVS
FGLDLAGLHR	ILAGPARKKK	RRSKFIFGQD	VDKDWIDGTR	CICRGRTCKR	QYHKACVYVC
PLCALRKGRS	YRYADVRVKT	HSKELIKIRL	PKPVTQTLFV	ELVEFVP	
>CC					
IQVSPHLDLS	TVKTPSSRPF	GLQNCPEFHP	TTEEFKDPMA	YIRSISDRAK	DYGICKIIPP
EGWRMPFVTD	TKFRFKTRLQ	RLNSIEASSR	AKLNFLEQLY	RFHKQQGNPR	VVVPTINHKP
LDLWLLRKEV	HKMGGYEAVK	GKKWSDLGRT	LGYPGPGST	QLKNSYTRVI	LPFEHYTERA
RNSLCDGCDC	GFHIFCLDPP	LTFIPKEQWF	CFTCLSGTGD	FGFDEGAEHS	LSTFQARDLE
FRKLWFETHP	PVSEYDVEEE	FWRLVASPHE	TVEIEYGADV	HSTTHGAMPT	METHPLDPAS
KDPWNLNNIP	ILPDSLLRFI	KSDISGMTVP	WTYVGMAFST	FCWHNEDHYT	YSINYMHWGE
TKTWYGIPGD	DAEKFEAAIM	SEAPDLFENQ	PDLLFQLVTL	MNPQRLTEAG	VRVFACNQRA
GEFVITFPKA	YHAGFNHGLN	FNEAVNFALP	DWLPLGRDCV	QRYREHRKLP	VFSHDELLIT
ITQQSQSIKT	AIWLVDCLRE	MTEREFEDRK	KVRLGLAEIL	KEEDPEEQYQ	CHVCKAFCYL
SQVVCQCVVC	ADHVELLCEA	MTLRKRFSDE	ELTETLARVS	ERASQPTAWR	SKLARLLTEN
ARPPLRSLRA	LLAEGDRINY	PLPEMPNLRK	CVTRANEWVD	FANSFIIRKQ	SRKRDRPDGR
LDELYAHLRE	VENLGFDCPE	INTLKTALAQQ	AEDTKAKAIA	LLCKRLLLEG	SSLNVLLDEL
NEVEKIVDRE	QLVNELLEEV	RQLLTRARSC	GLPSDNKHMQ	FLEARLREGN	TWEERARAVL
EQPIKTIAEL	PIDPTIIDRL	MAARAKALDF	KKQAKAWLAC	AKSRISEALR	LAARSEKDFS
IPEVTELKKA	AEWALDLESK	SESVLRNRYQ	LEDLFATIKK	WQSHAVNHLR	YSLPTFEKLT
EQVRLHELWL	RDLPWFCHSE	ELLADVLDCCT	RPEDDAPPTD	EYYTCICNHP	VRPPPPGVVS
DAVQCDHCFA	RFHGECANNG	GSCPFCDHHH	WNGTIHKQRS	WHFCYLPMLA	RKAPEISKHY
SRDFRELELI	VHRVDRLSAS	IGQFLSYTSH	QRPEFIPQVR	HYMRKLFRIQ	FAVSPNPDIS
YGLDLAGLHR	ILATRRPKKR	RRPRFTFGQD	VDKNWSGDGTR	CICRGVTCQR	LYHVGCVFQC
PICCLRRGKR	YEYSDVRVRT	FSRELIFKKL	SQPVGRTLFV	ELVNYQP	
>LB					
IQAPSIFDLS	SVKTSSPRPF	GLQDCPEFFP	TAEFEKDPMS	YIRSISERAE	PYGICKIIPP
ENWKMPFVTD	TKFRFKTRLQ	RLNSIEASSR	AKLNFLEQLY	RFHKQQGNPR	VLVPTINHKP
LDLWLLRKEV	QKMGGYDAVK	GKKWSDLGRI	LGYPGPGST	QIKNSYTRVI	LPFEHFCDRA
RNSLCDGCDC	GFHTFCLDPP	LSSIPKEQWF	CFTCLSGTGD	FGFDEGEEHS	LSTFQARDLE
FRRMWFESHP	PVSEYDVEEE	FWRLVQSPNE	TVEIEYGADV	HSTTHGAMPT	METHPLNPYS
KDPWNLNNIP	ILPESLLRFI	KSDISGMTVP	WTYVGMAFST	FCWHNEDHYT	YSINFMHWGE
TKTWYGIPGD	DAEKFEAAIK	CEAPDLFEAQ	PDLLFQLVTL	MNPQRVTEAG	VRVFACNQRA
GEFVVTFPKA	YHAGFNHGLN	FNEAVNFALP	DWLPHYARACV	QRYREHRKLP	VFSHDELLIT
ITQQSQSIKT	AMWLIGSLEE	MTQREMNDRR	KARLGLAEIL	EEEDPEDQYQ	CNICKAFCYL
SQVTCQCVVC	VDHVSLLCEN	QTLRKRFSD	ELLDIQAKVA	ERAAVPSTWR	GKLSKLLLEN
ATPQFRLRLA	LLTEGDRINY	PLPELASLRK	CVTRATEWMD	SANAFILIRKQ	SRKRDRPDQG
LDDLYALIRE	VKNLGFQCNE	IGSLDKLVQD	CEKMKSEASA	LLCRRLLIQG	SSLNVLLDEL
IEIEKIVDRE	QLVTELLEEV	RHLLTRARLC	NLPQDNKHVQ	LLEVRQREGD	DWEGRARNVL
EQPIKTIAEM	PIDPTVLDRL	MTARTKALDF	DKQARAWLSC	EKPRLTDVLR	LASRAEKDFS
ISSIQLLKQT	ADIAADLETR	CEQVLKNHYH	SEDIFETIGQ	WKDYAKDHLK	FSLPCFEKLD
AQLKLHEQWR	RELWPYCHIQ	GLLEDVLECT	RPDDDLPPPTD	EYFTCICNAP	VRPPPPGIVS
DAVQCDHCYA	RFHGECANNG	GSCPFCDHHH	WNGTIHKQRS	WHFCYLPNIL	NNAPEITRHY
SEDYRQLEII	VHGVDRLSAV	IGQFLSYTSN	QRPEYIPQVR	HYMRKLYKIQ	FAVSPNPDVS
FGLDLAGLHR	ILAGRKPCKR	RRPRFTFGQD	IDQDWADGTR	CICRGRTCGK	RYHAGCVFSC
PLCCVRKNKT	YEYSDVRVRT	FSKDLMEFKRL	LLPYKPTLFV	ELVSFQP	
>PC					
IPVSPVLDLS	TVKTPNPRPF	GLTDCPTFRP	TPEQFKDPMA	YIKSIAENAK	SYGMCKIVPP
LGWSMPFVTD	TEFRFKTRLQ	RLNSIEASSR	AKVNFLEQLY	RFHKQQGNPR	VSVPTINHKP
LDLWLLRKEV	HRMGGYEQVR	NKKWADLGRL	LGYPGPGLAT	QLKNSYTRVI	LPYEHFCDHV

RNSLCDGDCD	GFHTFCLDPP	LQTIPRGQWF	CHNCLFGTGD	FGFDEGEEHS	LSSFQARDLE
FRKLWFTSHP	PVSETDVERE	FWRLVQSPNE	TVEVEYGADV	HSTTHGAMPT	SETHPLNTYS
KDPWNLNNIP	ILPESLLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINYMHWGE
TKTWYSIPGD	DAEKFEAAIR	KEAPDLFEAQ	PDLLFQLVTL	MNPQRLREAG	VEVYACNQRA
GEFVVTFPKA	YHAGFNHGFN	FNEAVNFALP	DWLSLGLDCV	KRYQEHRKHP	VFSHDELIIS
ITQRSQAIKT	AIWLNDSLQE	MVERELSARQ	RARLDMGEVL	EEVDTEQYQ	CKICNCFCYL
SQITCSCVTC	IDHADELCKC	QVLRKRFSDS	YLQDTQYAVA	ERAGIPGAW	SKFEKLLNES
ARPPPLRAMRA	LLAEGDRISY	PLKQLHHLRK	CVTRANEWVD	AANSFLVRKP	NRKHDKPDRS
LSDLYALLRE	VQDLGFDSPE	IGQLQQLAKD	AEDTKAKARE	LLCEELMNKG	GALNVQVDEL
TEIEKIVLRE	QLLKELLEDV	RRYINRARAC	ALPADNRHMK	SLENKLRLGT	AWEDRVKAVL
DKPHRALQEL	PIDPNLLDML	KQTSRGRDI	ERQITAWLSG	DKPRVQEVVK	MVTRAEKEFD
IPVVRDMRRT	VDFAVDLETR	CAVLKNRYQ	HNDLFQTMRO	WKSAYKEYLS	FTLPNFERLD
KQLTLHFRWL	EGLPWFCCHK	AILDDVVEST	RPEDDQPPQD	EYFTCICTNP	VRPPAPGQTS
DAVQCDHCFA	RFHGVCAANG	GSCPFCDHQH	WNGTIRKERS	WHFCYLPMTM	MHAPEITKNY
SEDWKQLEIV	VHRVERLVGV	IGQFLAYVGN	QRAEYIPQVR	HFMKRLYKIQ	FAVSPNPETS
YGLDLAGLHR	VLAGQRMKKR	RRPKFTFGQD	IDKDWVDGTR	CICRGRTCSK	TYHGGCVFMC
PLCCLRKNRT	YPYSEVRVKT	FSKEIIMYKL	PPPYTQTLFV	ELVRFTP	

>DS

LPVAPTLDLS	SVKTPNTRPF	GLTDCPTFHP	TPEQFKDPMA	YIASISDTGK	KYGMCKIVPP
MGWNMPFVTD	TEFRFKTRLQ	RLNSIEASSR	AKVNFLEQLY	RFHKQQGNPR	VSVPTINHKP
LDLWLLRKEV	HKLGGFDAVR	DKKWADLGRL	LGYTGPGLAT	QIRNSYNRVI	LPYEQFCERV
RNSICDGCDC	GFHMFCLDPP	LANIPRGQWF	CHSCLFGTGD	FGFDEGQEH	LSSFQARDRE
FRRLWFLSHG	PVTEDDVELE	FWRLVQTPTE	TVEVEYGADV	HSTTHGGMPT	LETHPLDPYS
KDPWNLNNIP	ILPQSLLRYI	KSDISGMTVP	WTYVGMIFST	FCWHNEDHYT	YSINYMHWGE
TKTWYSIPGS	SAEKFEAAIK	KEAPDLFEAQ	PDLLFQLVTL	MNPQRLKEAG	VEVHACNQRA
GEFVVTFPKA	YHAGFNHGLN	FNEAVNFALP	EWLPLGLDCV	KRYQEHRKMP	VFSHDELLIT
ITQQSHSIQT	AMWLNDSLQE	MTDREMDART	RARLQMGVEVL	EETDGDDQYQ	CATCKVFCYL
SQITCPCIVC	IDHVDQLCKC	HVLRKRFSDT	ELQDIQAKVS	ERAAIPGMWR	NKLKLLDES
PCPPLKSLKA	IFTEGERIQH	PLAELNSLRK	CVNKANEWLE	AANAIIRKP	TRKRDKPERS
LDDLYALLSE	VANLGFDAPE	IAQLRNIAQE	AEETRKKARL	LLCRRLLQS	ATLNVTVDEI
VEVDKIVLRE	QLLKDLLEDV	RQLVGRADAC	SLPMEHSQMQ	RLQALYQAGT	TWEDRAQRLL
EKSDRTLEEL	PVDPELLERI	IDLRKKGREY	EKQAKIWLLA	DKPKVQDVVK	LVADAQRDFA
IPAVQDLQRT	VAWAQDLETR	SEAVLNATYS	GKDIFETMQT	WRDYAKKHLT	FSLTNFSKLE
SQLESHNRWI	QSLPWYCHGQ	PILDDVVEAT	RPEDDLPPSD	EYFTCICTTP	VRPPALGQVS
DAVQCDHCFA	RFHGVCAANG	GSCPFCDHQH	WNGTIHKERN	WHFCYLPMTL	MHADPITKHY
SEEWKQLEII	VHRVDRLCGV	IGQFVSFLGN	QRAEYIPQVR	HYMRKLYKIQ	FAVSPNPEVS
FGLDLASLHR	VLAGQRMKKR	RRPKFVFGQD	QDKDWLDGTR	CICRGRTCGK	LYHGGCVFMC
PLCCVRKNRV	YPYSEVRVKT	FSKDIIMYRL	PPPYTQTLFV	DLLRFTP	

>TV

LSVPQMLDLS	SVKTADARPF	GLTDCPTFHP	TPEQWKDPMA	YIASIADAGK	RYGMCKIVPP
AGWNMPFVTD	TEFRFKTRLQ	RLNSIEASSR	AKVNFLEQLY	RFHKQQGNPR	VSVPTINHKP
LDLWLLRKEV	HKLGGYDAVK	DKKWADLGRL	LGYTGPGLAT	QLRNSFSRVI	LPYEQFCDRV
RSSICDGCDC	GFHMFCLDPP	LVNIPRGQWF	CHTCLFGTGD	FGFDEGEEHS	LSSFQARDLE
FRRLWFLSHP	PVTEDDVEKE	FWRLVQSQNE	TVEVEYGADV	HSTTHGGMPT	LETHPLDPYS
KDPWNLNNIP	ILPQSLLRYI	KSDISGMTVP	WTYVGMIFST	FCWHNEDHYT	YSINYMHWGE
TKTWYSIPGC	DAGKFEAAIR	KEAPDLFEAQ	PDLLFQLVTL	MNPQRLKEAG	VDVYACNQRA
GEFTVTFPKA	YHAGFNHGLN	FNEAVNFALP	DWLPLGLDCV	KRYQEHRKMP	VFSHDELLIT
VTQQSQSIQT	ALWLNDPLQE	MTDREMDART	RARRQMNEVL	EETDGDDQYQ	CSVCKVFCYL
SQITCTCIAC	IDHVDQLCKC	HVLRKRFSDT	ELQDIQARVS	ERAAVPTVWR	GKLKRLDDS
PRPPLKGLRN	LFTEGERIQF	PLAELNSLRK	CVNKANEWLE	AANGILIRKP	TRKRDKPDRT
LEDLYALLSE	VENLGFDAPE	IAQLRTIAAE	AEDTRRKARA	LLCEHLILHA	QTLNVLVDEI
VEVEKIVLRE	QLVKELLEDV	RQLMARAHAC	NLPAENMYMQ	RLETLLRAGS	NWEEKAKALL
DKQORTLEDL	PVDPDLLERI	LDLRKKGKDF	EKQAKIWLLS	EKPKVQEVVR	LVTEHDKDFE
IPAVEDLKRT	VDFAQDLEAR	CEAVMRGIYN	PPDVFHTMLQ	WRKYAKEHLT	FSLPNFETLD

KQLTTHFRWL	EGLPWWCHGQ	PILDDVVEST	RPEDDLPPND	EYFTCICITP	VRPPAHGTVS
DAVQCDHCFA	RFHGICAANG	GSCPFCDHHH	WNGTIHKERN	WHFFFLPQLL	LQAPDVTKNY
SEEWKQLEII	VHRVDRLCAV	IGQFLSFAAN	HRVDYIPQVR	HYMRKLYKIQ	FNVASNP DAN
FGLDLAGLHR	ILAGQRMKKR	RRPKFVFGQD	VDKDWNDGTR	CICRGRTCCK	FYHGGCVFMC
PLCCVRKNRV	YPYSEVRVKT	FSKDIVYMRL	PPPYTQTLFV	ELIRFTP	
>FP					
IRVTSFLDLS	TVKTPNRRPF	GLTDCPVFHP	TLEQWKDPLA	YVKSISDNAR	KYGMCKIVPP
AGWSMPFVTD	TEFRFKTRLQ	RLNSIEASSR	AKVNFLEQLY	RYHKQQGNPR	VTVPTINHKP
LDLWLLRKEV	QKQGGYEAVR	NKKWADLGRL	LGYSGPGLST	QMKNYSYRVI	LPYENYRERV
RNSLCDGCDC	GFHMFCDDPP	LGAIPKGQWF	CHTCLMGTGD	FGFDEGEEHT	LSTFQARDLE
FRRLWFKSHP	PVTETDVENE	FWRLVQSQQE	TVEVEYGADV	HSTTHGGMPT	LETHPLDPYS
KDPWNLNNVP	ILPDSLLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINYMHWGE
TKTWYSIPGE	DAEKFEAAIR	REAPDLFEVQ	PDLLFQLVTL	MNPNRIKEAG	VDVYSCNQRA
GELVITFPKA	YHAGFNHGLN	FNEAVNFALP	DWLPFGLDCV	KRYQEHRKLP	VFSHDELLIT
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SQITCSCAVC	IDHIDDLCKC	RVLKRKRFDDA	ELQEIQMKVS	ERAAVPGAWK	AKLTKLSEH
SRPPLRSLRA	LLAEGERINH	PLPELASLRK	CVARANEWVD	AANAFLVRKP	SRKRDRPEHG
LTDLYAVLNE	VDRLGFDCEQ	IGFLKNLAKE	AEETREKARL	LLCDRLLLHG	LSLNLVLEEL
LEVEKIVLRE	QLLKELLEDV	RNWVARARQC	DLPPENSFMK	RIERLLRLGD	EWERCVKDVL
MKPQRTIEQL	PIYPDLLDRL	LDARSRAKDY	EKQAKLWISP	EKPKVQDAVK	LVARADKEFN
IPAVSDLKRT	VDFAMDLETR	CAVLKHHRYQ	HSDIFQTMLQ	WRKYAKEHLT	FTLPNFERLD
KQLSAHFRWL	ESLPWFCHAQ	NLMEDVIEST	RPEDDLPPND	EYFTCICMTP	VRPPAQGTTS
DAVQCDHCFA	RFHGVCANG	GSCPFCDHHH	WNGTIHKERN	WHFCYLPTIL	LHAPEVTKNY
SDQWKQLEII	VHRVDRLAGV	IGQFLSFASN	QRAEYIPQVR	HYMRKLYKIQ	FAVSPNPEVS
FGLDLAGLHR	ILAGQVRKKR	RRPKFIFGQD	VDPDWRDGT	CICRGRTCDK	LYHAGCVFMC
PLCCIRKNRA	YPYSEVRVKN	FSKEIIMYKL	PPPYTQTLFV	ELIRFTP	
>PP					
IPVKPALDMS	TVKTPNRRPF	GLTDCPVFRP	TLEQFKDPLA	YIKSISEKAK	AYGMCKIVPP
LGWEMPVFTD	TEFRFKTRLQ	RLNSIEASSR	AKVNYLEQLY	RFHKQQGNPR	VVVPTINHKP
LDLWLLRKEV	QKQGGYEMVR	NKKWADLGRL	LGYSGPGLST	QMKNYSYTRVI	LPYEHYRERV
SKSSPHDQSA	CFHMFCDDPP	LTTIPKGQWF	CHTCLCGTAD	FGFDEGEEHS	LSSFQARDLE
FRRQWFKRHP	PVTETDVENE	FWRLVQSQQE	TVEVEYGADV	HSTTHGGMPT	LETHPLESSS
KDPWNLNNIP	ILPDSLLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINYMHWGE
TKTWYSIPGA	DADKFEAAIR	REAPDLFEVQ	PDLLFQLVTL	MNPNRIRDAG	VDVYACNQRA
GEFVITFPKA	YHAGFNHGLN	FNEAVNFALP	DWLPFDLDCV	RRYQEHRKLP	VFSHDELLIT
ITQQNQSIQT	ALWLNDNLQE	MMVRERRIRD	KARLGLKDRP	EKTDPEQYQ	CSFCKVFCYL
SQITCDCVVC	VDHIDELCKC	RYLRLRFDDT	EIQDIQMKVS	DRAAIPSTWR	AKLDRLLMES
ARPSLRSLRA	LMAEGERINY	PLSELHALRK	CVVRANEWVD	TANSFLIRKV	SRKRDKPERT
LDELYTALSE	VEDLGFDCEQ	INALKALANE	AQKTREKARA	LLCERLLIEG	STLNLVDEL
VEIEKIVSRE	QLLKELLEDI	RQFAARASQC	ELSTDNPQMV	VLSRMLHAGE	EWEARVKDVL
GRPLKTVEEL	PVDVELVDRL	VATLVRAKDY	EKQAKAWLMP	EKPKVQEAAC	LVTRAEKDFN
IPAVQDLKRT	VDFALDLEAR	CAVLKNRYE	HGDIFQTMLQ	WRKYAKEHLT	FTLLNFDKLD
KQLVQHARWL	EGLPWYCHGQ	AILEDVIEST	RPEDDLPPND	EYFTCICITP	VRPPAAGTVS
DAVQCDHCFA	RFHGVCANG	GSCPFCDHHH	WNGTIHKERS	WHWCYLPTIL	MHAPDVTKNY
SEDWKQLEII	VHRVDRLSQV	IGQFLSFASN	QRADYIPQVR	HYMRKLYRIQ	FAVSPNPEVS
FGLDLAGLHR	ILAGQVRKKR	RRPKFTFGQD	VDKDWTDGTR	CICRGRTCSK	LYHAGCVFMC
PLCCIRKNRA	YPYSEVRVRT	FSKDMIYMRL	PPPYTQTLFI	ELIRFVP	
>WC					
IPVSRTLDP	SVKTPNPRPF	GLTDCPIYAP	TMEQWKDPLA	FIRISIDEAR	TYGMCKIVPP
MGWEMPVFTD	TEFRFKTRLQ	RLNSIEASSR	AKVNFLEQLY	KFHKQQGNPR	VVVPTINHKP
LDLWLLRKEV	QKLGGYEAVR	GKKWADLGRM	LGYGPGGLST	QMKSSYARVI	LPYEEYRDIV
RNSLCDGCDC	GFHIFCLDPP	LNSIPKGQWF	CHTCLFGTGD	FGFDEGEEHS	LSSFQARDLE
FRRLWFKSHP	PVSETDVENE	FWRLVQSQQE	TVEVEYGADV	HSTTHGGMPT	LETHPLNPYS
KDPWNLNNIP	ILPDSLLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINYMHWGE

TKTWYSIPGS	DAEKFEAAIR	REAPDLFEVQ	PDLLFQLVTL	MNPNHLREAG	VDVYSCNQRA
GEFVITFPKA	YHAGFNHGFN	FNEAVNFALP	DWLPFGLDCV	KRYQEHKRLP	VFSHDELLIT
ITQONQSIQT	AIWLNDNLQE	MMAREMRLRD	QARFQMREAL	EELDPEDQYQ	CTICKVFCYL
SQITCHCVVC	IDHVDQLCKC	RILRKRFDMM	ELKEILTKVS	ERAAIPSTWR	NKLNKLLTES
ARPQLRNLRG	VLAAGERINY	PLPELSSLRK	CVLRANEWVE	TANALLVRKP	GRTRDKPERS
LDELYAILRD	VDNLGFDCQE	IGHLKTAKD	AEETKEKALT	LLCERLLLHG	FSHNVLVDEL
VEVEKIVLRE	QLLKDLLEDI	RQFVARATQC	DLPADNQOMK	HLKSLLRVGE	DWESRALEVL
NKPQKTIDEL	PVDPEVMDRL	VTACVRAKEY	EKQAKAWLIP	GKPKVQEAMK	LVSRAEKDLN
IKAIHDLKRT	VDFALDLESR	CEAVLRHRYQ	HGDIFHTMLQ	WRKYAKEHLT	FILPNFEKLD
KQLTLHYRWL	EGLPWFCHGQ	SILEDVVEST	RPEDDLPPND	EYFTCICCTP	VRPPAAGTVS
DAVQCDHCFA	RFHGVCAANG	GSCPFCDHHH	WNGTIHKERS	WHFCYLPTIL	LHAPDVTKNY
SEDWKQLEII	VHRVDRLSAV	IGQFLSFASN	QRPEYIPQVR	HYMRKLYRIQ	FAVSPNPEVS
FGLDLAGLHR	ILAGQRIKKR	RRPKFVFGQD	IDKDWDGTR	CICRGRTCNK	RYHAGCVFMC
PLCCIRKNRG	YPYSEVRVKT	FSKDLIYMKL	PPPYTQTLFV	ELIRFTP	
>CP					
IEVAPVLNLA	SVKTISPRPF	GLEDCPAFYF	TPEEFKDPMA	YIRKISDKAT	EYGICKVVPP
VGWKMPFVTD	TEFRFKTRLQ	RLNSIEASSR	AKVNFLEQLY	RFHKQQGNPR	VSVPTINHRP
LDLWLLRKEV	HKLGGYEAVK	MKKWSDLGAL	LGYPGGLST	QIRNSYTRVI	LPYEHYCERV
RNSLCDGCDC	GFHMFCLDPP	LSSIPKGQWF	CHTCLLETGD	FGFDEGEEHS	LSTLQVRDAE
FRRMWWSKHA	PVSEEEVEQE	FWRLVQSPDE	TVEVEYGADV	HSTTHGAMPT	METHPLDPMA
KDPWNLNNMP	IVSDSLLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINFMHWGE
TKTWYGIPGD	DAEKFEAAIK	SEAPDLFEAQ	PDLLFQLVTL	MNPARLTEAG	VRVYACNQRA
GEFVITFPKA	YHAGFNHGFN	FNEAVNFALP	DWLRGRDCV	ERYREHRLP	VFSHDELLIT
ITQQSQSIKT	AIWLADSLRE	MVVRELGERA	RVRLGMKEVL	EEADPEDQYQ	CAICKMFCYL
SQVTCQCVVC	ADHVDLLCEH	LTLLRLRFS	ELQDTLSKVV	ERSEVPGAWK	KKLQKVLEES
ALPPLRSLRA	LLAAGERINY	PLPELPTLRK	CVQRANEWVD	SANGFIIRKQ	SRKRDRPDRT
LSDLYALLRE	AENLGFDAPE	LGVLEALARQ	AEDISANAQV	LCSERLLLLDA	SSLNVYLDPV
LEIEKVVSRE	RLLDELLDEV	RRLLTRARAC	DLAPDNKYVQ	RLEARHRAGA	DWEERARMML
EQPGKTIEEL	PTDPTIHDLR	KSALAKAMDF	DKQAKGWATA	DKPTPSQLSG	FIARCEKDFH
IPSVKNLSHI	AQYGREVEDK	CAVLRNRYR	HKDVFKEIEE	WGRYARQHLS	LSLPFFQQLD
KQLNLHYRWL	EDLPWYCHGS	EILDDVIEAT	RPEDDLPPTD	EYFTCICQDP	VRPPPPGGQS
DAVQCDHCFA	RFHGKCAANG	GSCPFCDHNN	WNGKIHKERN	WHFCFLPLIL	TRAPDLTHNY
SDTWKQLEII	VHRVDRLSSV	IGHFLTASFAN	QKTSLLPQVR	HYMRKLYKIQ	FAVSPSREIS
FGLDLAGLHR	ILAGLPHKKR	RKPKLVFGPD	ADEDWYDGTR	CVCRRNACKR	RYHAPCVWTC
PLCCVRKNKS	YPFAEVRVKM	HGQELIVERM	PLPRPDIVL	DLVSFTP	
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ATVSPPMDS	TVKTASPRPF	GLEECPTFYF	TMEEFKEPMA	YVQSISEEGM	KYGLCKIVPP
SGWKMPFVTD	TEFRFKTRVM	TLNSIEASSR	AKLNFLEQLY	RYHKQQGNPR	VSVPTINHKA
LDLWRLRREV	HDRGGYEEVR	HKLWAEIGRA	LGYPGGLSA	QLKNSYTRVI	LPYEHFQHHV
RNSLCDGCDC	GFHIFCLDPP	LASIPRGQWF	CHTCLFGTGD	YGFDEGEEHC	LSSFQKRDR
FRQMWWTRHP	PVSEDDVERE	FWRLVQSPRD	TVEIEYGADV	HSTTHGGMPT	LETHPLDPYA
KDPWNLNIP	ILADSLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINYMHWGE
TKTWYGIPGK	DAELFEAAIK	KEAPELFEAQ	PDLLFQLVTL	MNPQTLRDAG	VPVYACNQRP
GEFVITFPKA	YHAGFNHGFN	FNEAVNFALP	HWLPFGLDCV	QRYREHKKPP	VFSHDELLIT
ITQHSQTIKT	ALWLQDSLRE	MTNREMRMRE	QARDGLGEVL	EEEDPEDQYQ	CTTCKTFCYL
SQITCQCVSC	IEHRQQLCAC	RILRKRFTDA	TLRETAKVE	ERAAIPKQWR	SKLHKLLMDS
ARPQLRSLRA	LLAEADRINY	PLPEVSALRK	CVMRANEWVE	SANAFVLRKQ	TRKREAKERT
LDDLKVLDE	VEDLGFDAPE	IASLQALEKQ	ATDAKAQAQA	LLCERLILDC	STLNVQVEEL
AELDKIVASE	QLVQDLGSEV	QQLLGRIRTC	GLPPDNKYVM	MLHARRHAAS	SFEKVVRELL
ADPHKTIEQM	PVDPEVMGDL	QLVIVRAKEY	QAKAKAWLVP	DKPRVEEAME	LVTLAENEFN
ILAVQDLKRT	TEFAQDLER	CEAVHEHRYR	HGDLFEMFDK	WKAYGRDHLT	FYPNFEKLD
VQLKLHYRWV	ESLPWYCHGK	QILEDVIEST	RPEDDLPPND	EYFTCICQTA	VRPPAPAGTVS
DAVQCDHCYA	RFHGVCAANG	GSCPFCDHHH	WNGTIHKDRS	WHFCYLPTIL	LSAPDITRNY
SEDWKQLEII	VHRVDRLSTV	IGQFLSFSSN	QRPEYIPQVR	HFMKLYKIQ	FAVSPSPEVS

FGLDLAGLHR	ILAGQRTKKR	RRPKFTFGQD	IDKNWVDHTR	CICRGRTCNR	LYHAGCVFMC
PLCCLRKNNRP	YPYAEVRVKN	FAKEIIRYRM	PPPYTKTLFV	ELTANAA	
>GT					
IPVSPTLDMS	SVKTSAPRPF	GLEDCPAFYF	TSEEFQDPMA	YIRSISDIAK	DYGICKVVPP
EGWKMPFVTD	TEFRFKTRLM	RLNSIEASSR	AKVNYLEQLY	RFHKQQGNPR	VCVPTINHKP
LDLWLLRKEV	KRLGGYEAVR	AKKWADLGRI	LGYGPGPLST	QIKNSYTRVI	LPYEHFQERV
RSSLCDGCDC	GFHMFCLDPP	LTSIPKGQWF	CHTCLFGTGD	FGFDEGQEH	LSSFQARDAA
FRKMWFKTHP	PVSEHDVEEE	FWRLVQSPTE	TVEVEYGADV	HSTTHGAMPT	LETHPLDPYS
KDPWNLNNIP	IVHDSLLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSVNFMHWGE
TKTWYGIPGE	DAEKFEAAIK	REAPDLFEAQ	PDLLFQLVTL	MSPKRLTEAG	VRVYACNQRA
GEFVITYPKA	YHAGFNHGLN	FNEAVNFALP	DWLPYGLSCV	QRYREHRKLP	VFSHDELLVT
ITQQSQSIQT	AIWLNDLSKE	MTEREKDVRQ	RARLGLTEVL	EEEDAEDQYQ	CTVCKAFCYL
SQITCPVCAC	IDHVAFLCEC	RVLRLRFSD	TLLETQAKVE	ERAAIPDNWR	AKLHKTLAET
ARPQLRTLRA	LLAEGERINH	HLPDLATLKK	CVYRANEWTD	AANSFIIRKQ	SRKRDRQDGG
LEEVEYELLRQ	VDNLGFDSQE	ITQLRNLAKE	AEDTKAKALE	LLCERLLLHE	SSLNVHLDL
DQVKNLVLRE	QLIKELLDEV	RHLLSRARSI	NIPEDDKYMM	LLRSRERAGS	EWEESEVQLL
SKPCKDINKL	PVDPTVFDRL	MNARAKAKEY	EKQARLYLFP	EKPRPQDAMK	LVTRVEKDYA
IPSVHDLKRT	AEFALDLETR	CDTVLKNRYS	HGDMFDMHQ	WQGYAREHLT	FALPNFEKLD
AQLKSHYRWL	EGLPWYCHGK	QILEDVIEST	RPEDDLPPSD	EYFTCICTKA	VRPPPPGSVS
DAVQCDHCYA	RFHGVCAANG	GSCPFCDHHS	WNGAIHKDRS	WHFCYLPTIL	LSAPEITKNY
SQDWKDLLEII	VHRVDRLSMV	IGQFLAFASN	QRPEYIPQVR	HYMRKLYKIQ	FAVSPNPEVS
FGLDLAGLHR	ILAGQRMKKR	RRPRFTFGQD	VKDWDQDGTR	CICRGRTCCK	WYHAGCVFMC
PLCCLRKNNRT	YPYAEVRVKT	FSKDIVYMKL	PPPYTNTLFV	ELIRFTP	
>HI					
IPVAPALDFA	GVRTSSPRPF	GLEDCPTYYP	TQEDFRDPMA	YVRKISEQAK	EYGMCKVVPP
PGWKMPFVTD	TEFRFTTRLQ	RLNNIEASSR	AKMNYLEQLY	RFHQQQGNTR	VAVPTINNKP
LDVWRLRKEV	HALGGFNEVK	ARKWADLGRL	LGYGPGPLST	QMRWSYIRVI	HPYEEFCERV
RASLCDGCDC	GFHMFCLDPP	LASVPKGQWF	CHTCLFGTGD	FGFDEGEEHS	LSSFQARDRE
FRKRWFEDHP	PVSEHDVENE	FWRLVESPTD	TVEIEYGADV	HSTTHGAMPT	LETHPLDPYS
KDPWNLNNIS	ILSDSLLRYI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINYMHWGE
TKTWYGIPGE	DAEKFEAAIR	REAPDLFEAQ	PDLLFQLVTL	MNPKRLTDAG	VRVYACNQRA
GEFVITYPKA	YHAGFNHGLN	FNEAVNFALP	DWLPYGRQCV	QRYREHRKLP	VFSHDELLVT
ITQQSQSIAT	AIWLNDLSKE	MTDREMEDRR	KARLNMGESL	TEADIEEQYQ	CKVCNVFCYL
SQVTCACIVC	VEHAGMLCSC	RVLRTRFSDT	QLLETQAABA	ERAAIPGNWQ	AKFDKVLKES
ARPPLRALRA	LLAEGDRIGY	SLSELHDMRK	CVNRANEWLD	AANGFIVRKQ	SRKRERPDGR
LDELYEMLKE	VEDLGFDCPE	IGVLKERAAK	AEEMKERART	LLCQRLLMEG	SSNNVYLDEL
TDLDKLVARE	QLLDELLEEA	SQYLVRARAC	DLPLDNKHLK	KLEARQRAGQ	TWDERARHVL
SQPYKTIEEL	PIDPTILDRI	GTARLKAKEF	EKQAQTWLVP	EKPRVQDVLR	LVTRAEKDFS
IPAVRELKRM	TDFALDLESR	CDQVLKNTYE	HEDIFVIMLK	WVDYAKQHLD	FSLPKFEKLD
QQLTQHRYWI	ESLPWYCHGK	QLFDDVMEST	KPEDDHPPDD	EFFTCICNDA	VRPPAPGTVS
DAVQCDHCYA	RFHGQCARS	GSCPFCDHHS	WNGSIHKERS	WHFYMPITIL	MYAPEITKNY
SEDWKQLEVI	VHRVDRLAAY	IGQFLSFASN	QRREYISQVR	HFMKRLFKIQ	FAVSPNPEVS
FGLDLAGLHR	IVAGQRTKKR	RRPKFQFGQD	IDQDWLDGTR	CICRGRTCCK	VYHGGCVFIC
PLCCLRKNNRR	YEYAEALRVKM	FSKDIYKTL	RPPYTQTLFV	ELIRFTA	
>SL					
IPVSPLLDLS	SVKTSGPRPF	GLEDCPVFYF	TLDEFNDPMT	YVRSISDSAK	DYGICKIVPP
NGWKMPFVTD	TEFRFKTRLQ	RLNSIEASSR	AKINFLEQLY	RFHKQQGNSR	VSVPTINHKP
LDLWLLRKEV	HKLGGYDAVK	NKKWSDLGRL	LGYGPGPLST	QIKNSYTRVI	LPYEDFCERV
RTSLCDGCDC	GFHMFCLDPP	LATIPKGQWF	CHTCLFGTGD	FGFDEGEEHS	LSSFQARDAE
FRRLWWSAHP	PVSEYDVENE	FWRLVQTPQE	TVEIEYGADV	HSTTHGAMPT	METHPLDPYA
KDPWNLNNMP	IVSDSLLRFI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	YSINYMHWGE
TKTWYGIPGD	DAEKFETAIK	SEAPDLFEAQ	PDLLFQLVTL	MNPKRLIDAG	VRVHACNQRA
GEFVITFPKA	YHAGFNHGFN	FNEAVNFALP	DWLPYGRDCV	QRYREHRKLP	VFSHDELLIT
ITQQSQSIKT	ALWLADSLKE	MTEREIAARE	KARFGMTEVI	DEVDPREEQYQ	CIICKVFCYL

SQVNCQCVVC	VEHADLLCDH	LTLRLRFTDA	DLTDTQTKVV	ERAGIPSSWK	GKLSKVLIDS
ARPQLRSLRA	LLAEGERVNY	HLPALPALRK	CVNRAGEWVD	SANTFLIRKQ	SRKRDRPDGR
LEDLYSLLRE	VENLGFDTPE	ISVLQGLARQ	AEIKLKALD	LLCERLLLQG	SSLNVHLEEI
VEIEKIVMRE	HLLRELLEDI	RGLLTRARSC	NLPQDNKYM	TLESQRAGD	NWEERARHVL
EQPYKTIDEL	PIEVTVDRL	MSARNKAKDF	EKQAKAWLSP	DKPKVQVVMR	FVARAEKDFS
IPAIQDLKRT	ADIAFDLETR	CEAVIKNRYQ	HGDI FDMMR	WKTYTREHLP	FSLPIFEKLD
VQLSQHQRWL	EDLPWYCHGQ	AILDDVVEST	RPEDDLPPSD	EYFTCICITP	VRPPPPGVVS
DAVQCDHCFA	RFHGVCAANG	GSCPFCDHHH	WNGAIHKERS	WHFCFLPTIL	LSAPDITRNY
SDAWKQLEII	VHRIDRLSSV	IGHFLSYASN	RRAEYIPQVR	HYMRKLYKIQ	FAVSPSREVS
FGLDLAGLHR	ILAGQRIKKR	RRPRFTFGQD	IDKDWTDGTR	CICRGRTCCK	LYHAACVFMC
PLCCLRKNNRS	YPYSEVRVKT	FSKDIIYVKM	LPPYTQTLFV	ELTRFVP	
>FS					
IPVSPVLDMS	SVKTDAPRPF	GLEDCPSFYP	TEEEFKDPMA	YVRSISDTAQ	NYGICKVVPP
VGWKMFPVTD	TEFRFKTRLQ	RLNSIEASSR	AKLNFLEALY	RFHQQQGNPR	VSLPTINHKP
LDLWLLRKEV	HKMGYDEVK	GKKWSDLGRI	LYGGGGLST	QIKTSYTRVI	LPFEQFSERV
KNLLCDGCDC	GFHMFCLDPP	LTAIPKGQWF	CHTCLFGTDD	FGFDEGEEHS	LSSFQARDLE
FRKLWFESH	PVSEYDVESE	FWRLVQSPAE	TVEIEYGADV	HSTTHGGMPT	LESHPLDQYA
KDPWNLNNIP	IVSDSLRFI	KSDISGMTVP	WTYVGMIFST	FCWHNEDHYT	FSVNFMHGWE
TKTWYGVPGD	DAEKFEAAIK	KEAPDLFEAQ	PDLLFQLVTL	MNPKRLVDAG	VRVYGCNQRA
GEFVVTFPKA	YHAGFNHGFN	FNEAVNFALP	EWLSYGRDCV	QRYRDHKKLP	VFSHDELLIT
ITQOSQTIKT	ASWLLGSLKE	MTDREMARRV	YARLGLAEIL	EEEDPEDHYQ	CTVCKMFCYL
SQITCQCVVC	IDHAEHLCDH	LIMRKRFSDA	HLLDTLNKVA	ERAAAPSTWR	GKLGKLLTES
ARPQFKSMRA	LLAEGDRIGY	HIPELAPLRK	CVARGNEWMD	ASNTYLIRKQ	SRKRDRPDGG
LEELYALLRE	VENLGFDCPE	IASLQALAQH	AEAAKAQARR	LLCERLLLQG	TSINVHLDEL
LEVQKIVTRE	QLIKELLEDI	RHLLTRARAC	NLPPDNEHMK	LLADRQRAGD	NWEERAKSIL
AQPFTKTIDEL	PIDHAVLDRL	LSALSQAQEL	DKQAKAWLVP	EKPKVADVMR	LVIKAEKEYS
IPSISDLKRT	AEIAADLESR	CDDVLKNRYQ	HGDLFDMSRK	WKAYAVDHLT	FALPMFDKLD
KQLIVHYKWL	ESLPWYCEAQ	KLIADVL DAT	RPEDDNPPND	EFYTCICTAA	VRPPPPGILS
DAVQCDHCFA	RFHGECAKSG	GSCPFCDHNN	WNGNIHKERS	WHFHLLPEVL	HAAPEITKNY
SEHWKQLEII	VHRVDRLTAH	IGQFCMFAQN	HLAHFIPHVR	HYMRKLYKLQ	FQIGATREES
YGLDLASLHR	VLAGQMKKKR	RRPKFTFGQD	LDKDWQDGTR	CICRGRTCCK	TYHTGCVFIC
PLCCLRKNNIT	YPYS D VRVKN	FSKDIVYVKM	LPPRTQTLFV	ELVRFSP	
>PI					
IPVSPILDLS	SVKTRGPRPF	GLEDCPAFYP	TVDEFKDPMA	YVRSISTMAK	NYGICKIVPP
AGWKMFPVTD	TEFRFKTRLQ	RLNSIEASSR	AKLNFLEALY	RFHQQQGNPR	VSLPTINHKP
LDLWLLRKEV	HKMGYDAVK	GKKWSDLGRT	LYGGGGLST	QLKNSYTRVV	LPFEQFSERV
KNLLCDGCDC	GFHMFCLDPP	LTVIPKGQWF	CHTCLFGTDD	FGFDEGEEHC	LSSFQARDLE
FRKLWFESH	PVSEYDLENE	FWRLVQSPHE	TVEIEYGADV	HSTTHGAMPT	METHPLNQYS
KDPWNLNNIP	IVSESLRFI	KSDISGMTVP	WTYVGMVFST	FCWHNEDHYT	FSINFMHWGE
TKTWYGIPGD	DAEKFEAAIK	SEAPDLFEAQ	PDLLFQLVTL	MNPQRLTDAG	VRVYGCNQRA
GEFVITFPKA	YHAGFNHGFN	FNEAVNFALP	EWLPYGRDCV	QRYREHRKLP	VFSHDELLIT
ITQOSQSIKT	ATWLIDSLKE	MVDREMGGRA	YARLGLGELL	EEEDPEDQYQ	CTICKMFCYL
SQITCQCVVC	IDHAEFLCDH	LIMRKRFSDA	DLLETNLKVS	ERASLPVWR	GKLNKLLMES
ARPQFRSLRA	LLAAGERINF	FIPELAPLRK	CVTRGNEWMD	AANTFLIRKQ	SRKRDRPDGG
LDELYALLRE	VENLGFDCPE	IGNLQTLGQH	AEAAKHKARH	LLCERLLLQG	TSINVHLDEI
TEVQKIVTRE	QLIRELLEDI	RHLLTRARAC	NLPADHRLMK	LLEDKQRAGD	NWEERAQSIL
AQPFTKTIDEL	PIDPAVLDR	LAALAKAQDL	DKQAKVWLVP	ERPQVQVVMR	LVQKAEKEYS
IPSISDLKRT	AEIAVDLENR	CEDVIKNRYQ	HGDLFDMMRK	WKIYAADHLA	FALPMFDKLD
KQLVIHYKWL	ESLPWYCEAQ	KLISDVLEAT	RPEEDNPPND	EYYTCICTLA	VRPPPPGILS
DAVQCDHCFA	RFHGDCAKSG	GSCPFCDHNN	WNGTIHKERA	WHFHLLPEIL	HAAPDITKNY
SEHWKQLEII	VHRVDRLTAH	IGQFCMFAQN	HLAHFIPHVR	HYMRKLFKLQ	FQIGATLEES
YGLDLAGLHR	ILAGQVKKKR	RRPRFTFGQD	IDKDWTDGTR	CICRGRTCCK	VYHTGCVFVC
PLCCLRKNNRT	YPYSEVRVKN	FSKEIVYMKM	LPPYTQTLFV	ELIRFTP	

07-Dyein heavy chain

>DS

FEVEHLKYAT	LATSPHLATQ	KQIATIKTAR	NVIEYNEQYV	TKRLLVNI IW	AFSGDARGEW
SGWQSRVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKLPDMEV	GLNFSSYRKT
PNGVILAPTQ	IGRWLVVFCD	EINLPATDKY	GTQRVISLVE	CGGYWRTSDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYNRALLK	VVPNLRAYAE	PLTDAMVTLY
LASQKRFTTD	IQAHYVYSPR	ELTRWVRGIY	EAIRPLEILS	VEGLVRVWAH	EALRLFQDRL
VTEEEKRWTD	EAIDNAAMEH	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLSRFVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLQTYN	PPSMFPIAYR	VVNALVHVHE	SMHHINQRLS
RRQGRYPRHY	LDFINHYVRL	HNEKREELER	HLHVGLDKLV	EQVEELRKSL	AIKRKLKQMV
ADQQEAEQKK	AASIEIQAAL	KEQDKNIKQR	REVVMADLAD	AEQMTKQLRD	LMKRDFLSRP
SYNFETVQRA	SKACMIAELE	KSIERYKEEY	AGLIRVESKV	DRSMRLLESL	SRTFDTEMGT
IVGDVLLSAA	FLAYA EWSSH	LAEAGIKFKA	ELSLPRLSWQ	SKSLPSDNLC	TVTSFLDEAF
LKVLESALRF	GNTLLIQDVE	HLDPILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KMQGEFRLRL	RTLEKLLLQA	LNESGNILD	DDKVINTLET
LKREAAETDV	VMKEVEEVTA	EYLPLAQACS	AVFFILEQLN	LVNHFYQFSF	LDIFDYILHH
NPNLQGVLMN	DLFVIVYKRT	SRALDELEFF	LESGVVTFAK	QPMFKPVLTH	LTEHEDEWIP
FLII IKCLRP	DRLLQSVPGY	DASYRVENQE	GFTLADQAVA	LAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEANPSIPVN	ILQSRILMNE	PPPGIFLLAW	FHAVVQEDMA
AAFTTIDTWL	NSVAKGRANV	DPAAIPWDAL	RTLKQSVYVG	GRVDSDFDQR	IVDAFVDGLF
TPHAYNVDFP	DGTLKLEHMS	WPSWLSLPPT	AERRKMRMLA	DDDHRCREW	LQQLPANFQT
LQKQSAEHS	PLYRLFFREG	SIGRLLSQVR	KDLADVLMS	LTKGTIPTHW	RRYKVHKISN
FARRLAQLDQ	IAQLDNGGLF	FPEAYITATR	AVAHKKWSL	ETLRLELDIE	KVNDPGLVLE
GAAWATD					

>TV

FEVEHLKYAT	LATSPHLVTQ	KEIALIKTVR	NVIEYNEQYA	TKRLLVSLIW	AFSGDARGEW
TGWQGRVPVI	DILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKLPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFCD	EINLPATDKY	GTQRVISLVE	CGGYWRTTDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYNRALLK	VVPNLRAYSE	PLTDAMVALY
LSSQKRFTTD	VQAHYVYSPR	ELTRWVRGIY	EAIRPLEILS	VEGLVRVWAH	EALRLFQDRL
VTEEEKRWTD	EAIDNAAMEH	FPTINILFSN	WTSKDKARLR	VFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLSRFVAMW	NGLSIFQIKV	HNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPALFPISYR	VVNALVHVHE	SMHQINQRLS
RRQGRYPRHY	LDFINHYVRL	HNEKREELER	HLHVGLDKLV	EQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	AASIEIQAAL	VEQDKHIKER	REVVMADLAD	AEQMTKQLRD	VMKRDFLSRP
SFNFETVQRA	SKACMIAELE	ASIERYKEEY	AGLIRVESKV	DRSMKLLESL	SRTFDTEMGT
IVGDVLLSAA	FLAYA EWSSH	LAEAGVQFKA	ELSLPRLSWQ	SKSLPSDNLC	TVTSFLDEAF
LKVLESALRF	GNTLLIQDVE	HLDPILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KMQGEFRLRL	RTLEKLLLQA	LNESGNILD	DDKVIDTLET
LKREAAETDL	VMKEVEEVTA	EYLPIAQACS	AVFFILEQLN	LVNHFYQFSF	LDIFDYILHH
NPNLRSVLMN	DLFLVYKRT	SRALDELEFF	LDSGLVTFKA	HPLFKPVLTH	LTEHEDEWVG
FLTVMKCLRP	DRVLQSVPGY	DASYRVENQE	GFTLADQAVA	MAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEANPSIPVN	ILQSRILMNE	PPPGIFLLAW	FHAVVQEDMA
AAFNTIDTWL	NSVAKGRANV	DPASIPWDAL	RTLKQSVYVG	GRVDSDFDQK	IIDA FVDGLF
TSAAYNVDFP	EGTKLDHFLS	WPSWLSLPPT	AERRKMRMLA	DDDNRCREW	LEQLPANFQT
LQKQSAEHS	PLYRLFFREG	SIGKLLTQVR	RDLADVLMS	LTKGTIPDHW	RRYKVHKISN
FARRLAQLDQ	IAGLDNGGLF	FPEAYITATR	AVAHKRWSL	ETLRLQLDIE	KVNDPGLVLE
GAAWASD					

>PC

FEVEHLKYAT	LATSANLATQ	KQIAAIKTVR	NIIEYNENYV	TKRLLINI IW	AFSGDAKGEW
VAWQTRVPQI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKLPDMEV	GLNFSSYRKT
PNGVILAPAQ	IGRWLVVFCD	EINLPATDKY	GTQRVISLVE	SGGYWRASDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEVSLKQI	YGTYNRALLK	VVPNLRAYAS	PLTDAMVDLY

LASQKRFTTD	IQAHYVYSR	ELTRWVRGIY	EAIRPLEMLS	VEGLVRVWAH	EALRLFQDRL
VTEEEKQWTD	EHIDSAAMEH	FPTINILFSN	WTSKNKARLK	VFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAM	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPVHFPIAYR	VVNALVYVHQ	SLHQINQRLS
RRQGRYPRHY	LDFINHYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	AASIEIQAAL	VEQDRHIEQR	RAVVMADLAD	AEQMTRQLRE	LMKKEFLSRP
SYNFETVNRA	SKACMISELE	ASIERYKEEY	AALIRVQSKV	DRSMKLLESL	SRTFETEMST
IVGDVLLSAA	FLAYAEWSTH	LADANIKFKT	ELSLPRLSWQ	SKSLPSDNLC	IVTSFLDEAF
LKVLESALRF	GNTLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDI
CSRVTSQSLL	QVLKVETDLM	KMQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDV	VMKEVEQVTA	EYLPPIAQACS	SVFFILEQLN	LVNHFYQFSF	LDIFDYVLHH
NPNLKSULLK	DLFLTIVYKRT	SRALEDLELL	LESGLENFAK	HPMFKPVQIH	IVENEDQWAA
FLAIVKCLRP	DRLLQSVTGY	DASYRVENQE	GFTLADQAIA	TAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PNRNFRFLFT	METNPSIPVN	ILQSRIFMNE	PPPGIFLLAW	FHAVVQEDLA
SAFNTIDAWL	NAAAKGRANV	DPASIPWDAV	RTLIKQSVYG	GRVDSDFDQK	ILDAFVDGLF
TPYAYNVDFP	DGTLKEHFLS	WPAWLSLPPT	AERRKMRMIA	DDDFDRCKEW	LGQLPTEFHG
LDKQSGDNQD	PLYRLFYREG	SIGKLLGQVR	RDLADVLMSS	LTKGTIPNHW	RRYKVHKVSD
FARRLAQLTN	IAGLNGGGLF	FPEAYITATR	AVAHRKKWSL	ETLHLQLDIE	RVNDPGLVLE
GASWTTD					

>FP

FEVEHLRYAT	LATSPHLVTQ	KQIAGVKTVR	NVIEYNEQYL	EKRLLVSIIW	AFSGDARGEW
FPWTSRVPVI	DILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEVV	GLNFSSYRKT
PNGVMLAPAQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	ANGYWRITDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYNRAALK	VLPNLRITYAE	PLTDAMVALY
LASQKRFTTD	SQAHYVYSR	ELTRWVRGIY	EAIKPLETTL	VEGLVRVWAH	EALRLFSDRL
VTEEEKSWTD	ESIDNVAMEN	FPTINILFSN	WTSKNKARLR	IFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAM	NGLNIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYD	PPAMFPTAYR	VVNALVFVHQ	SLHAINQRLS
RRQGRYPRHY	LDFINHYVRL	HNEKREELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	AASIEIQAAL	AEQDKHIEQR	RAVVMADLAD	AEQMTKHLRE	LMKKDFVSRP
SFNFETVNRA	SKACMVAELE	ASIEQYKQY	AALIRVESKV	NRSMTLLDSL	SRTFDTEMST
IVGDVLLSAA	FLAYGEWSAH	LVEANVKFKT	ELSMPLRLSWQ	SKGLPSDNLC	TVTSFLDEAF
LKVLESALRF	GNTLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLL	QVLKVETDLM	KMQGEFRLRL	RTLEKLLLQA	LNESSGNILD	DDKVINTLET
LKREAAETDL	VMREVEQVTA	EYLPLAQACS	AVFFILEQLN	LVNHFYQFSF	LDIFDYVLHQ
NPNLKGVLN	DLFLVAYKRT	SRALDELEFL	LESGLESYSK	HAIFKPVLEH	VVQHENEWIT
LVLIIKCLRP	DRLLQSVTGY	DASYRVENQE	GFTLADQAIA	LAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRFLFT	MEANPSIPVN	ILQSRILMNE	PPPGIFLLAW	FHAVVQEDMA
SAFTTIDIWI	NSVAKGRANV	DPAAIPWDAL	RTLKQCVYG	GRVDSDFDQK	IIDAFAVDGLF
TPAAYNVDFP	DGTLKDHFLT	WPAWLSLPPT	AERRKMRMLS	DDDHERRCKEW	LEQLPSTFHT
LEKQTSNDQD	PLYRLFYREG	TIGKLLSQVR	RDLGDVLMSS	LTKGTIPDHW	RRYKVHRISD
FARRLAQLDQ	IAGLDNGGGLF	FPEAYITATR	AVAHRKKWSL	ETLNLKLDID	KVNDPGLVLE
GAKWDTD					

>PP

FEVEHLRYAT	LATSANLITQ	KQVATIKTVR	NVIEYNEQYV	TKRLLVNIIW	AFSGDARGEW
FGWQSRVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEVV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	AGGYWRASDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYNRALLK	VVPNLRITYAE	PLTDAMVTLY
LASQKRFTTD	IQAHYVYSR	ELTRWVRGIY	EAIRPLEVLS	VEGLVRVWAH	EALRLFQDRL
VTEEEKQWTD	ENIDTAAMEH	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAM	NGLNIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPTMFPIAYR	VVNALVFVHQ	SLHQINQRLS
RRQGRYPRHY	LDFINHYVRL	HNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	AASIEIQAAL	VEQDKHIAQR	RAVVMADLAD	AEQMTKQLRD	VMKRDFVSRP

SYTFETVQRA	SKACMISELE	ASIEQYKEEY	AALIRVESKV	NRSMKLLESL	SRTFDTMST
IVGDVLLSAA	FLAYGDWSTH	LAEANIKFKT	ELSLPRLSWQ	SKGLPSDNLC	TVTSFLDEAF
LKVLESALRF	GNTLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KMQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDL	VMKEVEQVTA	EYLPLAQACS	AVFFILEQLN	LVDHFIYQFSF	LDIFDYVLLH
NPNLKNVLTN	DLFLMVYKRT	SRALDEMEFL	MESGLESYGK	QPLFQPVVTH	VLQHEDEWLQ
FLIIIVKCLRP	DRLLQSVPGY	DASYRVENQE	GFTLADQAIA	FAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEANPSIPVN	ILQSRILMNE	PPPGIFLLAW	FHAVVQEDMA
SAFNTIDAWI	NAVAKGRANV	DPAIIPWDAL	RTLKQCVYG	GRVDSDFDQK	ILDAFVDGLF
TPSAYNVDFP	DGTKLDHFLS	WPAWLSLPPT	AERRKMRMLS	DDDLERCREW	LEQLPSNFNT
LQKQGGDNQD	PLHRLFSREG	SIGRLLTQVR	RDLADVLMSA	LTKGTIPDHW	RRYKVHKISD
FSRRLAQLNN	IAGLDNGGLF	FPEAYVTATR	AVAHRKKWSL	ETLHLKLDID	KVNDPGLVLE
GAAWESD					

>WC

FEVEHLRYAT	LATSANLATQ	KQIAAIKTVR	NVVEYNEQYV	TKRLLVNI IW	AFSGDARGEW
FAWQSRVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	SGGYWRTSDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYNRALLK	VVP SLRTYAE	PLTDAMVTLY
LASQKRFTTD	IQAHYVYSPR	ELTRWVRGIY	EAIRPLETSL	VEGLVRVWAH	EALRLFQDRL
VTEEEKRWTD	ESIDSAAMEH	FPTINILFSN	WTSKHKARLR	VFYEEELDVP	LVL FNDVLDH
VLRIDRVFRQ	TTL SRFVAMW	NGLNIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPAMFPIAYR	VVNALVYVHQ	SLHQINQRLS
RRQGRYPRHY	LDFINHYVRL	HNEKREELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	SASIEIQAAL	VEQDKHIEQR	RAIVMNDLAD	AEQMTKHLRD	TMKREFLSRP
SFNFETVQRA	SKACMIAELE	ASIERYKEEY	AALIRVESKV	NRSMKLLESL	SRTFDTMST
IVGDVLLSAA	FLAYGEWSSH	LNDANIKLKA	ELSLPRLSWQ	SKGLPSDNLC	TVTSFLDEAF
LKVLESALRF	GNTLLIQDVE	HLDPIILNEIR	KTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KMQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDV	VMREVEQVTA	EYLSLAQACS	AVFFILEQLN	LVNHFIYQFSF	LDIFDYVLLH
NPRLANVLLN	DLFLMVYKRT	SRALDEMEFL	LESGLDSYGK	HPLFSSVVTH	VLQNEQWIP
FLLIIKCLRP	DRLLQSVTGY	DASYRVENQE	GFTLADQAIA	FAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEANPSIPIN	ILQSRILMNE	PPPGIFLLAW	FHAVVQEDMA
SAFTTIDTWV	NTVAKGRANV	DPAIIPWDAL	RTLKQCVYG	GRVDSDFDQK	ILDAFVDGLF
TSAAYNVDFP	DGTKLEHFLS	WPSWLSLPPT	AERRKMRMLA	DDDHERRCKE	LGQLPSSFNT
LQRASGDNQD	PLYRLFSREG	SIGKLLSQVR	RDLADVLMS	LTKGTIPNHW	RRYKVHKISD
FARRLAQLDQ	IARLDNGGLF	FPEAYITATR	AVAHRKKWSL	ETLQLQLDID	RVNDPGLVLE
GATWETD					

>HI

FEVEHLRYAT	LATSANIITQ	KQVAGIKTAR	NILEYNEQYV	SKRLLISIIW	AFSGDAKGEW
SAWAARVPQI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEV	GLNFSSYRKT
PNGVILAPVQ	LGRWLVVFC	EINLPAAADKY	GTQRVISLVE	SGGYWRTSDM	SWVKMERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEVSLKQI	YGTYNRGILK	VVPNLRTYAE	PLTDAMVAFY
LASQKRFTTD	IQAHYVYSPR	ELTRWVRGIY	EAIRPLEVLS	VEGLVRVWAH	EALRLFQDRL
VAEDERQWGT	DNIDNTALEH	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVL FNDVLDH
VLRIDRVFRQ	TTL SRFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLSSYQ	PPAMFPIAYR	VVNALVHVHM	SLYQINLRLS
RRQGRYPRHY	LDFINHYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKQMV
SDQQEAEQKK	AASIEIQAAL	VKQDKHIEQR	RSIVMADLAD	AEQMTKQLRE	VMKKDFLSRP
SFNFETVQHA	SKACMISELE	ASITKYKEEY	AFLIRVQGVK	DRSMKLLESL	SRTFDAEMST
IVGDVLLSAA	FLAYGEWMNH	LVEANIKFKP	ELSFTRLSWQ	SKGLPSDNLC	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFVRRL	RTLEKLLLQA	LNESSGNILD	DDKVIDTLET
LKREAAETDL	VMREVEQVTA	EYLPLAQACS	SVFFILEQLN	LVNHFIYQFSF	LDIFDYVLLH
NPNLHGILLK	DLFLVYRRT	SRALDELEFL	LESGLDTYAK	QSLFKPVQAH	ILEHESDWIP

FLLI IKCLRP	DRLLQSVAGY	DASYRIDNQE	GFALADQAIG	VASRQGTWVL	LKNVHLAPQW
LGEKKLQTLN	AHRNFRFLFT	MEANPSIPVN	ILQSRVIMNE	PPPGIFLLAW	FHAVVQEDMA
AAFTTIDAWL	HSIAKGRANV	DPEQIPWDAL	RTLKQSVYVG	GRVDSDFDQK	IIDAFVDGLF
TSAAYNVDFP	EGTKLDHFLS	WPSWLSLPPT	AERRKMRTL	DDDLERCREW	LTQLPSTFNV
LQKQSGDNSD	PLYRLFSREG	SIGKLLNQVR	KDLIDVLMSS	LTKGTIPDHW	RRYKVKKIPD
LGLRLAQLDN	LATLDNGGLF	FPEAYITATR	AVAHRKKWSL	ETLHMRDLIE	RVNDPGLALE

>SH

FEVEHLRYAT	LATSANLMTQ	RQVAGLKTVR	NILEYNEQYV	SKRLLVSIIW	AFSGDSKGEW
SAWAAKVPTI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRKLPMDEVV	GLNFSSYRKT
PNGVILAPIQ	LGRWLTVFCD	EINLPAADKY	GTQRVISLVE	CGGYWRITDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEVSLKQI	YGTYTRALLK	VVPNLRGHAE	PLTDAMVSFY
LASQKRFTTD	VQAHYVYSR	ELTRWVRGIY	EAIRPLELLS	VEGLVRVWAH	EALRLFQDRL
VSEDEKQWTD	DNIDMTAMEH	FPTIDILFSN	WTSKHKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLRSFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLSSYS	PPAIFPIAYR	VVNALVHVHM	SLYNINQRLS
RRQGRYPRHY	LDFINHYVRL	YSEKRDELER	HLHVGLDKLV	TQVEDLRKSL	AIKRKLKQMV
SDQQEAEQKK	AASIEIQAAL	VEQDKHIAQR	RNVVMADLAD	AEQMTKQLRD	LMKKDFLSRP
SFNFETVNRA	SKACMIAELE	ASITRYKDEY	ALLIRVEGKV	DRSMKLLGSL	SRTFDAEMST
IVGDVLLSAA	FLAYGEWMSH	LVDANIKFKP	ELSFTRLWSQ	SKGLPSDNLQ	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRVRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDI	IMREVEQVTA	EYLPLAQACS	AVFFILEQLN	LVNHFYQFSF	LDIFEFILHH
NPNLQGVLMK	DLFLTVMFKRT	SRALDELEFL	LESGLEVYAK	QPLFRPVQNH	IAEHEEEWAT
FLLVIKCLRP	DRLLQSVTGY	DASYRVESQE	GFSLADQAIA	TASRQGTWVL	LKNVHLAPSW
LGEKKLQTLN	AHRNFRFLFT	MEANPSIPVN	ILQSRIIMNE	PPPGIFLLAW	FHAVTQEDMA
SAFTTIDAWC	RSVAKGKANI	DPALIPWDAL	RTLKQSVYVG	GRVDSDFDQR	ILDAFVDNLF
TPAAYNVDFP	EGTKIDQFLA	WPSWLSLPPT	AERRKMRTLA	DDDLDKCREW	LAQLPSSFN
LTKQTGDNQD	PLYRLFAREG	SIGNLLGQVR	KDLADVLMSS	LTKATIPVHW	RRYKVKRIPD
LARRLAQLDN	LASLDTGGLF	FPEAYITATR	AVAHRKKWSL	ETLHLRLDIE	RMNDPGLVLE

>PS

FEVEHLRYAT	LATSANLTTQ	QQVAALKTVR	NIVEYNEQYA	TKRLLLNI IW	AFSGDAKGEW
TPWQGKVPVI	EILYSWLSEH	KPLLLCGPPG	SGKTMTLFSA	LRKLPMDEVV	GLNFSSYRKT
PNGVV LAPVQ	IGRWLVVFC	EINLPAADKY	GTQRVISLVE	CNGYWRASDK	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYIRGALK	VVPNLRAYSE	PLTNAMVDFY
LASQSRFTTD	AQAHYVYSR	ELTRWVRGVY	EAIRPLEILS	VEGLVRVWAH	EALRLFQDRL
VTEEEERRWTD	EQIDNIAMEH	FPTINILFSN	WTSKYKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLRSFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLASYT	PPIHFPIAYR	VVNALVFVHQ	SMHQINQRLS
RRQGRYPRHY	LDFIHHYVRL	YNEKRNELE	HLHVGLDKLV	EQVEELRKSL	AIKRKLKQMV
TDQQEAESKK	KASIEIQAAL	VEQDKHIAQR	REIVMADLAD	AEQMTKAHRD	LMKKDFLSRP
SFNFETVNRA	SKACMISELE	ASIQYKKEEY	ALLIRVQGKV	DRSMKLLESL	SRTFDAEMST
IVGDVLLSAA	FLAYGEWSNH	LTEANIKFKP	ELSFARLSWQ	SKSLPSDSL	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPA	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KIQGEFRRL	RTLEKLLLQA	LNESSGNILD	DDKVIDTLET
LKREAAETDV	VMKEVEQVTA	EYLPLAQACS	SVYFILEQLN	LVNHLYQFSF	LDIFDYVLHQ
NPHLKGILLN	DLFLVVYQRT	SRALDELEFL	LESGLQTFAK	DEIFKPVKKH	IQENESDWIP
FLLVIKCLRP	DRLLQSVPGY	DASYRVENQE	GFTLADQAIS	LAARQGSWVL	LKNVHLAPAW
LGEKKLQTLN	PHRNFRFLFT	MEANPSIPVN	ILQSRLIMNE	PPPGIFLLAW	FHAIVQEDMR
SACNTIDIWL	NAAARGRANI	DPAAIPWDV	RALIKQAVYG	GRVDSDFDQR	VLD AFVDGLF
TPSAYNVDFP	DGTEKIEHFLS	WPSWLSLPPT	AERRKMRTLE	DDDHCKEWE	LALLPANFNT
LSKPTTENQD	PLYRLFHREG	MIGKLLSQVR	RDLTDVLMSE	LTKGAIPTHW	KRYKVQKIPN
LARRLGQLDH	IAGLENGGLF	FPEAYITATR	AVAHRKKWSL	ETLRLYLDIE	QINDPGLVLE

GANWSTD

>GT

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TAWASKVPVI	DILYSWLSEH	KPLLLCGPPG	SGKTMTLFSA	LRLKLPDLEV	GLNFSSYRKT
PNGVVLAPTQ	IGRWLVVFCD	EINLPATDKY	GTQRVISLVE	CNGFWRTSDM	SWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYTRAALK	VVPNLRGHAE	PLTDAMVEFY
LASQKRFTTD	VQAHYVYSR	ELTRWVRGIY	EAIRPLEMLT	VEGLVRVWAH	EALRLFQDRL
VTEEEKQWTD	DNIDLVMQH	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLSRFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPQ
NGLASRAATS	PALFNRCVLD	WFGDWLPAYN	PPAHFPIAYR	VVNALVFVHM	SMYAINQRIS
RRQGRYPRHY	LDFINHYVRL	FNEKRNELE	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
TDQQEAEQKK	AASIEIQAAL	VEQEKHIEQR	RAVVMADLAD	AEQMTKQIRE	LMKKDFLSRP
SFNFETVNRA	SKACMIAELE	AKIQTYKEEY	ALLIRVQSKV	DRSMKLDSL	SRTFDVEMST
IVGDVLLSAA	FLAYGEWASH	LGEAGVKFKQ	ELSFPRLSWQ	SKSLPSDNL	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDL	VMREVEQVTA	EYLPLAQACS	SVFFILEQMN	LVNHFYQFSF	LDIFDYVLHQ
NPNLKNVLLN	DLFLMVYKRT	SRALDELEFL	LESGLQSF	HSIFKPVQSH	ISEHENEWIP
FLLI IKCLRP	DRLLQSVPGY	DASYRVDNQE	GFSLADQAIA	GAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PNRNFRFLT	MEANPSIPVN	ILQSRIIMNE	PPPGIFLLAW	FHAI IQEDMI
SAFNTIDAWL	GAAARGRANI	DPAAIPWDAL	RTLIKQSVYG	GRVDSDFDQR	TLDAFVDGLF
TPAAYNVDFP	DGTLKEHFLS	WPSWLSLPPT	AERRKMRQLA	DDEHDCQEW	LSYLPSSFNT
LSKPSTENQD	PLYRLFFREG	TIGKLEQVR	RDLEDVLMSS	LTKGTIPDHW	RRYKVHKIPN
LARRLGQLDK	IAGLDSGGLF	FPEAYITATR	AVAHRKKWSL	ETLNLRLDIE	RIDDPGLVLE

GAAWAQD

>SC

FEVEHLKYAT	LATTANLATQ	QQMADMKTAR	NVIEYNEQYV	TKRLLLSIIW	AFSGDAKGEW
IQWQSKVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKLPDMEV	GLNFSSYRKT
PKGII LAPVQ	IGRWLVVFCD	EINLPAADKY	GTQRVISLVE	HGGYWRTSDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEVSLKQI	YGTYNRAALK	VVPNLRITYAE	PLTDAMVAFY
LASQKRFTTD	IQAHYVYSR	ELTRWVRGIY	EAIRPMEVLS	VEGLVRVWAH	EALRLFQDRL
VSEDERQWTD	EHIDNAAMEY	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLSRFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYS	PPAIFPIAYR	VVNALVHVHL	SLHAINQRIS
RRQGRYPRHY	LDFINHYVRL	YSEKRDELE	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
SDQQEAEQKK	AASIELQAAL	VEQDKHIEQR	RAVVMADLAD	AEQMTKHLRD	IMKRDFLSRP
SYNFETVQRA	SRACLIAELE	GKIAKYKEEY	ALLIRVQSKV	DRSMKLLESL	SRTFDAEMST
IVGDVLLSAA	FLAYGGWSNH	LSEANIKFKP	ELSFTRLWSQ	EKSLPSDTLT	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNELR	RTGGRVLIRL	GSQDIDFSPA	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDV	VMKEVEEVT	EYLPLAQACS	AVFFVLEQLN	LVNHFYQFSF	LDIFDYILHH
NPHLKGVL MN	DLFLIVYKRT	SRALDEAEFL	LESGLEAYAK	SSIFKPVQNH	FIENENQWAA
FLLI IKCFRP	DRLLQSVPGY	DASYRVENQE	GFSLADQAIA	AASRQGTWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRFLT	MEANPSIPTN	ILQSRLIMNE	PPPGIFLLAW	FHAI VQEDMA
AAFGTIDAWL	VAASKGKANV	DPATIPWDAL	RTL VKESVYG	GRVDSDFDQR	IVNSFVDGLF
TPAAYNIDFP	EGTKMEHFLT	WPSWLSLPPT	AERRKMRMLA	DDDLDRCREW	LGHLPKFN
LERPTGDNQD	PLHRLFSREG	NIGNLLTQVR	RDLSVDLMSA	LTKGTIPDHW	RRYKVHHIAD
FSRRLAQLDH	IAGLDNGGLF	FPEAYITATR	AVAHRKKWSL	ETLNLRLDIE	RVNDPGLVLE

GASWSTD

>CC

FEVEHLKYAT	LATAAHLQTQ	KEIAGIKTVR	NVIEYNEQYV	SKRLLVSLIW	AFSGDAKGEW
IAWQSRVPDI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKLPDMEV	GLNFSSFRKT
PNGVVLAPIQ	IGRWLVVFCD	EINLPASDKY	GTQRVISLVE	SGGFWRTSDM	AWVRLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEVSLKQI	YGTYNRALLK	VVPNLRITYAG	PLTDAMVAFY

LASQKRFTTD	AQAHYVYSR	ELTRWIRGIY	EAIKPLEILS	VEGLVRVWAH	EALRLFQDRL
VTEEERNWTD	EHIDGVAMEH	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAWI	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPANFPIAYR	VVNALVYVHS	SLHQINQRLS
RRQGRYPRHY	LDFINHYVRL	YTEKRDELER	HLHVGLDKLV	TQVEELRKSL	AVKRKLKRMV
SDQQEAEQKK	AASIEIQAAL	VEQDRHIEQR	RAVVMADLAD	AEQMTKQLRE	LMKKDFLSRP
SYNFETVNRA	SKACMIAELE	SKIAQYKDEY	ALLIRVQSKV	DRSMKLLESL	SRTFDAEMST
IVGDVLLSAA	FLAYGEWSNH	LTEANIKFKP	ELSFTRLISWQ	SKSLPSDNLT	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSIL	QVLKVETDLM	KVQGEFRLRL	RTLEKLLQLA	LNESTGNILD	DDKVIDTLET
LKREAAETDL	IMKEVEQVTA	EYLPLAQACS	SVFFVLEQLN	IINHFIYQFSF	LDIFDYVLLH
NPHLKSILN	DLFLVYKRT	SRALDELEFL	LESGLELFSK	HSIFKPVQNH	VLNNEDTWIN
FLIVMKCFRP	DRLLQSVPGY	DASYRVENQE	GFTLADQAIA	AASRQGTWVL	LKNVHLAPSW
LGEKKLQTLN	PHRSFRLFLT	MEMNPSIPVN	ILQSRLIMNE	PPPGIFLLAW	FHAIVQEDMA
SASRTIDAWL	DAASRGKANI	DPAAIPWEAL	RTLKESVYG	GRVDSDFDQR	ILDSFVNSLF
TPAAYNVDFP	DGTLKEHFLS	WPSWLSLPPT	AERRKMRMLA	DDDLERCREW	LALLPSKFNV
LPPQSADSQD	PLYRLFAREG	SIGRLLDQVS	RDLADVLISA	LTKGTIPEHW	KRYKVPKIAN
FARRLQQLDL	VAGLDNGGLF	FPEAFITATR	AVAHKKKWSL	ETLSLCLDIE	RVNDPGLALE
GAAWASD					

>CP

FEVEHLRYAT	LATSAHLETQ	KQIASNKTAR	NIIEYNEQYV	TKRLLVSIIW	AFSGDAKGEW
VAWQSKVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEVV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPAQDKY	GTQRVISLVE	CGGYWRSSDM	AWVTLEIRIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYSRALLK	VVPTLRAYAE	PLTDAMVAFY
LDSQKRFTAD	IQAHYVYSR	ELTRWVRGIY	EAIRPLEILS	VEGLVRVWAH	EALRLFQDRL
VTEEERQWTD	EHINNAAMEN	FPTINILFSN	WTSKNKARLK	VFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAWL	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYS	PPDHFPIAYR	VVNALVYVHS	SLHAINQRLS
RRQGRYPRHY	LDFINHYVKL	YNEKREELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
SDQQEAEQKK	AASIEIQAAL	VEQDKHIAQR	KEVVMADLAD	AEQMTKPLRD	LMKREFLSRP
SYNFEMVQRA	SKACMISELE	SKIATYKDEY	ALLIRVQNKV	DRSMKLLESL	SRTFDAEMST
IVGDVLLSAA	FLAYGDWSGH	LSEANVKFKS	ELSLTRLISWQ	SKSLPADNLT	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	NLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDV
CSRVTSQSIL	QVLKVETDLM	KAQGEFRLRL	RTLEKLLQLA	LNESTGNILD	DDKVISTLET
LKREAAETDV	VMREVEEVTA	EYLPLAQACS	AVFFILEQLN	LVNHFIYQFSF	LDIFDYVLHH
NPNLAGVLLS	DLFVVVFKRT	SRALDELEYL	LEAGLEHYAK	NSIFKPVNLH	VMERPEEWAP
FILIIKCLRP	DRLLQSVTGY	DASYRVENQE	GFALADQAIA	AAARQGTWVL	LKNVHLAPTW
LGEKKLQTLN	PHRNFRFLT	MEANPSIPVN	ILQSRLIMNE	PPPGIFLLAW	FHAVVQEDMA
SAFGTIDTWL	NSVAKGRANV	DPATIPWDAL	RTLIKQSVYG	GRVDSEFDQR	ILDSFVDKLF
TPMAYNVDFP	DGTLKEHFLD	WPSWLSLPPT	AERRKMRMLS	DDDFERSREW	LAQLPSKLN
LPKQASEKSD	PLYRFFSREG	TIGKLLGQVR	KDLESVLMSS	LTKGTIPNHW	RKYKVPKIPD
LSRRLAQLEE	IVTMQQGLF	FPEAYITATR	AVAHKRKWSL	ETLHLRLEIG	EVKNPGLSLE
GASWNVE					

>SL

FEVEHLRYAT	LATSANLITQ	TQVASIKTVR	NIIEYNEQYV	TKRLLVSIIW	AFSGDAKGEW
TAWQSKVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEVV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPAQDKY	GTQRVISLVE	CGGYWRASDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEISLKQI	YGTYNRALLK	VVPTLRAYSE	PLTDAMVAFY
LASQKRFTTD	IQAHYVYSR	ELTRWVRGIY	EAIRPLEMLS	VEGLVRVWAH	EALRLFQDRL
VTEEEKHWT	EHIDNAALEH	FPTINILFSN	WTSKNKARLK	IFYEEELDVP	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAWL	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYS	PPAHFPIAYR	VVNGLVYVHS	SLHQINQRLS
RRQGRYPRHY	LDFINHYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	AASIEIQAAL	VEQDNHIAQR	RAVVMADLAD	AEQMTKPLRD	LMKRDFVSRP

SYNFETVQRA	SKACMISELE	AKIGKYKEEY	ALLIRVQSKV	DRSMKLLESL	SRTFDAEMST
IVGDVLLSAA	FLAYGEWSNH	LSEANITFKP	ELSLVRLSWQ	SKSLPSDNLT	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIGTLET
LKREAAETDV	IMKEVEQVTS	EYLPLAQACS	SIFFILEQLN	LVNHFYQFSF	LDIFDYVLHH
NPNLKNVLLS	DLFLIVYKRT	SRALDELEFL	LESGLENYAK	QALFRPVLTH	ITERENDWVP
FLLIIKCLRP	DRLLQSVPGY	DASYRVELQE	GFTLADQAIA	AASRQGSWVL	LKNVHLAPTW
LGEKKLQTLN	PHRNFRLFLT	MEANPSIPVN	ILQSRIIMNE	PPPGIFLLAW	FHAVVQEDMA
SAFGTIDTWL	NAIAKGRANV	DPAIIPWDAL	RTLIKQSVYG	GRVDSDFDQR	ILDTFVDGLF
TPTAYNVDFP	DGTKLEHFMF	WPSWLSLPPT	AERRKMRMLA	DDDHDRCREW	SSQLPATFNT
LPKQSNNDNP	PLYRLFFREG	SIGKLLDQVR	KDLADVLMS	LTKGTIPSHW	RRYKVPKIPD
LARRLAQLDG	ITSMDNGGLF	FPEAYVTATR	AVAHRKRWSL	ETLNLRLDIG	RVNDPGLVLE

>LB

FEVEHLKYAT	LATSANLETQ	KQIASIKTVR	NVIEYNEQYV	TKRLLISIIW	AFSGDAKGDW
IAWQSRVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDLEV	GLNFSSYRKT
PNGVILAPIQ	IGRWLVVFC	EINLPAADKY	GTQRVISLVE	CGGYWRASDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEISLKQI	YGTYNRALLK	VVPNLRAYAE	PLTDAMVSFY
LASQKRFTTD	VQAHYVYSPR	ELTRWVRGIY	EAIRPLEILS	VEGLVRIWAH	EALRLFQDRL
VSEEERLWTD	ENIDAAALEH	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLRSFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYG	PPAHFPVAYR	VVNALVHVHS	SLHPINQRLS
RRQGRYPRHY	LDFINHYVRL	YTEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	AASIEIQAAL	VEQDRNIEQR	RAVVMADLAD	AEQMTRQLRD	TMKKDFLSRP
SYNFETVQRA	SKACMIAELE	SKIARYKDEY	ALLIRVQSKV	DRSMKLLESL	SRTFEAEMST
IVGDVLLSAA	FLAYGEWSNH	LAEANIKFKP	ELSFTRLWSQ	SKSLPSDNLT	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESSGNILD	DDKVIDTLET
LKREAAETDV	VMREVEQVTA	EYLPLAQACS	SVFFVLEQLN	LANHFYQFSF	LDIFDYILHH
NPNLKNVLLK	DLFLVVYKRT	SRALDELEFL	LESGLNNFAK	QTLFKPVQAH	ITEHEDHWIP
FLLIMKCFRP	DRLLQSVPGY	DASYRVENQE	GFTLADQAIA	AAARQGTWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEANLSIPVN	ILQSRLIMNE	PPPGIFLLAW	FHAVVQEDMA
SAFSTIDAWL	NSVSKGRANI	DPASIPWDAL	RTLKQSVYG	GRVDSDFDQR	ILNSFVDGLF
TAQAYNVDFP	DGTMKEHFLT	WPSWLSLPPT	AERRKMRMLA	DDDLDRCREW	LSQLPSEFNT
LTPQSAEHQD	PLYRLFSREG	SIGKLLDQVR	KDLTDVLMSA	LTKGQIPEHW	RRYKVNKIAN
FSRRLSQLDS	IAKLDKGGLF	FPEAYVTATR	SVAHKKKWSL	ETLTLRLDLE	RVNDPGLALE

GASWSTN

>FS

FEVEHLRYAT	LATSANLTTQ	KEIVTIKTVR	NVTEYNEQYV	EKRLLVSIIW	AFSGDAKGEW
IAWQTRVPVI	EILYSWLSEH	KPLLLCGPPG	SGKTMTLFSA	LRLKPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPAADKY	GTQKVISLVE	CGGFWRASDM	SWVKLERIQF
VGACGRVPLT	HRFLRLVMVD	YPGEVSLKQI	YGTYNRAVLK	VVPSLRAYAE	PLTDAMVSFY
LASQKRFTTD	IQAHYVYSPR	ELTRWIRGIY	EAIRPLEVLS	VEGLVRVWAH	EALRLFQDRL
VNDEERLWTD	EHIDAAALEH	FPTINILFSN	WTSRNKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLRSFVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPQ
NGLASRAATS	PALFNRCVLD	WFGDWLASYN	PPTNFPIAYR	VVNALVYVHS	SLHQINQRLS
RRQGRYPRHY	LDFINQYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLQRMV
ADQQEAEQKK	AASIEIKAAL	REQDMHIEQR	RAVVMADLAD	AEQMTKQLRE	TMKKDFLSRP
SYNFEAVQRA	SKACMIAELE	AKITQYKDEY	ALLIRVQGKV	ERSMKLLESL	SRTFDAEMST
IVGDVLLSAA	FLAYGEWSNH	LAEASITFKP	ELSLTRLWSQ	SKSLPADNLT	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDV	VMKEVEEVTA	EYLPLAQACS	SVFFILEQLN	LVNHFYQFSF	LDIFDYILLH
NPNLKNILLK	DLFLVVYKRT	SRALDELEFL	LESGLEGYAK	QSLFKPVQNH	ITEHESEWVP

FLLIVKCLRP	DRLLQSVPGY	DASYRVENQE	GFALADQAIA	AASRQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEANPSIPVN	ILQSRIIMNE	PPPGIFLLAW	FHAIVQEDMA
AAFGTIDTWL	NAVAKGRANI	DPAAIPWDAL	RTLVKQSVYG	GRVDSDFDQR	ILDAFVDTLF
TPSAYNVDFP	DGTKIEHFLS	WPAWLSLPPT	AERRKMRLQ	DDDLERCREW	LSQLPSVFNI
LSKQSGDNQD	PMYRLFSREG	SVGKLLGQVQ	KDLADVLMS	LTGKTIPTHW	RRYKVNKIPN
LARRLVQLNE	IAGLDNGGLF	FPEAYITATR	AVAHRKRWSL	ETLTMRLDIE	KVNDPGLALE
GAAWSTD					

>PI

FEVEHLRYAT	LATSANLLTQ	KEIAAIKTVR	NIEYNEQYV	TKRLLVSIIW	AFSGDAKGEW
VAWQTRVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRKLPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPAADKY	GTQKVISLVE	CGGYWRASDM	SWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEVSLKQI	YGTYNRAVLK	VVPSLRAYAE	PLTDAMVAFY
LASQKRFTTD	VQAHYVYSR	ELTRWARGIY	EAIRPLEVLP	VEGLVRVWAH	EALRLFQDRL
VNEEERLWTD	ENIDAAALEH	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLRSFVAM	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPAHFPIAYR	VVNALVYVHS	SLHQINQRLS
RRQGRYPRHY	LDFINHYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEQKK	AASIEIQAAL	VKQDKHIEQR	RAIVMADLAD	AEQMTKLIRE	TMKKDFLSRP
SYNFETVQRA	SKACMISELE	AKIDKYKEEY	ALLIRVQSKV	DRSMKLLESL	SRTFDAEMST
IVGDVLLSAG	FLAYGEWSNH	LAEASIKFKP	ELSLTRLWSQ	SKSLPADNLT	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESGNILD	DDKVIDTLET
LKREAAETDV	VMKEVEQVTA	EYLPLAQACS	SVFFILEQLN	LVNHFYQFSF	LDIFDYVLHH
NPNLKNVLVN	DLFLVYKRT	SRALDELEFL	LESGLESYSK	QPIFKPVQNH	IMEHESDWIP
FLLIIKCLRP	DRLLQSVPGY	DASYRVENQE	GFTLADQAIA	TASRQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEAQPSIPVN	ILQSRILMNE	PPPGIFLLAW	FHAVVQEDMA
SAFGTIDTWL	NSVAKGRANV	NPATIPWDAL	RTLKQSVYG	GRIDSDFDQR	ILDAFVDNLF
TPSAYNVDFP	DGTMKEHFLS	WPSWLSLPPT	AERRKMRLA	DDDLDRCREW	LSQLPSTFNT
LVKQSGENQD	PMYRLFFREG	SVGKLLGQVR	KDLADVLMS	LTGKTIPTHW	RRYKVTKIPN
LARRLAQLND	IADLENGGLF	FPEAYITATR	AVAHRKRWSL	ETLNMRLDIE	KVNDPGLALE
GAAWSTD					

>SS

FEVEHLKYAT	LATSPNLEVQ	RSIATIKTVR	NVIEYNEQYV	TKRLLISIIW	AFSGDAKGEW
LPWQSKVPVI	EILYSWLSEH	KPLLLCGPPG	SGKTMTLFSA	LRKLPDMEV	GLNFSSYRKT
PNGVILAPIQ	IGRWLVVFC	EINLPAPDKY	GTQRVISLVE	SGGYRTLD	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEVSLKQI	YGTYNRAMLK	VVPNLRAYAE	PLTDAMVAFY
LASQKRFTTD	VQAHYVYSR	ELTRWVRGIY	EAIKPLDILS	VEGLVRVWAH	EALRLFQDRL
VTEEEKQWTD	ENIDAVAMEN	FPTINILFSN	WTSKNKARLR	VFYEEELDVP	LVLFNVDLHD
VLRIDRVFRQ	TTLRSFVAM	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYT	PPINFPIAYR	VVNALVHVHQ	SMHHFNTRLS
RRQGRYPRHY	LDFLHHYVRL	FTEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLRRMV
ADQQEAEQKK	AASIEIQAAL	AEQERSIEQR	RAVVLADLAN	AEQLTKPLRE	FMKKEYLSRP
SYNYEVVNRA	SKACMVAELE	TSIKRYKEEY	AFLIRVQSKV	DRSMTLLESL	SKTFETEMST
IVGDCLLSAA	FLAYGEWCAH	LTDANTKFKP	ELSLTRLWSQ	SKSLPSDTLC	TVTSFLDES
LKVLESALRF	GNALLIQDVE	NLDPILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFKLRL	RTLEKLLLQA	LNESGNILD	DDKVIDTLEK
LKREAAETDI	IMKEVEEVTA	EYIPLAQACS	SIFFILEQMN	LVNHFYQFSF	LDIFDYVLHQ
NPNLKNILMD	DLFLVYQRT	SRALDEMELL	LESGLQAYAR	SSMFKGIVPH	LAHQADWMK
FLLLIKCFRP	DRLLQSVTGY	DASYRVENQE	GFTQADQAIA	GAARQGYWVL	LKNVHLAPSW
LGEKNLQTLN	PHRNFVRLT	METNPSIPVN	LLQSRIFMNE	PPPGIFLLAW	FHAIVQEDMA
AAFNTIDIWL	NSVAKGKANV	DPASIPWDAL	RTLVKQSVYG	GRIDSDFDQK	VLDADFVDRLF
TPFSYNVDFP	EGTKMEHFLA	WPSWLSLPPT	AERRKMRTL	DDDLQHCREW	LSSLPETLNA
LQKRSGDNSD	PLFRFFSREA	SVGKLLVQVR	RDLSDVLLSH	LTGKTIPDHW	HRYKVTKIPN
LGRRLAQLET	ISQLNSGGLF	FPEAYVTATR	AVAHRKKWSL	ETLDRRLDLE	QIQDPGLVLE

GASYSGG

>RM

FEVEHLRYAT	LATSPNLSTQ	GQIVSIKTVR	NVVEYNEQYV	TKRLLLNIVW	AFSGDAKGDW
IAWSSKVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRKLPDMEV	GLNFSSFRKT
PSGVILAPMQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	YGGYYRTSDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEASLKQI	YGTYNRAMLK	VVPNLRAYAE	PLTDAMVSFY
LASQKHFTTD	MQAHYIYSPR	ELTRWVRGIY	EAIKPLELLS	VEGLVRVWAH	EALRLFQDRL
VSEDERVWTD	DNIDATAMEH	FPTINILFSN	WTSKNKARLK	VFHEEELDQV	LVLFNVDLHD
VLRIDRVFRQ	TTLSRFVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYA	PPTYFPIAYR	VVNALVYVHQ	SLYQINRRLS
RRQGRYPRHY	LDIFIQQYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRASL	AIKRKLKRMV
TDQQEAEQKK	AASIEIQAAL	VEQDRHIEQR	RAIVMADLAD	AEQMTKPLRE	VMKKDYLSRP
SFNFETVNHA	SKACMIAELE	ASILKYKEEY	ALLIRVQSKV	DRSMKLDSL	SRTFDTMST
IVGDVLLSAA	FLAYGEWSSH	LSDAGIKFKA	ELSFPRLSWQ	SKTLPDNL	TVTSFLDDAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFKLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKKEAAETDV	VMREVEQVTA	EYLPIAQACS	SVFFILEQLS	LINHFYQFSF	LDIFDYVLHH
NPNLHGILFD	DLFLVVFRT	SRALEEVEFL	LESQNLNSYSK	HTLFKDVKTH	MTDHEENWKS
FLLLIRCFRP	DRLVPSVTGY	DASYRVDNQE	GFALADQAIA	LAARQGTWVL	LKNVHLAPSW
LGEKKLQTLN	PHRNFRLFLT	MEANPVIPIV	ILQSRVVMNE	PPPGIFLLAW	FHAVVQEDMS
AAFGTIDAWL	GAVAKGRANI	DPAAIPWDAL	KTLIKQSVYG	GRIDSDFDQK	ILDTFVDSLF
TPSAYNLDFP	EGTKLEHFLS	WTSWLFLPPT	AEQRKMRTLA	DDELEKCKEW	LAILPTTFAT
FAKQSVENQD	PLYRLFFREG	QVGRLLTQVR	RDLADVLMSH	LTKGTIPAHW	LRKVKKVP
LARRLQQQLDR	IASLDGGGLF	YPEAYITATR	AVAHRKKWSL	ETLDDLRLDIE	DVSDPGLVLE

GAAWSSS

>SP

FEVEHLKYAT	LATSSNLLTQ	KQITAIKTVR	NVIEYNEQYV	TKRLLVNIW	AFSGDSRGDW
IAWSSRVPVI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRKLPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQKVISLVE	SGGYRTSDM	AWVKLEHIQF
VGACGRVPLS	HRFLRLVMVD	YPGEISLNQI	YGTYNRAMLK	VVPNLRAYAE	PLTESMVSFY
LESQRRFTAD	IQAHYIYSPR	ELTRWVRGIY	EAIKPLEVLS	VEGLVRVWAH	EGLRLFQDRL
VNEEEKTWTD	ETIDATAMQH	FPTINILFSN	WTSKNKARLK	VFHEEELDQV	LVLFNVDLHD
VLRIDRVFRQ	TTLSRFVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLSTYK	VPDYFPIAYR	VVNALVHVHQ	TLYQINRRLS
RRQGRYPRHY	LDIFIQQYVRL	YNEKRDELER	HLHVGLDKLV	DQVEDLRKSL	AIKRKLKRMV
ADQQEAEQKK	ATSIEIQAAL	IEQDKNIAQR	KEAVMEELAD	AETISKQLRE	FMKKEYLSRP
NFNFETVNRA	SKACMISELE	ASIGRYKDEY	AVLIRVQGVK	DRSMKLLESL	SKTFDTMST
IVGDVLLSAA	FLAYGEWSSH	LTEANIKFKT	ELSFPRLSWQ	SKSLPTDLC	TVTSFLDDAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDI
CSRVTSQTL	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKKEAAETDV	VMKEVEQVTA	EYLPIAQACS	SVFFILEQLN	LINHFYQFSF	LDMFDYVLNH
NPKLERILFD	DLFLIVFRRT	SRALDVLEFL	LESGLNSYAK	HSLFQPVQSH	MQSNEQEWIS
FLLLIRCFRP	DRLVQSVIGY	DASYRVDNQE	GFSLADQAIA	VAARQGSWVL	LKNVHLAPSW
LGEKKLQTLN	PNRNFRLFLT	MEANPVIPIV	ILQSRVLMNE	PPPGVFLLAW	FHAVVQEDMA
SAFGTIDIWL	NSVAKGRNTI	DPMSIPWDAL	RTLKQSVYG	GRVDSDFDQK	LLDSFVDSLF
TPAAYNLDFP	EGTKLEHFLT	WPSWLSLPPS	AERRKMRSAL	DDDLERSKEW	LAGVPETFNT
ITKQTLNQD	PLYRLFFREG	EVGKLLAQVR	RDLADVLMSH	LTKGTIPTHW	LRKVKKIPN
FARRLQQQLDR	IAGLDGGGLF	FPEAYITATR	AVAHRKRWSL	ETLDDLCLDIE	KMNDPGLVLE

GASWSSE

>RF

FEVEHLKYAT	LATSPNLVTQ	KQVASIKTVR	NVIEYNEQYV	TKRLLVNIW	AFSGDAKGEW
IAWQSRVPAI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRKLPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	CGGYRPSDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYNRAMLK	VVPSLRAYSE	PLTDAMVEFY

LSSQKRFTTD	VQAHYIYSPR	ELTRWVRGIY	EAIKPLEVLS	VEGLVRVWAH	EALRLFQDRL
VTEEEKTWTD	ENIDSTAMQH	FPTISILFSN	WTSKYKARLR	VFHEEELDVO	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPQYFPLAYR	VVNALVHVHI	SLHQINLRSL
RRQGRYPRHY	LDIFIHHYVHL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEHKK	AASIKIQAAL	VEQDRNIEER	RAVVMADLAD	AEQMTKPLRD	LMKRDFLSRP
SYNFETVNRA	SKACMISELE	SSIRTYKDEY	ALLIRVQSKV	DRSMTLLGSL	SRTFDTEMST
IVGDVLLSAA	FLAYGEWSHH	LTEANVKFKL	ELSFPRLSWQ	SKSLPSDSL	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVDFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDV	VMREVEQVTA	EYLPLAQACS	SVFFILEQLN	LVNHFYQFSF	LDIFDYVLHH
NPNLKGILFN	DLFLVVYKRT	SRALDELEFL	LESGLMSYSK	NALFKPVREH	IQGHESEWVS
FLLLIKCFRP	DRLLQSVTGY	DASYRVENQE	GFTLADQAIA	TAARQGTWVL	LKNVHLAPSW
LGEKKLQTLT	PNRNFRFLT	MEANPVIPIV	ILQSRIIMNE	PPPGIFLLAW	FHAVVQEDMA
AAFGTIDTWL	NTVAKGRNTV	DPAVIPWEAV	RTLKVQSVYG	GRIDSDFDQK	LLDTFVDALF
TPAAYNLDFP	EGTKVEHFKT	WPSWLSLPPS	AERRKMRTLE	DDDLDRCNW	VSALPATFNS
IQKQSTDNQD	PLYRLFSREG	HIGKLLSQVR	KDLGDLMSQ	LIKGTIPTHW	RRYKVTKVVD
LARRLEQLDK	IAGLDNGGLF	FPEAYVTATR	AVAHKRKRWL	ETLDRDLRIG	NINDPGLVLE
GASWASD					

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FEVEHLKYAT	LATFPNLLTQ	KQVATIKTVR	NVIEYNEQYV	TKRLLVNIW	AFSGDAKGEW
IAWQSRVPAI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	CGGYRPSDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGELSLKQI	YGTYNRAMLK	VVPSLRAYSE	PLTDAMVEFY
LSSQKRFTTD	VQAHYIYSPR	ELTRWVRGIY	EAIKPLEVLS	VEGLVRVWAH	EALRLFQDRL
VTEEEKTWTD	DNIDSTAMQH	FPTISILFSN	WTSKYKARLR	VFHEEELDVO	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAMW	NGLSIFQIKV	SNKYTGDDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPSYN	PPQYFPLAYR	VVNALVHVHI	SLHQINLRSL
RRQGRYPRHY	LDIFIHHYVHL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRKLKRMV
ADQQEAEHKK	AASIKIQAAL	VEQDRNIEER	RAVVMADLAD	AEQMTKPLRD	LMKRDFLSRP
SYNFETVNRA	SKACMISELE	SSIRTYKDEY	ALLIRVQSKV	DRSMTLLGSL	SRTFDTEMST
IVGDVLLSAA	FLAYGEWSHH	LTEANVKFKP	ELSFPRLSWQ	SKSLPSDSL	TVTSFLDEAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVDFSPDI
CSRVTSQSLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKREAAETDV	VMREVEQVTA	EYLPLAQACS	SVFFILEQLN	LVNHFYQFSF	LDIFDYVLHH
NPNLKGVLFN	DLFLVVYKRT	SRALDELEFL	LESGLMSYSK	NALFKPVREH	IQEHETDWVS
FLLLIKCFRP	DRLIQSVTGY	DASYRVENQE	GFTLADQAIA	TAARQGTWVL	LKNVHLAPSW
LGEKKLQTLT	PNRNFRFLT	MEANPVIPIV	ILQSRIIMNE	PPPGIFLLAW	FHAVVQEDMA
AAFGTIDTWL	NTVAKGRNTV	DPAVIPWEAV	RTLKVQSVYG	GRIDSDFDQK	LLDTFVDALF
TPAAYNLDFP	EGTKVEHFKT	WPSWLSLPPS	AERRKMRTLE	DDDLDRCKEW	LSALPATFNS
IQKQSTDNQD	PLYRLFSREG	HIGKLLGQVR	KDLGDLMSQ	LIKGTIPTHW	RRYKVTKVVD
LARRLEQLDK	IASLDNGGLF	FPEAYVTATR	AVAHKRKRWL	ETLDRDLRIG	NINDPGLVLE
GASWASD					

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FEVEHLKYAT	LATSPHLETQ	KQVASIKTAR	NIIEYNEQYV	TKRLLVNLW	AFSGDARGEW
ISWSSRVPKI	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEV	GLNFSSFRKT
PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	SGGYRTSDM	AWVKLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEISLKQI	YGTYSRAMLK	VVPNLVNYAE	PLTDAMVLFY
LASQKRFTSD	TQAHYVYSPR	ELTRWVRGIY	EAIKPLEILS	VEGLVRVWAH	EALRLFQDRL
VTEDEKVTWD	ENIDMTAMQC	FPTINILFSN	WTSKNKARLR	VFHEEELDVO	LVLFNVDLDH
VLRIDRVFRQ	TTLRSFVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWVPKYN	PPQYFPIAYR	VCNALVYVHQ	TLYQFNKKLS
RRQGRYPRHY	LDLFLQHYVKL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKNKLKRMV
SDQQEAEQKK	AASIEIQAAL	VEQDRNIDQR	RNVVMADLAD	AQQMTKQLRE	LMKRDFLSRP

SFNFETVNRA	SKACMITELE	TSIKRYKEEY	ALLIRVQSKV	DRSMRLLES	SRTFDAEMST
IVGDVLLSAA	FLAYGEWSNH	LTEAGIMFKP	ELSFPRLSWL	SKSLPSDNLC	TVTSFLDDAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GNQDIDFSPS	FPSVEFSPDI
CSRVTSQTL	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVIDTLET
LKTEAAETDI	VMSEVEQVTA	EYLPIAQACS	SVFFILEQLN	LINHFYQFSF	MNIFDYVLHH
NPNLQGVLYD	DLFLIVFRRT	SRALDEYEFL	LEGGLQSHSR	HIIFKPVQVH	LRDHEDEWSA
FLILVKCFRP	DRLVQSVKGY	DASFRVENQE	GFSLADQAIA	QASRQGTWVL	LKNVHLSPSW
LGEKKLQTLN	PHRNFRLFLT	MEANPVIPVN	ILQSRILMNE	PPPGIFLLAW	FHAVVQEDMN
AAFGTIDTWL	HSVAKGRANI	DPMQIPWDIA	RTLKQIVYVG	GRVDSDFDLK	LLDTFVDSLF
TPASYNLDFP	EGTKLDHFMS	WPSWLSLPPS	AERRKMRLT	DDDLERCKEW	LGALPESFNT
LQKQADNQD	PLYRLFFREG	EVGKLLRQVR	RDLADVLMSH	LTKATIPTHW	LRKVKKIPN
LALRLQQLDK	IASLDTGGLF	FPEAYITATR	AVAHKKKWSL	ETLDRRLDVE	RVNDPGLILE

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FEVEHLKYAT	LATSPNLSSQ	KQIASIKTAR	NVIEYNEQYV	TKRLLVNI IW	AFSGDARGEW
IAWSSRVPII	EILYSWLSEH	KPLMLCGPPG	SGKTMTLFSA	LRLKPDMEV	GLNFSSYRKT
PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	LGGYRTSDM	AWVRLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEISLTQI	YGTYNRAMLK	VVPNLRAYAE	PLTDSMVSFY
LASQKRFTSD	IQAHYIYSPR	ELTRWVRGIY	EAIKPLESL	VEGLVRVWAH	EGLRLFQDRL
VTEDEKNWTD	ENINSTAMTH	FPTLNILFSN	WTSKNKARLK	VFHEEELDVQ	LVLFNVDLHD
VLRIDRVFRQ	TTLRFRVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGIYHESPE
NGLASRAATS	PALFNRCVLD	WFGDWRPSYK	PPEFFPTAYR	VVNALVYIHQ	SLYQINKKLS
RRQGRYPRHY	LDFIQQYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRLQRMV
SDQQAEEQKK	AASIEIQAAL	VEQDKHIEQR	RNIVMADLAD	AEQMTKQLRD	LMKREFLSRP
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IVGDVLLSAA	FLAYGEWSTH	LGDAISIKYA	ELSFPRLSWQ	SKSLPSDSL	IVTSFLDDAF
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CSRVTSQTL	QVLKVETDLM	KIQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVINTLET
LKREAAETDV	VIREVEQVTA	EYLPIAQACS	SVFFILEQLN	LINHFYQFSF	LDIFDYVLHH
NPNLKNVLF	DLFLLVFKRT	SRALDEYEFL	LESGLSHAK	HELKFPVREH	MKNNGEEWIT
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AAFGTIDAWI	NSVAKGRANI	DPVTIPWDIA	RTLKQSVYVG	GRIDSDFDQK	LLDTFVDSLF
TPSAYNLNFP	EGTKIDHFLS	WPSWLSLPPT	AERRKMRLA	DDDLERCKEW	LGALPESFST
LARQSSDSQD	PLSRLFQREE	EVGKLLHQVR	RDLADVLLSH	LTKGTIPGHW	MRYKVKKIPN
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GAAWSVD

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PNGVILSPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	CGGYRTADM	AWVRLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEISLQI	YGTYNRAMLK	VVPTLRAYAE	PLTDAMATFY
LESQKRFTTD	MQAHYIYSPR	ELTRWVRGIY	EAIKPLEMLS	VEGLVRVWAH	EALRLFQDRL
VSEDEKVVTD	ENINSTAMQY	FPTINILFSN	WTSKHKARLR	VFHEEELDVQ	LVLFNVDLHD
VLRIDRVFRQ	TTLRFRVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
NGLASRAATS	PALFNRCVLD	WFGDWLPAYK	PPQFFPIAYR	VVNALVYIHQ	SLYQINKKLS
RRQGRYPRHY	LDFISQYVRL	YNEKRDELER	HLHVGLDKLV	TQVEELRKSL	AIKRLQRMV
SDQQAEEQKK	AASIEIQAAL	VEQDKHIEQR	RSIVMADLAD	AEQMTKPMRE	LMKREYLARP
TFNFETVNRA	SRACMIAELE	ASIRTYKEEY	ALLIRVENKV	ERSMRMLDSL	SQTFDEEMST
IVGDVLLSAA	FLAYGEWSHH	LHEAHIKYKA	ELAFPRLSWQ	SKSLPSDSL	IVTSFLDDAF
LKVLESALRF	GNPLLIQDVE	HLDPIILNEIR	RTGGRVLIRL	GSQDIDFSPS	FPSVEFSPDI
CSRVTSQTL	QVLKVETDLM	KIQGEFRLRL	RTLEKLLLQA	LNESTGNILD	DDKVINTLET
LKKEAAETDV	VMREVEQVTS	EYLPIAQACS	SVFFILEQLN	LINHFYQFSF	LDIFDFILHH
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FLLLIKCFRP	DRLVSSVTGY	DASYRVEGQE	GFALADQAIA	VAARQGTWVL	LKNVHLAPSW
LGEKKLQTLN	PNRSFRLFLT	MEANPVIPVN	ILQSRVIMNE	PPPGIFLLAW	FHAVVQEDMS
AAFGTIDVWL	NSIAKGRANV	DPVSVPWDAV	RTLIKQSVYG	GRIDSDFDQK	LLDTFVDSLF
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LAKQAVENQD	PLNRLFLREG	EIGKLLNQVQ	RDLGDVLLSH	LTKGTIPTHW	LRVKVKKIPN
LARRLAQLDR	IAGLDTGDLF	FPEAYVTATR	AVAHRKKWSL	ETLDDLRLDIE	RVNDPGLVLE
GASWSSD					
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FEVEHLKYAT	LATAPNLLTQ	KEIASIKTVR	NVIEYNEQYV	TKRLLVNI IW	AFSGDSRGEW
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PNGVILAPVQ	IGRWLVVFC	EINLPATDKY	GTQRVISLVE	LGGYYRTSDM	AWVRLERIQF
VGACGRVPLS	HRFLRLVMVD	YPGEISLKQI	YGTYNRAMLK	VVPNLRAYAE	PLTDSMVAFY
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VLRIDRVFRQ	TTLSRFVAMW	NGLSIFQIKV	SNKYTGEDFD	LLANAEVPGL	FEGFTMNPPE
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SDQQEAEQKK	AASIKIQAAL	VEQDRHIEQR	RNVVMADLAD	AEQMTKQLRD	LMRRDFLSRP
SFTFEMVNRA	SKACMIAELE	ASIRTYKEEY	AFLIRVENKV	DRSMRMLES	SQTFDDEMST
IVGDVLLSAA	FLAYGEWSSH	LSEANIKFKS	EISFPRLSWQ	SKSLPSDSL	IVTSFLDDAF
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CSRVTQSOTLD	QVLKVETDLM	KVQGEFRLRL	RTLEKLLLQA	LNDSTGNILD	DDNVINTLET
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LGEKKLQTLN	PNLNFRFLFLT	MEANPVIPVN	ILQSRIIMNE	PPPGVFLLAW	FHAVVQEDMN
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GATWASD					
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LAKLVGYVSA	GTVEYLYSPA	EDVFFYLELN	NMVVALKELS	IRGDFRTTVE	YLIKLLETQV
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ALSGRIPGKL	EDSIRATIEN	AKTKTNPVET	MFRASLAPLV	DVVD RYKSGL	KVHEVIANLL
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GGSHQLPSAD	ILREVLAAFE	VYVRRAYRAY	ELLSRRQGSV	SDLTYLLGQN	IASFPDFKSL
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IRNIEPALAF	QLELSRLSNY	NLTPCFVMDS	RFFVRALIRP	GRIRGNMRMS	EVSAQYRHSD
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FIVNFHKGST	ILKSIGEKPL	HLQPVNQPYP	TLQPKRYQAH	LVGTTYVYDF	PDLFGKALHN
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SRLGVECLKG	SGLIATSRAY	DDIFTITLQR	AVQVEGQPII	LTKVLGREVY	TSNLQLGGTQ
IMGSDLEGVA	HIIQWLSYVP	ASKGTSPLVA	ISWDRDITYV	PPKGPYDPRW	FIEGKVDDKG
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YKKDSKDAAQ	ASEKLVARET	ELQKQIALLY	ADLHDRGRME	AKGCAKPTVW	KDARRRFYWN
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SLVHVFG

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LSKLVGYV SA GTVEYLYSHQ EDSFYFLELN NMVVALKELS IRGDFRTTVE YLINLLQTQA
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GLERLRD
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>TA

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>WC

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VTRRAIEKTW	LTASNAKKNR	VGSELKAMVR	SPPGYSIVGA	DVDSEELWIS	SVMGDAQFGL
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ASLSPDEAQK	AAERLYASTK	GKSIRHHCFG	RKFVHGGMES	LVFNKLEEIA	MSSKPQTPAL
GCGVTDALSK	EYLPETFGGD	YMTSRINWV	QSSGVDYLHL	LIVAMDHLIR	KYKIARYLI
SVHDELRYLV	KEEDQYRAAL	ALQIANLWTR	SLFAFKLGMS	DLPQGVAFSS	AVDIDKYLRL
EVNMDCVTPS	QPTPLPPGES	LDIKEILEKT	GGGSLSPDGY	KEPECLAHRA	QSVHWLKAQV
TDDFNEVKTL	D				

>SN

RLPDISFDLP	PLQGRITLDEH	FWNVGAESAQ	PWLGKAKNFA	DDMLVFDVET	LPNYSPPAIM
ATAASTSAWY	AWISPWLLGR	IVVGHNVSYD	RARIREEYHI	QRTTTRYIDT	MALHVAVKGI
SSGQRPSWIK	YNKAKRWED	LTSANSLADV	AKLHCGIEID	KTVRNDLMTH	SPSQILDDIR
TYLSYCATDV	STTHAVFTRV	LPAFLTACPN	PVSFAGVLTM	GSSFLSVNGT	WKEYLKAAEN
KFRELEESVK	DALKELAEVA	WKDDVWLSQL	DWSEKWPKWY	WELAKPRKGS	IDVTVRNRIA
PLLLQLKWRG	YPLFHSREYG	WIFRVRQREL	SFYEDADLHL	FYKVP HKDGE	DANVGSPLAK
PFMKYLQDGT	LTSPSSVAKE	ALDMNAQCSY	WISARDRVLN	QMVVWDSWGM	IVPQLITMGT
VTRRAIEKTW	LTASNAKSNR	VGSELKAMVR	APPGYAIVGA	DVDSEELWIS	SVMGDAQFGL

HGATAIGWMT	LEGTAAKTD	LHSTADILG	ITRDAKVFN	YSRIYGAGMR	HAQLLLQNS
ASMPKAKK	LAEDLYATK	GKNTHRDLFG	RKFWFGGSES	FVFNKLEEIA	LSDRPQTPAL
GCGVTYALSK	EYLPNEFGSD	YMPSRINWV	QSSGVDYLHL	LIVAMEHLIL	RYGIQARYLI
SVHDELRLV	KEEDKYRAAL	ALQIANLWTR	SQFAYRLGMD	DLPQGVAFS	AVDVDLILRK
EVFMTCEP	HQHKLEPGES	LDIQILEKT	DGGKLGDVVY	IEPDCLVHRA	PGPEFLQAQA
TDQFNEIKAL	A				
>SC					
VLPNTSFTLP	PLLGSTLDQH	FHAMGVEASE	PYLSFAKRFA	EDMLAFDVET	LPKVHQYPIM
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SSHQRPAWMK	YKKEKSWQD	VTSANSLRDV	AKLHCGIEVS	KEIRDDFMTS	TRESILADVT
DYLSYCAKDV	VTTHAVYCKV	LPGFLEACPH	PVSFAGILTM	GSAFLTVDG	WKRYIQSAEG
IFRKMEDGVK	RKLHMAENA	WKDDVWLSQL	DWEPKWPKWY	WEITKPKKGS	MDLTVNRRLA
PLLFRLSWLG	HPLFHSREHG	WVYRVRKRMV	SFYDPADDTL	FFKLPHKDGD	SANVGSPLSK
TFMASHASNGT	LSSPFNEAKE	ALELNAMCSY	WISSRDRIMN	QMVVWQQWGV	IVPQVITMGT
VTRRAIEKTW	LTASNAKKNR	VGSELKAMVR	APPGYAIVGA	DVDSEELWIS	SCMGDAQFGI
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GCGVTALVK	EYLPTEFGSD	YMPSRINWV	QSSGVDYLHM	LIVSMDHLIQ	KYDIKARYLI
SVHDELRLV	EEKDRYRAAL	ALQIANCWTR	CMFAYKLGMD	DLPQGVAFS	AVDVDHVLRLK
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VLPDVSFTLP	PLWGDNIDEH	FHFIGSTIYQ	PWITIAEDFA	ERMLVFDVET	MPEYSPYPVM
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SSHQRPAWNK	HRKAKKRWD	LTSANSLADV	ASLYCGIKVE	KEIRSDFMTH	SREEILEGVQ
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TYKELDDGVK	SRLVELAEQA	WKESPWLSQL	DWTPKWPKWY	WDLTRPRKGS	LDLTVSKRIS
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VTRRAMERTW	LTASNAKKNR	VGSELKAMVR	APPGYAIVGA	DVDSEELWIA	SVLGDAQFGM
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GCGVTDALTK	AYLTEGFGTD	YMTSRINWV	QSSGVDYLHM	LIVAMEHLMR	DFNIRARYLI
SVHDELRLV	KEEDKYRAAL	ALQIAHLWTR	TMFAYRLGLD	DLPQGVAFS	AVDVDKVLRLK
EVDMPCVTPS	QPNPIPPGES	LSIVDVLKKT	DGGSLYPGGY	VPPNTMQHRA	ESAYFLRAQT
TSELAEVRML	A				
>PI					
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VTRRAIEKTW	LTASNAKKNR	VGSELKAMVR	APDGYAIVGA	DVDSEELWIS	SCMGDAQFGL
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AGMLPDEAQK	LAKNLYASTK	GQSTQRDMFG	RKFWFGGTES	YLFNKLEEIA	LSDRPQTPAL
GCGVTDALSK	EFLPPGFGTD	YMTSRINWV	QSSGVDYLHL	LIVAMNYLVA	KYDIKARYLI
SVHDELRLV	KEEDKYRAAL	ALQIANLWTR	SLFAYKLGMD	DLPQGVAFS	AVDVDKVLRLK
EVDMPCITPS	QPEPIPSGES	LNITQILEQT	NGGSLWVDGY	QNPDCLAHRA	KGA AFLQAQA
TTEFAEVKHL	A				
>CC					
VLPDIGFQLP	PLQGSNLEH	FHRIGLHAAE	PWLSLSKEHA	ESMLTFDVET	MPKHHPYAVM
ACAASENAWY	AWISPWLLGK	VVIGHNISYD	RARIGEEYRL	EGTQTRFIDT	MSLHAAVYGI

SSHQRPAWMK	HRKARKRWED	ITAVNSLAEV	AKLHCGIEVN	KDARDDLFEG	NIEEVRNNLH
DYLDYCCNDV	HVTHEVYKKI	LPSFLQSCPH	PVSFAGILTM	GSSFLPVNQE	WEAYIERAEK
TYRDMQAKVE	KKLVSLAEDA	WKSDPWLSQL	DWTPKWPKWY	WEATKPRKGT	LDITTRGRIA
PLLLRLSWKD	WPLTHSREHG	WIYRVRSKPL	DFYDNADAHL	FYKLPHKDGE	KANVGSPGLK
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VTRRAIEKTW	LTASNAKKNR	VGSELKAMVR	APEGYAIVGA	DVDSEELWIS	SCMGDAQFGL
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SAMPLPEAAQK	LAENLYASTK	GKNTHRDIFE	RKFWFGGSES	YLFNKLEEIA	LSDKPQTPAL
GCGVITYALSK	EYLPTGFGSD	YLPsrINWV	QSSGVDYLHL	LIVSMQYLIQ	RYNINARYLI
SVHDELRYLV	TDQDKYRLAL	ALQIANLWTR	CMFAYKLGM	DLPQGVAFSS	AVDVKVLRK
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>SH

VLPDTSFTLP	PLTGPDLSH	FHRIGSACSH	PYLSLARS	EEALVFDVET	LPEYGPYAVM
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SSHQRPAWMQ	YRKSKRWED	ITSANSLADV	AKLHCGIEVD	KEIRNDFMTH	TPEEIMANVQ
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TYRELDTKVK	ERLLELAVEA	WRDDVWLSQL	DWTPKWPKWY	WELTKPKKGT	IDITTSRVT
PILLKLSWKD	CPLFHSREHG	WTYRIRQTPL	SFHDPSDETL	FHKVPHKDGE	SANVGSPGLK
TFIKFSQDGT	LKSPGDLANS	ALDMNAQCSY	WISARDRVLK	QMVVWEKWGI	IIPQVITMGT
VTRRAIEKTW	LTASNSKKNR	VGSELKAMVR	APDGYAIVGA	DVDSEELWIS	SVMGDAQFGL
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SGMLPEEAQK	LAENLYASTK	GKNTHRDIFG	RKFWFGGTES	FVFNKLEEIA	LSDRPQTPAL
GCGVITYALSK	EYLPAEFGSD	YMPSRINWV	QSSGVDYLHL	LIVSMDHLIQ	KYDIQARYLI
SVHDELRYLV	KKEDKYRLAL	ALQVANLWTR	SMFAYRLGMD	DLPQGVAFSS	AVDVDFVLRK
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>LB

VLPDTGFQLP	PLQGSNLLH	FHRIGSHAAQ	PWNLGKSFA	EDMLTFDVET	MPNYHPYPVL
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DYLDYCSTDV	SVTHQVYATA	LPDFLTACPH	PVSFGGILTM	GSSFLTVNEE	WDAYLARAER
VYRDLEEGVQ	NKLKLAEDA	WKDDVWLSQL	DWTPKWPKWY	WDATKPKKGT	LEITVRNRIA
PILLRLSWFG	WPLFHSREHG	WTFRVRLSPL	SFYDPTDDKL	FYKLPHKDGE	KANVGSPGLK
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SVHDELRYLV	AEEDKYRTAL	ALQIANLWTR	SLFAYKLGM	DLPQGVAFSS	AVDIDKVLRLK
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>PC

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VTRRAIEKTW	LTASNAKKNR	VGSELKAMVR	APNGYAIVGA	DVDSEELWIS	SVMGDAQFGL
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GCGITYALSK	EYLPAEFGSD	YMTSRINWV	QSSGVDYLHL	LIVSMEHLIK	KYDIKARYLI

SVHDELRYLV	KEEDKYRAAL	ALQIANLWTR	CMFALKLGLD	DLPQGVGFFS	AVDIDEVLRK
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>HI					
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SVHDELRYLV	KEEDRYRAAL	ALQIANLWTR	SQFAYKLGMD	DLPQGVAFSS	AVDVDHVLRK
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VTRRAIEKTW	LTASNAKKNR	VGSELKAMVR	APEGYAIVGA	DVDSEELWIS	SIMGDAQFGL
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SVHDELRYLV	KDEDRYRAAL	ALQIANLWTR	SLFAFKLGMS	DLPQGVAFSS	SVDVDRVLRK
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>PP					
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>GT					
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>TV					
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ACAASKHAWY	SWISPWLLGR	VVVGHNVSID	RGRVLEEYNI	NGTQTRFIDT	MALHIAVKGI
SSHQRPAWIK	HRKSKKRWED	LTSANSLADV	AQLHCDITMD	KEVRNDFMTS	TPEEIRDGIH
TYLDYCSTDV	AVTHAVFAKT	LPAFLTACPN	PVSFAGVLTM	GSSLLTVNEE	WDKYIANAER
TYRELEEKVK	MRLVDLAHEA	WKDDAWLSQL	DWTPKWPKWY	WDLTKPKKGT	LDLTVRNRIS
PILLRLSWLG	WPLFHSREHG	WTFRVRAATPL	VLADDADADL	FYKLPHKDGE	KANVGSPLAK
TFMKYSQDGT	LASPFEEAKG	ALDMNAQCSY	WISARDRVMN	QVVVWQKWGV	ILPQVITMGT
VTRRAIEKWT	LTASNAKKNR	VGSELKAMVR	APPGYALVGA	DVDSEELWIS	SVMGDAQFGL
HGATAIGWMT	LEGTKAAGTD	LHSKTASILG	ISRDQAKVFN	YSRIYGAGMR	HAVLLLLQSN
AGMLPEQAQK	LAENLYASTK	GKNTHGRLEF	RKFWYGGTES	FVFNKLEEIA	LSDRPQTPAL
GCGITYALSK	EYLPVFGFGSD	YMPSRINWV	QSSGVDYLHL	LIVSMEHLIA	KYNIQARYLI
SVHDELRYLV	KEDRYRAAL	ALQIANLWTR	SYFAYKLGM	DLPQGVAFSS	SVDVDRVLRLK
EVDMPCVTPS	QVPPIPAGES	LDILQTLEKT	HGGSLWADGY	SPPDCLAHRA	HSAPWLRAQA
TSDLDEIKRL	A				

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ASLISTLLTT	PEDGIADALD	PIATWNWPRS	DLHSWIKVLN	RFDGILENLV	NIHKVDQLQY
DTFTAEEKKT	LLGILKFEKL	LLENSTNRKL	FNSYDRLNCL	LYTSDLDILL	SVLQLILRPA
QQYSAQPTVS	AALKISTSR	QALAKRWPGL	REQGIELADL	VSAKIAEVEA	LASQINEVNF
TFYRNLRPFL	HLSKDASSIA	AEISSTANVP	EERFELLCRI	RTSQALAPAR	VKLVIIRLLA
LSIFAHTHNE	SEAAATLFLY	EPDLVPHISD	LLQLESQIRH	TVSEIAKADA	VVPQSFVEAL
LSFSLFLATH	TSGGNLVVGA	GLVPLLIQVI	ENRVAGRIGI	VSKTLTLLDN	VLYGYSNAFQ
IFVNSRGVET	MVQRIEYVD	EHLATSR	LKHLRSIHR	MMQSSGTSEG	LRGLIDSSLP
KSIKKIMDNR	GLFGVAVLPL	AINAMATFVH	NEPTYLPVIQ	EAGLPTSFYD	AVEGGLEPSI
EVIQATTNAI	GALCLNQAGQ	DQLTARPSII	PSVISVFTSE	KHLKVLQDKE	NASLIGSAID
ELIRHHPSLK	TQVFDAIGAM	LDRIESLGNT	WSEKEGKEHL	YRLENIIVSY	LDIVGKFLES
LFQHTDGLER	IGRLIALPCL	PYDFATSLLV	QVIRTMEVS	PSSTLSSLAN	QVKTSLNETR
EFWSVPGGQS	NLQFRKLVTL	HIRIALLSDI	YQGYAHGRSV	NSMLLGT LHR	SFIWENLVK
DGLNARALKH	LATHIPLAPF	FQAIVKRRNP	DEAHKKQIHA	TSSLVAGIMV	EHLYGTVVIS
LVTMLLFDEL	LLAFNRAGGK	KLLLALSGLK	VALHLLHSLV	SARPLFDSGQ	TQFLVTRKKD
TDPEYFEPHD	FLVKMRLAVL	PLVSELWRAD	WLPSIALGVA	KEVVQTLLVI	IGGEREPRSA
AERALIRSHN	NINAATEYLL	AHPELDLLRK	PLKADLGRVA	LTLVDEQPGI	RAFSPTADDL
HEHSLTVRFR	LLALILPTLP	KWLASHLLVA	QSVMLGEGE	RDVSTPLFVG	PSFEEPR SIL
LDVGIRLLKI	STLSSDELLA	DLRLLVQLTR	DHHSALVFVE	REGLSLLALQ	VHLIILLRHI
IEDKTTVISL	MRHEIKRRFA	HPQVLEATNF	VRHTSALVLR	DPEAFLEASK	ATLKLAQIES
VTQFLITELY	RVGKYACFLM	QCLTELLFSY	NSCKIAFVAY	SKKKHRPTLL	NFLLVDMISH
QPSTQKRG	LCNWAKSVIL	ALCVDVGKDS	SGEITSVRKF	VLDGLSKAIK	ESSTSELLEA
HYGKLIALSD	LCHRLTLVRT	ETPLHMAKLM	LEKGFVSTLT	SALNDVDLNY	PNVRTLVTTI
LKPLEQLTRV	AIKMGRDDTP	DLYRNSSLGM	YTDPTSHPLL	VDSGDRPDFQ	PLPTVLRWSE
ESKITHGQYA	TDRPTRFINH	LINALLPAAR	ERVTVMIGGN	PVDITDTGID	PTFLEALPDD
MREEVLNQHF	RERRTERATQ	AAESHISPEF	LNALPPEIRA	ELLDQAEQ	TEM DPASFLA
TLDPQLRQVV	LLEQDDGFLQ	TLPAIPSHRE	AVQLLDKAGV	AVLVRLLFYP	HKDTLQKILV
NICENAKTRA	EVLNLLLGVL	HDSSGDVASV	DKSFAQLTVR	PHLVAQRSIS	ALTYIVSSND
LSSVFFLTEH	ELPPGMRKSR	KGKTKERQSQ	THFPIALLLG	LLDKKVLLKT	STMIESVAAL
LATVTRPLAT	LKKSLLQHPP	QISEQILRLV	VNILT VGECS	SKTFQHCLSL	IQNLAYIPNA
KDTVASELRA	KAQDLGRSIL	RDLEDLVILL	STKFSPASAD	QAKLLRVLKT	IDYIFTIYDS
FNFAPLWKEL	SACLSAVDDS	GNVETLATVL	LPLIESLMVV	CKNVDSKDTA	HDLFLSFTDA
HRKALNLMVR	NNPSLMGSGF	ALLVNNPRVL	DFDNKRNYFS	QQLRRRREHH	TTLQLNVVRA
RVFEDSFHYL	QRKTGDQIKY	GKLSIRFYEE	EGVDAGGLTR	EWFTILARQM	FNPDYALFQP
CAADKLTYQP	NRASAINPEH	LSFFKF IGRI	IGKAIYDGRL	LDAH FARSLY	RQILGKPV DY
RDVEWVDPEY	YNSLIWILEN	DPSHLELTFS	FGENKVVDLK	ENGSTIPVSQ	ENKREFVQLS
AQYRLISSIK	EQIDALLGGI	YEIIPKDLIS	IFNEQEVELL	ISGTPDIDVD	EWRAATDYNG
YTSSDPVIVW	WWRALKSFNR	EERAKVLGFA	TGTARVPLSG	FTDLQGVQGN	QRFSIHKAYG
DPDRLPQAHT	CFNQIDL PQY	TSYEKLRAQL	LLAITEGSTG	FGFA	

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AELISKLLNT	PNDDLADALA	EIDVWKWPRS	DLNAWTKVLD	KFDEILEEVI	RDWDLQKLQV
NVFTPLTKSL	ICEILKFERL	LLENSTNRKT	FNSYDRLNDL	LFTSDLDVLI	LALNLLLRPS
QQYSAQPAVS	HALNISTPRL	QSLAKRWSGL	REYGVTLFDL	ARNNTAQLDV	LPADAREVNF
VYYKHVDERI	IREKEVTEIV	ADVLEAHTLS	SDKFELICRT	RCAQALFPER	EKLIIVRLLA
IAIYGHTHNE	SQASSALFLY	EPDLPMHVAE	LLQLDQNIRN	TIVETSNPES	KLPHSFVDAL
LSFVTFLASH	GAGGNMVVGA	GLIPLLVQVI	ENRLVQRLPM	VSKAMQLVDN	VLYGFANAFQ
LFANARGVDV	LVGRIQHEVD	GELPVARAAV	LKHTLRSLHR	MMQSSGTSEG	LRGLIDSSVL
ASVKKVVQYR	GLFGPSVLPI	AINIMATFVH	NEPTCLPTIQ	EAGLPLVFYK	AIEDGIEPVI
EVVQSIPNAI	GALCLNQAGQ	DQLAARPSII	PGILSIYTSE	RHLKMLKDKE	NAAMVGTAID
ELIRHHPSLK	TAVFESIKAT	MTKIETLGEA	YEV PENMKEW	YGLDNIIISF	FDFVCFRLEG
FFQHADGLER	IGRMTALPCL	PYDFANSILI	QVLRMLVEVG	PNEALFYFSK	LLATSLAETQ
PFWGSLGPDS	NYQFRSLVIL	HIRTTLVADI	FLAYTHGRGA	MGLLLGALHR	ACVWENILLK

DTLNAKALKH	LTHGLPLSPF	FQSIARRNP	DPVQKKQILN	ASSVVANIMV	EHLYYSVMLG
LVTILLVDEL	LFSFHKIGGQ	ELTRAQGGGLK	VALHLIHPLI	SAQPLFESGQ	TLLVMTRKKE
TDADYFESHH	FLVQLRLACA	PFLQRVWEAP	WILSCPLPLV	KTTVQAILEL	TSAENEPRSA
AERALVRTHN	NVNAATELLL	AHPQLQAARA	PILDGLCQRS	LQLVDNFPSD	IGFHTTSHDG
KEEALAVRCR	VLALVLPNVP	KWLAHLLVT	EMLLSVGQQP	SNVAVPILAG	PLYPEARPTI
FSYCLRLAV	PDLPRDELLS	TLRILVVVTQ	DHDTASQLVE	QDVISSLGSQ	SYVAIILRHI
AEDPGTVRSI	MTQEIKRFFS	QPHVIDVHGF	LRHCSSLALR	DPTIFVQATR	SLCQLQQPES
LVHVFVINEI	KSLKYSCFLM	QCLTELLFSY	DACKAAFLSF	SPKKPRTAAL	QFLLSELITF
GAVDNKGKAT	LCGWAMSVIV	ALCIDTSKEL	SNELVSIRKF	VLDSINRAIK	ELPSSES LDA
RYGRLLALSD	LCSRLLT VRF	ENSTHVAKIM	LEKNFVATLT	NALAEVDLNY	PHVRS LVAAI
LKPLENLTRI	AIKMSREEMP	DLYRNSALGM	YSENTVHPLL	MDKSES GGFD	PLLT VQRWAE
ESKIIHGNHV	AERAGKLANH	IIIALLPAAAL	QRVTVMVHGS	SVDITDMGID	PTFLEALPDD
IREEVINQHV	RDQRAAAVER	PSESQISPEF	LDALPPDIRA	ELIQQERMEG	EEMDPASFIA
SLEPPLRQVV	LLDSDDGFIQ	TLPKPPPPRD	AIQLLDKSGV	ATLVRLFFFP	QKNILFKVLV
NICENSKTRA	ELFNLLLSVL	QSGPGDLAAV	DRSFAQMTTR	PDLVAQRSVE	ALTYIVNANE
LSSFLFLTEH	ELPYALRKT	KGKGKEKQPQ	THYPIVLLLG	LLDRQSLLKT	TTTMDSVVTL
LSTVTKPLVG	LKKVVLQNP	QIPH SVLR LI	VNILTIGEC	SRTFQQSLTL	ISNLSYIPDG
RDVIAQELKV	KAQECGNIF	LDLNE LMASL	TSKFSSPSSD	QAKLLRVLKT	IDYMYTIYES
FNFTTLWRRL	GDCLAAIEER	PEIEHIATVL	LPLIESLMVV	CKHVGSKETM	EDLFVSFTDA
HRKILNSMVR	TTPSLMSGSF	SLLVQNPRIL	DFDNKRNYFT	QQVHRRREHH	STLQLNVRR
RVFEDSFQQF	HSK DGERIKH	AKLNVRFYDE	EGVDAGGVTR	EW FQILARQM	FDPNNALFQP
CAADRLTYQP	NKNSWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFAKSIY	RQLLGKPV DY
RDVEWVDPEY	YNSLCWILEN	DPTPLELTFS	FGRNRIFPLK	EGGEQISVTN	ENKREFVQLS
ASFRLYSSIK	EQIEHLVSGF	HDIIPKDLVN	IFNEKELELL	ISGTPDIDVD	EWRAATEYNG
YTSSDPVIVW	WWRALKS FNR	EERAKVLSFA	TGTSRVPLGG	FVDLQGVQGV	QRFSIHRAYG
DPDRLPQAHT	CFNQIDL PQY	SSYEMLRQQ	MLAISEGGEG	FGFA	

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VEVIEKLANT	SNDDLAEVLS	EVDSWKWPRS	DLNAWIKVLN	KFDVVLEEAI	RDYDVDKIQV
NIFTPATKKV	VCEILRFERL	LLDNSTNRKM	FSSYDRLNSL	LFTSDLDILI	LALNLLLRPS
QQYSAQPAVS	HALNISTPRL	QSLCKRWPSL	QESGISLLDL	ASNTASHVGA	IPTDVREVNF
TYYRHIDEEI	LSKKEPMDVL	ADIVEVHALS	DDKFELLCRI	RSAMALAPGR	EKLIIVRLLA
IAIFGHTHSE	SQATSSFLH	EPDLMTHIAE	LLQLDHGIRK	TVADV ANPEC	QLPHSFVDAL
LSFVTYLASH	AAGGNMVVGA	GLVPLL VQVI	ENRLTQRLAM	VSKIMQLVDN	VLYGFTNAFQ
LFCNGRGVET	LVGRIQHEID	GELPVARAAV	LKHTLRSMHR	MMQSSGTAEG	LRGLIDSSIL
QSIKKIIQYR	GLFGPSILPM	AMNIMATFVH	NEPTSLPTIQ	EAGLPEMFYQ	AIEAGLEPVI
EVIQAI PNAV	GALCLNQVGQ	DQLSARPSII	PGILSIFTSE	RHLKVLQEKE	NAVLI GTGID
ELIRHHPSLK	APVFDAIKST	LGKIEELGQS	FVVPEELEQW	YGLDNILVSY	IDVVC RFLEG
LFQHEDGLDR	LGRLTALPCL	PYDFANSVLV	QVMRTMAEVG	PNEALFYLMT	LVGSSLAETQ
TFWQSLDSQS	NQHFRSLITL	HVRITIMADI	FSTYAHGRAA	ISLLL GALHR	ACIWENILLK
AGLNAKALKH	LTHGLPLAPF	FQAVVKRRNP	DPTQKKQILT	SSAVIAEIML	GHL YHSIMLG
LITILLVDEL	LLAFHRIGGQ	ELIHAHGGLK	VALHLLHPLV	SSKPLFESGQ	TLLVMSRKKD
DDPDYFEPHN	FLVRLRLAIT	PLLHNIWDAF	WLVSAPLPLL	KSVIQT VLEL	TGGENEPRSA
AERALIRSHN	NVNAATELLI	SHPLLNIARE	PLKSNLVRQT	LRFVDEHPSI	IAFSPAAYDL
QEQLAVRCR	LLALVLLSIP	KWLAPHLLVI	ESLFTIADQP	PVATIPMECG	TSYHDARPIV
FEFCLKLFAN	PNLPRDELLS	ALRLLVLLTR	DYDVARELMK	RNGVALIASL	SYVAIILRHV
AEDKSALRGI	VLQEVNKLFS	QPRVLDVASY	MRSCGTMALR	DPHVFLQVTQ	SVCQLQEPES
LVHYLIGELI	KSIKFSCFLM	QCLTELLFSY	DACKTAFLSY	VPKKPKTAAL	HFLLS ELVSF
GTINARARIT	LCSWAMSVIV	ALCVDCSKEV	SPELVSVRKF	VLEAVSRAIK	DLSPAENPDA
RYGRLLALAD	LCNRLLT VRF	ENSTHIAKIM	LEKNFVSTLT	TALAEVDLNY	PNVRGLVASI
LRPLENLTRV	AIKMSREETP	DLYRNSS LGM	YPEVT VHPLL	LDPPAGHAFD	PLLTMQRWTE
EAKILNGKFV	SERGSTLANH	VTLALLPAAI	ERVTIMIHGN	SVDITDMGID	PTFLEALPDD
IREEVINQHV	RDQRAARIER	PPDSQISPEF	LNALPPEIRA	ELIQQERIEP	GDIDPASFIA
SLDPQLRQVV	LLDSDEGFIQ	TLPKPPSPRD	AIQLLDKSGV	ATLVRLFFFP	QKNLLFKVLV
NICENAKTRA	ELFNLLLSIL	QSGPGDLSAV	DKSFAQMTTR	PDLVAQRCLE	ALTYIVSANE

LSSLFFLTEH	ELPVGLRKS	KGKGKEKQPQ	THYPIVLLLS	LLDRHSLLKT	PSNMESIVAL
LSTVTKPLTS	LKRVLGNPP	QIPHSVLRLI	VNILTIGEC	GRTFQQSLML	IQNLSHISDA
RDVIAQELKV	KAQEFQGNII	IDLNELAMAL	ASRFSLPSSD	QAKLLRVLKT	IDYMYSIYES
FRFTPLWRRL	GDCLATIEEK	PDTEHIATVL	LPLIEALMVV	CKYVGSKEAM	EDLNFVNFTDT
HRKVLNLMVR	NNPSLMSGSF	SLLVHNARVL	DFDNKRNYFG	QQLHRRREHH	VTLQLNVRRRA
RVFEDSFQYL	QRKTGDQIKY	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNNALFQF
CAADRLTYQP	NKNSWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFAKSLY	RQILGKQVDY
KDVEWVDPEY	YNSLCWILEN	DPTPLDLTFS	FGRSRIFPLK	EGGESIPVTQ	ENKREFVQLS
ANFRLYSSIS	EQIENLLAGF	YEIIPKDLIT	IFNEQELELL	ISGTPDIDVD	EWRAATEYNG
YTSSDPVIVW	WWRALKSFN	EERAKVLSFA	TGTSRVPLGG	FVDLQGVQGV	QRFSIHRAYG
DSDRLPQAHT	CFNQIDLPOY	SSYEMLRQQ	LLAINEGGEG	FGFA	
>SS					
AILIATILRT	PTESLPDVLS	PIETWKWPRS	DLHWWIKVLN	KFDIVLEEII	RDYDVKLQV
NEFTPLTKKI	LLSVLAFEKL	LLENSTNRKL	FNSYDRLSSL	LFSADLDVVV	ADLQLLLRPA
QQYSAQASVS	HALNISTSR	QALAKRWPNI	RENDLEFSAL	ASKKQAEVEG	LPNEASEVNY
TFYRHLGPLA	HSSKSAINIL	ADTVESYSVP	NEKFELLAKI	RVARSLGKGR	VKLVTIRLLA
IAVYCLTQNE	NTAQTSLFLY	EPDLIAQVAD	FLQLDRGIRK	TVTDIANPQS	TLPNSFVEAL
IAFVTFIASH	ASGGNMVVG	GLIPLLIQII	ENKNALRLPI	VSKTMQLVDN	ISYGFNPAFQ
LFCNARGVDV	VVKRIEEEVN	GHLSIPRSSV	LKHTLRTLHR	MMQTSQTSEG	LRGLIDSSLT
KSIKKIIEHR	KLFGSSVLPI	AIHVMSTFVH	NEPTSLGVLQ	EAKLPETFYS	SVEDHIEPSI
EVIQAIINAI	GALCLNQGTQ	EQFTARPNI	PSIFSIFTSD	RHLKVLSEKE	NAVVFGTAVD
ELIRHHPSLK	DKVFAAISAI	FEQMEQKGD	LPEDTENESS	YKLDNIIVAF	VDVVSRLFEG
MFQHTDCVDR	LSRIIVLPCI	PYNYACSVMV	QLLRVMTEVA	PTQTVNKILE	FVKVALDDTK
EFWSTMDGKS	NDEFKRLVSL	YTRVTLADV	FSTYTHGRSA	LSLVLGSLHR	ACIWENIVLK
GEFNAKALKH	LVAEIPLTPF	FQCVVKRRNP	DTTAKRQVAG	IIDQVAKIVL	SHLYSTVMMG
LITLMI FEEL	LWSFTKFGGE	ELVHVSGLK	VALHLLHILV	SSKPLLDSPQ	TVLITTKKKE
TDPDYFEPHN	FIVMLRAIVL	PFMQELWDAP	WLVNAPVSVC	KSVVQTMLEL	MAGENEPRGA
ATRALTRMRN	NVAAAAYLL	AQPELNDARE	ALKETLGRRS	LQLLDEHHSI	KDFSPPAYEV
HEQPLAIRCR	LLALVLPVVP	KWLAPHLLVT	EALLVAGDEP	KPATLPVSDE	PCYPAAGDKI
FHICLKFLNY	PDLPQDELIA	VMRLLVYLTR	EPSKARELVK	LGGVASLGCQ	VYVAIIFRHI
IEDKTTLDNI	MRQEIKRFFT	NPRITDVTSF	IRNSGGMALR	DPKTFVHTVE	SMCQLDQSEA
MLHYLISELM	RVGKYACFLM	QCLTELLFSY	NSCKMAFVNY	TKKKHRPTML	NFLISELTSF
GTIDSKRRVM	LCNWAMSVIV	ALCLHIPKDV	PADLITVRRL	VLDSINRALR	DPLPVESEID
RYGRLLALSD	LCHRLTLVKP	DGALHMAKLM	LEKNYVATLT	TALAEVDLNY	PNVRTVVTSI
LRPLEQLSKI	AIKMGREETP	DLYRNSALGI	YPESAVHPLL	VDRSDIQDFG	PLPTQQRWAD
EAKMANGKFI	GDRVNRLSNH	VILALLPAAL	ERVTVLINGN	PVDITDTGID	PTFLEALPDD
MREEVLNQHF	RERRMARQEP	TADSQISPEF	LDALPPELRA	EILQQERAEP	VDIDPASFLA
SLDPHLRQVV	LMDQEDGFLQ	TLPKVNVPRD	AIQLLDKTGL	ATLVRLFFFP	QKSLLLKIFV
NLCENSKTRG	ELLNLLLNIL	QDGTGDVAHV	DKTFAQLSTR	PNLVVQRSLE	ALTFIVSANE
FASRFFLTEH	EIATGLKRSR	KGKGKEKQPQ	VQYPIVPLLA	LLDRQTLLKT	PSMMDSLAAL
LATITRPLAT	LKKIPPLQPP	TIPQASLRIL	VNILTAGECS	ARTFQSTLAL	IQHLAFLADV
RDTIAMELRA	RAQDLGHNIY	KDLDDLQVQL	AAKFSPASSD	QAKLLRVLKT	IDYMYSIYES
FRFTPLWSRL	GDCLDIVEEK	PDVEHMAATV	LPLIESLMVV	CKHVGVEAI	EDLFTSFTDA
HRKVLNLMVR	NNPSLMSGSF	ALLVQNPRVL	DFDNKRNYFY	QQLRRRREHH	GTLQLNVRRQ
RVFEDSFQYL	QRKTGEQIKY	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FNPDYALFQF
CAADKLTYQP	NRASWVNPEH	LTFFKFVGRI	IGKAIFDNRL	LEAYFARSVY	RQLLGKLVYD
RDVEWVDPEY	YNSLVWILEN	DPTPLDLTFS	FGVTSVVELK	EGGATIAVTN	ENKREFVQLS
AQYRLTNSIK	EQLNALLGGF	YDVIPKDLIS	IFNEKEVELL	ISGTPDIDID	EWRAATEYNG
YTSSDPVIVW	WWRALKSFN	DERAKVLSFA	TGTSRVPLGG	FGELQGVQGV	QRFSIHKAYG
DSDRLPQAHT	CFNQIDLPOY	SSYEKLRRQL	LLAVNEGEGE	FGFA	
>HI					
AELINKLSNT	PDEDLHEVLG	KVDAWTWPRS	DLNAWIKVLN	KFDAILEDVI	RDYDVKLQV
NVFTPTSTKKT	VCEILRFERL	LLENSTNRKT	FSSYDRINGL	LSSSDLDVVV	LALNLLLRPA
QQYSAQPAVS	RALSISTPRL	QSLAKRWPNL	REYGVSLVDL	VAKGKESVEA	LPAEAREVHF

TFYKHVDVHT	LESKPTMDVL	ADLTDAFNVP	EERFELMCRI	RSAQVLLPGR	EKLVIIRLLA
NAIFVHTHSE	HQALSSLFLY	EPDLISHISE	LLALDSGVRK	TVADVASSES	TLPQSFVDAL
LSFVTFLASH	AAGGNMVVGA	GLVPLLIQIL	ENRLANRLPV	VSKAMQLVDN	VLYSFANAFQ
LFCNNRGVDV	LVDRIEYEV	GQLPVVRAAA	LKHILRSTHR	MMQSSGTSEG	LRGLIDSSLL
KSIKKIIEHR	SLFGPSVLPL	AINIMACFVH	NEPTSLSIIQ	EANLPEAFYK	AVEAGLEPVI
EVIQSIPNAL	GALCLNQAGQ	DQLEARPTII	PGLFSIFTSE	RHQRLVDKE	NAVLIQTAVD
ELIRHHPFLK	AAVFEAIKST	LSKIEELGNA	YLVPDGIKSW	YSLNIIISY	IDVHCRFLEG
LFQHS DGLER	LGRLTELPCV	PYDFANSVLV	QVIRTMDVAD	RHGTLTFLAK	LVKVS LGETK
EFWNGVKQES	NSTFRKLVTL	HIRVTLLSDI	YATYSHARSS	TGLLLGS LHR	VCIWENVLLK
SAFNGKALRH	IANQIPLSPF	FQAVVKRRTP	DPPQRHQIVE	SAAVVAEVM	KHVYYTFMLG
LVTTLVLVDGL	LDAFFRKGGO	ELVHAFGGIK	VALHLLLPLV	SPKPIFDSSQ	TIILVTRKKD
GDPDYFEVHN	FLVQLRLVVF	PVARDLWEAS	WLVSAPQGLI	RSVVQVTLEI	VNGESEPRAS
VERALMRTHN	NVNAATELLL	ANPELDVLRE	EVKPNLGALA	LRLVDEHHAI	KRFAPDAAGS
REQHLAVRCR	LLALVLSTVH	KWLAALLLVA	EALLVLGEEP	RSITLPLLEG	PPYTEARPVL
FDVALGILRL	TNLPRDELLA	SLRLLVLLTR	DHEISLEFIK	RDGVPLLSQ	SYITIILRHI
VEDPAVVRFI	MRQELQRLFS	LPRVTDVQNY	VRHCSSMALR	DPETFVEVTQ	SLCELDRPET
VVHFLLAELM	KAVKYCGFLM	QCLTELLFSY	DICKVAFLSY	SPKRHRMVAL	HFLLYDLITY
GTISAHKRVI	LCNWAMSLIV	ALCVETSKDV	SPELISVRKF	VLEAVNRAIK	DLAPSDTMDA
RYGRLLALS	LCNRLLTVR	EGPTHIAKIM	LEKNFVSTLT	NALADV DLF	PNVRGVVAAI
LKPLEVLSKI	AIKMSREETP	DLYRNSSLGM	YADIVTHPLL	LERPESRQFD	PQITLQRWLE
EGKILHGKFS	ADRFLKVPNH	IILTMLPAAI	ERVTVMIHGS	PVDITDTGID	PTFLEALPDD
MREEVLNQHV	RDQRAARVER	PADSQISSEF	LDALPPEIRA	EILQQUERIEA	AEIDPASFIA
SLDPQLRQDV	LMEQDEGFIQ	TLPKPPPPRD	AIQLLDKGGI	AVLIRLLFFP	QKSSLFKVLV
NLCENSKTRT	ELFNLLLNIL	QDGTGDLASV	DRSFAQMTFR	PDLIAQRCLE	ALT FIVSSNE
LSSLFFLTHE	EVPASFRKSR	KGKGKEKQPQ	TQYPIVLLLS	LLDRESLLKT	PSILES VVSL
LDTVTRPLTS	LKKILLAHPP	QISHSVLRLI	VNILT VGECE	AKPFHHSLSL	IQHLSYIPDA
REVIAQELRA	KTQDFGHSLY	QDLDELANAL	ASKFSSPSSD	QAKLLRVLKT	IDYMYSIYES
FRFTSLWKRL	GDCLSIIEQR	PEIEHIATVL	LPLIESLMVV	CKYVGSSSEM	EDLFVTFTDA
HRKVLNV MVR	NNPSLMGSGF	SLLVHNPRVL	DFDNKRNYFN	QQLRRRREHH	GTLQLNVRRQ
RLFEDSFQYF	HRRTGEQIKY	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNNALFEP
CAADRLTYQP	NKASWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARS LY	RQILGKPV DY
KDVEWIDPEY	YKSLCWILEN	DPSLLDLTFS	FGVTKIVDLK	ENGASIPVTM	ANRREFVQLS
AQYRLYSSIK	EQLEHLLSGF	YEIIPKDLVA	IFNEQELELL	ISGTPDIDVD	EWRAATDYNG
YTSSDPVIVW	WWRALKSFNR	DERAKVLSFA	TGTSRVPLSG	FGDLQGVQGV	QRFSIHRAYG
DSDRLPQAHT	CFNQIDL PQY	SSYEMLRQQQL	LLAINEGGEG	FGFA	
>SH					
AELINKLHNT	PNDELHEVLS	EIDVWKWPRS	DLNAWIKVLN	KFDAILEEYI	RDYEVDKVQV
NVFTPITKKT	ICEILRFERL	LLENSTNRKT	FSSYDRINSF	LSSSDLDVVV	LALNLLL RPA
QQYSAQPAVT	RALSISTPRL	QSLAKRWSNL	REYGVSLVDL	VTSGKHIVEE	LPSEAREVHF
SFYKHIDAPT	LESKPTMDIL	ADVIEKYDVP	EERFELMCRI	RTAQVLF PGR	EKVIVIRLLA
NAIFVHTHPE	SQAMSSLFLY	EPDLIPHIAE	LLGLDRGVRK	TVNDVANPDS	TLPQSFVDSL
LSFVTFLASH	AAGGNMVVGA	GLVPLLIQII	ENRLPQRLSV	VSRAMQLVDN	VLYSFANAFQ
LFCNNKGVDV	LVDRIQYEID	GQLPVVRAAV	LKHILRSMHR	MMQSSGTAEG	LRGLIDSSLL
KSIQKVM EHR	SLFGPSVLPI	AINIMATFVH	NEPTSLAIIQ	EAGLPETFYK	TVDAGLEPVI
EVIQSIPNAI	GALCLNQAGQ	DQLTARPTII	PGLFSIFTSE	RHQRLVDKE	NAVLIQT TVD
ELIRHHPMLK	TSVF EAIKST	LSKIEDLGNA	YVVQDNVKQW	YKLENTIISY	IDVLCRFLEG
LFQHS DALER	LGRLTALPCL	PYDFGNSVLV	QVIRTMVEAA	PAETMTYLAK	LVRTSLDETK
EFWASQNE DS	NQSFRKLVTL	HIRVTLLSDI	YSTYAPSRGA	NSLLLGT LHR	VCVWENVVLK
SKLNGKALKH	LANQIPLSPF	FQAVVKRRNP	EPSQKQQILS	SAGVVADILI	KHLYHTFMLG
LVTTLIAD EL	LDAFYRKSGQ	ELIHAYGGIK	VALHLLHPLV	SPKPIFESSQ	TIILLSRKKE
TDPDYFEPHN	FLVKLRIAVL	PLTRELWEAE	WLAMAPHSLI	RSVVQVILEI	VNGDGEPRPA
AESALTRTHN	NVNAATEFLL	ANPELNTARE	SLKADIGRLS	LRLVDEHPAI	KEFSPQARGE
KEQALAVRFR	LLALVLAGVA	KWLAAMLLVS	EAMLT LGEEP	RTISLPLATG	PLYLDARPAL
FDLCIKLLSV	PKLTRDDLLA	SLRLLVL FTR	DHYQALAFVE	RGGIPLLSQ	SYITIILRHI

VEDDDELAVI	MRNEIARFLL	HPRVIDVPNY	IRHLNSMALR	FPIAFIKITS	EMCKLDHPET
LIHFLLGELI	RVVKYSGFLM	QCLTELLFSY	DFCKTAFLSY	SPKKHRTAAL	HFLNLDLVSY
GTVGHEYKRV	LCNWAMSVIV	ALCVDANRDL	TPEIVSTRKF	VLEAVSRAIK	DPAPSDSVDA
RYGRMLALAD	LCQRLTLVRF	ENPTHIAKIM	LEKNFVATLT	TALAEVDLNF	PGAKSLVACI
LKPLELLSKI	AIKMSREETP	DLYRNSSLGM	FPEVVTHPLL	LEPPHAREFD	PFSTLQRWGE
EAKVLHGKFS	AERFMKLANH	LILSMLPDAI	ERVTVMIHGS	AVDITDTGID	PTFLEALPDD
MREEVNVQHI	RDQRAARVER	PPDSQISSEF	LDALPPEIRA	EILQQERVEA	AEIDPASFIA
SLDPQLRQDV	LMDQDDGFIS	SLPKPPAQRD	AIQLLDKSGI	AVLVRLFFFP	QKNTLFKVLV
NLCENSKTRT	ELFNLLLNIL	QDGATDLAAI	DRSFSQMTVR	PDLIAQRCLE	ALTYIVTSNE
LSSLFFLTHE	ELSIGLKRSR	KGKGKEKQPQ	TQYPIVLLLG	LLDRQSLLKT	PSMLESVVSL
LDTVTRPLTS	LKKILLANPP	QIPHSVLRIL	VNILTVEGEC	AKPFHHSLSL	IQHLSYIPDA
REVIAQELRA	KTQDFGTSLH	QDLEELSNAL	ASKFSSPSSD	QAKLLRVLKT	IDYMYSIYES
FSFTPLWRR	GDCLSVIEQR	PEIEHIATVL	LPLIESLMVV	CKYVGATESM	EDLFVTFTDD
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CAADKLTYQP	NKASWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQILGKPVYD
RDVEWIDPDY	YKSLCWILEN	DPTALDMTFS	FGVMKIVPLK	EGGETLPVTL	ENRREFVQLA
AQYRLYSSIK	DQIENLLSGF	YDIIPKDLVS	IFNEQELELL	ISGTPEIDVD	EWRAATDYNG
YNSSDPVIVW	WWRALKSFNR	DERAKVLSFA	TGTSRVPLSG	FGDLQGVQGT	QRFSIHRAYG
DPDRLPQAHT	CFNQIDLPQY	SSYEKLRRQQ	LLAINEGGEG	FGFA	
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TFYKHIDHQT	IESQSAMDVL	KEAVNKYEIP	EKEYELLCRI	RAAGVLVPSR	QKYLTVRLLA
ISIFCHTHGE	TQAQSSFLY	EPDLVAHIAE	LLQSDKGVR	TVASVSDPLS	SMPQSYVEGV
LSFVTYLASH	TTGGNMLVGA	GLVPLLIQLL	DNRLPNRLAI	VSKTVQLTDN	VLYGFPNAFQ
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ELVRHHPSLK	APVFEAIKSS	LSKIEDMGSE	FEVPAKLKPW	YTLDNIVVSF	IDVFGFRLEG
LFQHVVDGLTR	LGRITALPCL	PYEFANSVLV	QVIRTLAEVA	TNETLAFLSG	IVKESLTETK
DFWFKVGGDS	NHEFHKLTVL	HTRITLLSEV	YATFGHPRTS	VALLLGALHR	TCVWENIVFK
VDPNGKALRH	LVTQIPLGPF	FQAIVKRRQL	ERTQRQQFLH	SGSVIADVLV	QHLYHTVMLG
HAAILLVEEL	VFAFYRAGGQ	ELVHSYGGLK	VALRLLLEPLV	TAKSLLEATQ	TQLVATTKEP
TDSAYFEARN	FLVKLRTAIL	PVVRTMWESS	WLPQVPVGV	RSIASVVLEL	AKGEGEPRSA
AERALIRMHN	NVAAAELL	AQPELAKARE	PLRNNMGKLA	LRLVDEQPSI	KEFQTTAYDV
HEQPMALRFR	LLALVMPVLP	KWLATHMLVA	ESLLTAGEDI	RSITLPLMTG	PTHPEARSFM
FDLCLRL LAV	PQLPRDEYLS	SLRLLVFLTR	DHSTASEFIA	RGGPLLLGAK	SYISLIVRHI
VEEPRVLQHT	MQREIKRLLA	HSNFPDP SHY	VRTCSAAALR	DPAAFIQATE	AVCQLHRPDE
VVYCLISELM	QTVKYPCFLM	QCLTELLFSY	DACKLAFLSY	SPRKHRTAAL	NFFLYDLISF
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RYGRLLALAE	LSHRLTLVRF	DSPTHIAKVM	LEKNFVSHLT	NALGEIDLNY	PNVRGLVTAL
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SLDPQLRQVV	LMDQDDGFIQ	TLPKPNAARE	SIQLLDKGQI	TVLVRLFFFP	EKNLLFKVLV
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TSSLFFLSEH	EIPAGLRRSK	KGKGKEKQSS	THYPVLLLG	LLDRPTLMRT	PSILESVMGL
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RVFEDSFQYL	QRKTGDQIKY	GKLSIRFYDE	EGVDAGGLTR	EWFAQILARQM	FNPDYALFQP

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YTSSDPTIVW	WWRALKSFNR	EERAKVLSFA	TGTARVPLGG	FGDLQGVQGV	QKFSIHKAYG
EQDRLPQAHT	CFNQIDLPEF	SSYEMLRQQL	LLAINEGGEG	FGFA	
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AELINKLLAT	PNDDLADVLS	QIESWKWPRS	DLNAWIKVLN	KFDAVLEEEVI	RDYDVKLQI
NPFTPATKRT	VSEILRFERM	LLENSTNRKM	FSSYDRLNSL	LFTSDLDILI	LAENLLLRPS
QQYSAQPSVS	HALSIQTPRL	LSLAQRWPRA	REYGLSLYDL	ATKGKAKVEA	LPPDAREVDF
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IAIFAHTHPE	SQATSSIFLY	EPDIITSIAE	LLQVDRGVRA	IVADIARPES	TITNSYVEAI
LGFLSYIASH	ASGGNMIVGA	GIVPLLIQLI	DNRLPKRLTM	VSKTMQLVDN	VLYSFTNAFN
LFCSSRGVTT	LVDRIGYEV	TEMPVARSAV	LKHLRLSLHR	MMQASGTSEG	LRGLIDTSIL
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FFWMLLDKQS	NRKFRLLTTL	HVRLTLLSDV	FATYTPTRVS	NSLLLGNLHR	ATVWENILLK
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FTAVLLVDEQ	LWNWYRAGGQ	ELAHALGVLK	VALHLLLPLI	SSKPLFESPQ	TALVMTRKPE
TDPDYFAPHD	FLVRLRLAIL	PLLQSMWQAP	WIKNVPPTIR	QPVIHAVLEL	IGAENEPRSA
VERALRRTHN	NISAATELLL	AHPELNAIRE	PLRASVSRIA	LTIVDEDPVS	KTFSPYAYDT
QEQLANRCR	LLALVLPVP	KWLAHLLV	EGLTLAASP	KAITLPVSVG	PALVEARKVV
FDFCLRLMAI	PDLPPDVLS	SLRIFVICTR	DHSMACEFVK	KDGLSRMGSS	SYVAIILRHV
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MVHYLIAELM	RVVKYACFLM	QCLAELLFSY	DSCKMAFLTY	SPKKYKSSTL	HFLLSLVTY
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ASSLFFLTEH	ELSAGLRRSK	KGKGKERQPQ	LQYPVVL	LLDRPTLLKT	PSIMEQVATL
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RDVIAEELKT	KAQEFQGALY	QDLDELANAM	VSKFSASTSV	QAKFLRVLKT	IDYMFTIYES
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RVFEDSFQHL	QRKTGDQIKY	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNNALFQP
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RDVEWVDPEY	YNSLCWILEN	DPTPLDLTFS	FGVQRIVPLK	EGGETLPVTN	ENKREFVQLS
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YTSSDPNIVW	WWRALKSFDR	DERAKVLSFA	TGTSRVPLGG	FTELQGVQGT	QKFSIHRAYG
DEDRLPSAHT	CFNQIDLPOY	SSYEKLQQL	LLAISEGATG	FAFA	
>PC					
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QQYSAQPAVS	HALSLNTNRL	TSLSKRWPSL	HDFDINLVAL	AGQGRAQVDA	LPNEAREVSF
TFYRHIDSQT	LETKPTMEIW	AEAIETYSVP	DERFELLCRI	RSARALTRAR	EKLIVIRLLA
IGLFCHTHPE	QTTFNNFLY	EPDLVHHIAE	LLQLDRGIRK	TITELANAES	NIPQAFVEAI
LAFVTTYIAAH	AAGGNMVS	GLIPLLVQVI	ENRLPNRLYA	LSKTMQLLDS	ILYGYTNAFQ
LFCNARGIEV	LVGRIEYEV	GKISVGRATV	LKHIMRSMHR	MMQSSGTSEG	LRGLDSSLV
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NLRDDNAGDS	NVAFRNLVTL	HVRIMLLSDI	FATFSQGRAL	TTL LLSLHR	SSIWENVMLK
EKMNMKALKH	LASQLPLAPF	FQSVVRRRNP	DPAQRQRILD	AADV VADVAV	KHLYYTMMLG
LVTILLIDEL	LQAF LRKGGQ	TLIHAHGGLK	VALHLLHPLI	SFKPIVDSPQ	SSFLLT TTKD
TEPGWFDPRN	LVVQLRIAIL	PLLKDIWQSS	WLISAPLGVS	KSVIHAVLEL	LNTDQEPRSA
AERALIRARN	NVSHATELLL	AQPELNE LRE	PLKEGLGSRI	LGLVDEHPAV	KKFSGAALDH
HEQPLSVRFR	ILALVLVTIP	KWLASHLLVT	EALLMMGE EP	RSVGLPLETG	PKFNEKRPVI
LDFCLRL LHV	PQLPRDELLS	SLRLFMLLTR	DHTLAL EFKV	RDGISALGTH	PYIASILRHI
VEDPATLKQI	MQQEVKAFLS	NPRLLEV TGF	VRSCGAMALR	DPQAFVQATA	EVCRLSSPDS
LVHFLISELI	KSVKYSCFVM	QCLTELLFSY	DSCKVAFLSY	SPKKHRTHAL	QFLINDLLSF
GTINAKQQIM	LCNWAMSVIV	ALCVDTTKDV	PPERASVRKF	VLDAINRAIK	DLPGHETGEA
RYSRL LALAD	LCYRL LTVRF	DAPTHIAKVM	LEKNFVATLT	NALAEVDPNF	PDIRGVVTGI
LRPLEYLT KI	AIKMSREEAP	DLYRNSSLGM	YPEGTT HPLL	LDRSDGRGFE	PLLTRDRWAE
EVKSLHGRFE	QSRITKIAGH	VVLALLPEAI	ERVTVLIHGN	EVDITDTGID	PTFLEALPDD
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SLDPALRQTV	LMDSDDMFIQ	ALPKPSTPRE	AIQLLDKHAI	AVLIRLLFFP	QKNLLSKVLV
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RDVIAQELCT	RAQEF GQRLY	SSLDELATAL	ASKFSPASSD	QAKLLRLLKT	IDYMYSIYEG
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RVFEDSFQYL	QRKSGEQIKY	GKLSVRFYDE	EGVDAGGVTR	EW FQILARQM	FDPNYCLFQP
CAADRLTYQP	NKASSINPEH	LSFFKFVGR I	IGKAIYDGRL	LDAYFARS LY	RQILGKPV DY
RDVEWVDPEY	YKSLCWILEN	DPTPLDLTFS	FGVTKLIELK	ENGAQISVTN	ENKREFVQLS
ANYRLYSSIK	EQIEALLSGF	YEIIPKDLIQ	IFDEKELELL	ISGTPDIDVD	EWRAATEYNG
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EVDRLPQAHT	CFNQIDLPQY	SSYEMLRQQ L	LLAIHEGGEG	FGFA	

>DS

AELIDRLINT	PNDDLHEVLS	QIDSWKWPRS	DLNAWMKVLN	KFDAILEEAI	RDYDIDNLQV
NVFTPLTKKT	VCEILRFERL	LLENSTNRKT	FNSYDRLNSL	MFSSDL DVL I	LALNLLLRPA
QQYSSQPAVS	HALSISTPRL	TSLAKRWPNL	RDYDLNLVDL	VTKGRAQVEA	LPTEAREVNF
VFYRHIDSKT	IESKPAMDIL	ADAIEAYHVP	DEKFELLMRI	RGAQAMTHAR	EKLVVVRLLA
TAIFGHTHSD	SQAQSSSFLY	EPDLITHIAE	LLQLDRGVRK	TVADVAQSTS	TLPQAFVEAL
FSFITFLATH	ASGGSMIVGA	GLIPVLIQAI	ENRLPNRLYV	VSKTMQLLDN	VLYGYTNAFT
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LIHYLIGELM	KTVKYPCFIM	QVLTELLFSY	ESCKIAFLSY	TPKKHRTAAI	QFLLSDLMTF
GTINARKQIT	LCNWAMSVIV	ALCVDTVKDV	PTDLVSVRKF	VLEAISRA LK	DLPSSDSP EL
RYSRL LALSD	LCHRL LTVRF	EVPT HIAKVM	LEKNFVATLT	NVLSEVDLNY	PNIRNVVSSV
LRPLEYLT KI	AMKMSREEAS	QLYRNSSLGL	FAENVTHPLL	LDRTEGRSLE	PLLTIQRWSE
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REVIASELRS	RAQEFQGSFL	AALDELAVAL	AAMFSSASSD	QAKLLRVLKT	IDYMYSIYET
FRFSPLWKRL	GDCLSIIEEK	PEMEHIATVL	LPLIESLMVV	CKYVGPKESE	EDLFVTFDTA
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CAADKLTYQP	NRASWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQLLGKQVDY
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ANYRLYSSIK	DQIESLLAGF	YEIIPKDLVS	IFNEQELELL	ISGTPDIDVD	EWRSALEYNG
YTSSDPVIVW	FWRALKSFNR	EERAKVLSFA	TGTSRVPLGG	FVELQGVQGT	QRFSEHKAYG
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>TV					
VEFINKLADT	PNEDLPEVLS	QIDSWKWPRS	DLNAWIKVLN	KFDEILEEAI	RDYDIDNLQV
NVFTPLTKKT	ICEILRFERL	LLENSTNRKT	FNSYDRLNNL	MFSSDLVLI	LALNLLLRPA
QQYSSQPAVS	HALSISTPRL	TSLAKRWPNL	RDYDINLVDL	VSKGKAQIEA	LPTEAREVNF
VFYRHIDSTT	IQSKPAMDIL	ADAIEAHNVP	DEKFELLMRI	RGAQVMTNER	EKLIVIVRLLA
TAIFGHTHSD	SQAQSSFLY	EPDLIAHIAE	LLQLDRGVRK	TVSDVAQPTS	TLPQAFVEAL
FSFITFLATH	SSGGNMIVGA	GLVPVLIQAI	ENRLPNRLYL	VSKTMQLLDN	VLYGYNNAFQ
LFCNAHGVDI	LVDRIQYEV	GKLSVARTAV	LKHTMRSMHR	MMQSSGTSEG	LRGLLDSSLL
KSVKKVLQNR	AIFGPSVLGL	AINIMSIFVH	NEPTCLPVIQ	ETGLPEAFYG	IVEKGLEPVI
EIIQSVPAI	GALCLNQAGQ	DQLAARNPII	PSIFYIFTSE	EHQRLVQEKE	NAVLIQTSLE
ELIRHHPSLK	DKVFIALKAT	MAKIEELGNS	YTPNEIKHL	YRLDNIIISY	IDVFGKFLEG
FFQHAEGLDH	LARLTALPCL	PYDFANSVLV	QVIRTMAEAA	TTETLAFLK	LVQDSLEECK
DFWESMEERP	NERFRKLVTL	HVRTSLLSDI	YATYSHGRAS	ATLLLGSLHR	SCIWENIVLK
ATLNAAGLRH	LVSQMPLSPF	FQSVVRRRSS	DVAQKQKIRE	AAGILADVLV	QHLTYTTMLS
TTTVLLVDEL	LAAFARVGGQ	ELTHAYGGLK	VSLVLLQPLV	SSRPLFDSTQ	TPMAITTKKD
TDAEYFEPHN	FLVRMRLAAL	PLIRTIWESS	WLTAAPISVS	KTVVQVMEI	LNAENEPRSA
AERALVRTRN	NVAAATELLL	AHPELNAARE	PFKEELGRRV	LSLVDEHPSI	HAFSPKAYDV
QEQLPFRVCH	LLALVLPVIP	KWLPAQLLVI	ECLLVIGEAP	RSITLPIAQQ	TRHAEARNAL
FEFCMRLLAV	PTLPKDELIS	ALRILVLLTR	DSSVAEGFVK	RGGVAMLGIO	SYIAIIMRHI
VENPTILQHV	MRQQLRQFFS	HPRVVDVGTF	VSGCNSAALR	DPEAFVKVTE	DLCQISNPET
LIHYLIGELT	RTVKYPCFIM	QVITELLFSY	DACKIAFLSY	SPKKHRTAAI	QFLLSDLLTF
GTINARKQIT	LCNWAMSVIV	ALCVDTTKDV	PTELVSIRKF	VLEAISRALK	DLPTSENTES
RYSRLLALSD	LCHRLLTVRF	EVPTIAKVM	LEKNFVSTLT	NVLAEVDLNY	PNIRNVVSSV
LRPLEYLTKV	AMKMSRDAAT	DLYRNSSLGL	FAENVTHPLL	LDRTEGRSLE	PLLTQWRGE
EAKMLHGRFE	QTRLSKLQNH	VIIALLPAAI	ERIMVTIHGN	PVDITDTGID	PTFLEALPDD
MREEVLNQHV	RDRRAAQVER	PADSQISAEF	LEALPPDIRA	EIIQQEAVEG	VDIDPATFIA
SLDPQLRQVV	LMDSDDVFIQ	SLPKALPSRD	AIQLLDKSAL	AALLRLLFYP	HKNLLYKVLV
NLCENAKSRT	DLFNLLLSIL	QDGSGLASI	DKSFAQMSVR	PELIVQRCLE	ALTYVVSSNE
LSSLFFLTEH	ELPFGRLRSK	KGKGKEKPPQ	THFPIVLLLS	LLDRPSILRT	PSIVESVVAL
LATVTRPLAG	LKKVLLANPP	HIPHHVLRLL	VNVLTAGECS	GRTFAQSLSL	IQHLSFIPDA
REVIASELRA	RAQEFQGSFL	SALAELSVAL	ASKFSTASSD	QAKLLRVLKT	IDYMYSIYES
FRFSSLWQRL	GDCLSIIEEK	PEMEHIATVL	LPLIESLMVV	CKYVGPKESE	EDLFVSFTDA
HRKVLNLMVR	NNPSLMSGSF	SLLVHNPRVL	DFDNKRNYFN	QQLHRRREHH	GTQLNVRRQ
RVFEDSFQYL	QRKTGDQIKY	GKLSVRFYDE	EGVDAGGVTR	EWQILARQM	FDPNYALFQP
CAVDKLTYQP	NRASWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSY	KQLLGKPVYD
KDVEWVDPEY	YNSLVWILEN	DPSPLDLTFS	FGVTKLVELK	EGGATIPVTQ	ENKKEFVQLS
ANYRLYSSIK	EQIEALLTGF	YEIIPKDLGS	IFNERELELL	ISGTPDIDVD	EWRSALEYNG
YTGSDPVIVW	WWRALKSFTR	EERAKVLSFA	TGTSRVPLGG	FVDLQGVQGT	QRFSEHKAYG
DTDRLPQAHT	CFNQIDLPOY	SSYEMLRQQV	LLAINEGGEG	FGFA	
>GT					

AELINKIHDT	PDEDLPEVLG	EIDSWKWPRS	DLNAWVKVLN	KFDGVLEEV	KDYEIDKVQI
NMFTPRTKKT	TSEILRFERL	LLENSTNRKI	FSSYDRLNSL	LSTADLDILI	LTLNLLLRPA
QQYSAQPSVA	QALHISTPRL	QSLAKRWPNL	REYDVGLVDL	VSNKGARVEE	LPSEAREVNF
TFYRHLNET	LDAPAMEIL	ADATETYAMP	DDKFELLCRI	RSQVLAAGR	EKLVIARLLA
IAIFCHTHSE	SQASAALFLY	ELDIITHIAE	LLQLDRGVRK	TVNDVANPDS	TLPFAFVDAL
LSFVTFIASH	AAGGNMVGGA	GLIPLLIQII	ENKLPQRLPV	VSKTMQLVDN	VLYGFSNAFQ
LFCNNRGVEV	LVDRIEHEID	GQLPVARGAV	LKHLRLSLHR	MMQSSGTAEG	LRGLIDSSIL
KSIKKVIENR	ILFGPSVLPI	AINIMSTFVH	NEPTSLAVIQ	EAGLPETFYK	TIEAGIEPVI
EVIQAI PNAI	GALCLNQAGQ	DQLSARPTII	PGLFSVFTSE	RHLKVLQDKE	NSVLIGSAID
ELIRHHPSLK	PPVF EAIKST	LGKIEDLGNA	YVVPEDLRPW	YGLDNIIVHY	IDVVGFRFLEG
LFQHTDGMER	LLRLTALPCL	PYDFANSVLV	QVIRTMGETA	PNEALVYLAK	QVKESLADTK
GFWESLEEDS	NRRFRNLVTL	HTRITLLSEV	YATYAHSRAT	AGFLLGALHR	ACVWENIIFK
TGLNAKALHH	LVKQIPLSPL	FQAVVKRRNP	DPVQRKHISD	AASIVANVML	KHLYYTVMLG
LVTILLVDDL	LVAFYRAGGR	ETLPAYGGLK	VALHLLLPLV	SSKPLFDSGQ	TAFATTRKED
TDPDYFEPHN	FLVRVRLAAL	PLMRELWEAP	WLVSAPLSLS	KSVIQIILQI	VSGEHEPRSA
AERALMRTHN	NVNAATEMLL	AHP ELDEARA	PLKAQMGRQA	LRLVDEHPSI	KRFSPQAYDM
QEQLSVRCR	LLALVLPPIP	KWLASHLLV	EALLVLAQEP	TTITLPLRIG	PDYAEARSTL
FNFCMRLAL	PNLPRDELLS	ALRLLVLLTC	DHQMAYQFAK	QGGVSLVGMK	SHITLLLRHI
VEDSTVLHNI	MRQEIKRFLS	HPRIVDVGSY	LKQCSSLALR	DPAVFIKVT	SICQLSQPDP
MVHFLITELH	QAVKYPAFLI	QCLTELLFSY	DTCKSAFLSY	SFKKHKAAAL	HFVLSDLISF
GTIQSRRRIM	LCNWAMSIIV	ALCVDTFRDI	PADVVAARKI	VIEAIGRAIR	DLPSSPEVDS
RYGRLLALAD	LCNRLLTVR	ESPTHIGKIM	LEKNFVATLT	NALGEVDLNY	PNVRGVVTAL
LRPLEHLTKI	AIRMSREETP	DLYRNSSLGM	YPEPTTHPLL	LDRSRTREFE	PFLT LQRWAE
QARIFHGKFV	SDRLNKL SNH	VVIALLPAAI	ERVTVMIHGS	PVDITDTGID	PTFLEALPDD
MREEVLNQHV	REQRTSRVER	PSDSQISPEF	LDALPPDIRA	EIIQQENLEP	SEMDAASIIA
SLDPHLRQAV	LLDQEDGFIQ	SLPKPPTPRD	AIQLLDKAGI	VILARLLFFP	HKNLLFQVLV
NLCENAKTRT	ELFNLLLNIL	QDGSGLSAV	DKSFSQMSFR	PDVIAQRCLD	ALTFIVNSSD
HFPLFFLTHE	ELPVGLRRSK	KGKGKEKQAAQ	TYPIVLLLLG	LLDRQSLLKA	PTIMESVVS
LATITRPLSS	LPKMLLANPP	QIPHAVLRFFV	VNILTAGECS	GRTFQQSLAL	IQHLSAIPDA
REVIAQELKS	RAQELGQSLY	ADLDALAEVL	ASKFASASSD	QAKLLRVLKT	IDYMYSIYES
FRFTPLWRR	GDCLSVIEER	PELEHIATVL	LPLIESLMVV	CKYVGPKESE	EDLFISFTDA
HRKVLNLMVR	NNPSLMGSGF	SLLVNNPRVL	DFDNKRNYFN	QQLHRRRDAH	TTLQLNVRRS
RVFEDSVQHL	QRKTGDQIKY	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNNALFQP
CAADKLTYQP	NSRSWINPEH	LIFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQILGKPV DY
RDVEWVDPEY	YNSLCWILEN	DPSPLDLTFS	FGTTKVIPLK	EGGTSIPVTQ	ENKKEFVQLS
AQYRLYLSTK	DQIEALLAGF	YEIIPKDLIA	IFNEQELELL	ISGTPDIDVD	EWRAATEYHG
YSSSDPVIVW	WWRALKSFNR	DERAKVLSFA	TGTARVPLGG	FTELQGVQGT	QRFSIHKAYG
DPDRLPQAHT	CFNQIDL PQY	TSYEMLRQQ	LLAINEGEGG	FGFA	

>PP

TELIEK LLET	PDEDLAEVLG	QIDSWKWPRS	DLNAWIKMLN	KFDAILEEVI	RDYDIDKLQV
NALTPTTKKT	VCEILRFERL	LLENSTNRKT	FNSYDRLNSL	MFTSDLDVLI	LALNLLLRPA
QQYSSQPAVL	HALSISTPRL	TSLAKRWPNL	RDYDVNLADL	VSKGKAQVEA	LPNEAREVNF
IFYRHIDSKI	IESREPM DIL	ADTIEAYSV	DEKFELLTRI	RAARALTSTR	EKLVTVRLLA
TAIFGHTHQE	SQAQSLLLLY	EPDLITHVAE	LLQLDRGVRK	TVAEVAQPSS	TLPQSFVEAL
LSFVTFIATH	ASGGNMVGGA	GLLPLLIQVT	ENRLSNRLYV	VSKTMQLLDN	VLYGFNNAFQ
LFCNARGVEI	LVERIKYEVD	GKLPVARTAV	LKHTLRSIHR	MMQSSGTAEG	LRGLLDSSLL
KSVKKIMENR	SVFGPSILPI	AINIMATFVH	NEPTCLPVLQ	EAGLSEVFYT	LVESGLEPVI
EVIQAVPNAI	GALCLNQAGQ	DQLTARPNII	PGLFSIFTSE	RHQRVLQEKE	NSVLIGTAIE
ELIRHHPAK	QSVFDAIKST	MDKIIELGNN	YIPPSDIKHW	YMLDNVIVSY	IDVLGKFLEG
FFQCQEALYR	LGRLTALPCL	PYDFANSVLV	QVIRTMAEAS	TLETIAFLVS	LVHQSL EDTK
QFWAEMEERS	NAQVRQLVIL	HIRTSLLSDI	YATYSHGRAT	TSLLLGALHR	ACVWENIVLK
AGLNVKILKH	LASQIPLAPF	FQAVVRRRNA	DPGHKQKIRE	TSSIVADVMV	KHLYYTVMLG
LTTILLVDEL	LVAFNQAKGQ	ELLHAYGGLK	VALHLLHPLI	SSKPLFESAQ	TALITTSKKE
TEPDYFEPHN	FFVKMRVAVI	PLLRDLWEAS	WLVTAPLGLI	KSIVLAAMEI	LNVEGEPRSA

AERALARTRN	NINAATELLL	AHPELNTSRE	GLKVG LGKQA	LRLVDEHPSI	KAFSPSAYDV
QEOPMGVRCR	LLALVLPNIP	KWLA AHL LVA	EALLVLGNDF	RSISLPLTTG	RRYPEGRAIL
FDFCLRL LAL	PSLPKDELLS	SLRLFVLLTE	DHQMAQDFLR	REGVTLLGIQ	SHIAIILRHV
VEDGPTIRHI	MHQEI RFFA	HPRAVDVGSY	VAGCNALALR	DPAAFVETTR	EICQLSQPES
LIHFLIGELV	KSVKYACFLM	QCLTELLFSY	DSCKLAFLSY	SPKKHRTAAI	NFFLSDVMSF
GTINAKRRIS	LCNWAMSIIV	ALCVD TAKDV	APELVSVRKF	VLEAVSRALK	DLPTSEDPEA
RYSRL LALAD	LCHRL LTVRF	DMPTHIAKVM	LEKNFVATLT	NALADVDLNY	PHIRGVVSAI
LRPLEYLSKI	AIKMSRDDTP	DLYRNSSLGL	CGEAAIHPLL	IDRTDVRGLD	PLLTVQRWLE
EVKMLHGRFE	QGR LTKLSNH	VILALLPAAV	ERVTVMIHGS	QVDITDTGID	PTFLEALPDD
MREEVLNQHV	RDQRAARVER	PADSHISPEF	LDALPPEIRA	EIIQQESLEP	AEIDPASFIA
SLDPQLRQVV	LMDSDDVFIQ	SLPKPPTQRD	AIQLLDKSSM	AILVRL LFFP	QKTLLYKVLV
NLCENSKTRT	DLFNLL LNIL	QDGSGLASI	DKSFAQMSVR	PELIVQRCLE	ALTYIVSSNE
LSSLFFLTEH	ELPAGLRRSK	KGKGKEKQPQ	THYPV LLLS	LLDRPSILKT	PSIVESVVT L
LATVTRPLAS	LKKVLLTRPP	VVPHTVMRFI	VNVLTAGECS	GRTFSQSLSL	IQHLSFVPDA
RDIIANELRS	RAQDFGHALY	TALDELA AAL	AAKFSSPSSD	QAKLLRVLKT	IDYMYSIYES
FKFAPLWQRL	GDCLSIIEEK	PELEHVATVL	LPMIESLMVV	CKYVGAKETM	EDLFVTF TDA
HRKVLNLMVR	NNPSLMGSGF	ALLVHNARVL	DFDNKRNYFS	QQLHRRREHH	TTLQLNVRRP
RVFEDSFQYL	QRKTGEQIKY	GKLSVRFYDE	EGVDAGGVTR	EW FQILARQM	FDPNYALFQP
CAADRLTYQP	NKASWVNPEH	LSFFKFVGRI	IGKAIYDGRL	LDAYFARS LY	RLILGKPV DY
RDVEWVDPEY	YNSLCWILDN	DPSALELTFN	FGVT KIVDLK	ENGRSIPVTQ	ESKREFVQLS
AQYRLYSSIK	DQIEALLAGF	YEIIPKDLIS	IFNEQELELL	ISGTPDIDVD	EWRAATEYNG
YTSSDPVIVW	FWRALKSFNR	EERAKVLSFA	TGTSRVPLGG	FTELQGVQGV	QRFSIHRAYG
DTDRLPQAHT	CFNQIDLPQY	SSYEMLRQQ L	LLAINEGGEG	FGFA	
>FP					
AELINKLLDT	PEDDLHEVLS	QIDTWRWPRS	DLNAWIKVLN	KFDAVLEDVI	RDYDIDKLQT
NVFTPATKKT	VCEILRFERL	LLENSTNRKT	YNSYDRLNSL	MFTSDLDVLI	LALNLLLRPA
QQYTAQPAVL	HALSISTPRL	TSLAKRWPNL	REYDISLVDL	VTKGRPQLEA	LQNEAREVNF
TFYRHVDSKT	IESKEPMDVL	ADTIDAYSVP	DEKFELLTRI	RAARAVNVSR	EKLVIARLLA
TAIFGHTHSE	AQAQSSLLLY	EPDLVAHVAE	LLQLDRGVRK	TVADVAQPTS	TLPQS FVEAL
FSFVTFIATH	ASGGNMV VGA	GLIPLLVQVI	ENRLPNRLYV	VSKAMQLVDN	VLYGFNNAFQ
LFCNSRQVDV	LVDRIEYEVV	GKLSVARAAV	LKHTLRSMHR	MMQSSGTSEG	LRGLLDSSLL
KSVKKIMENR	SVFGPTVLPI	AINIMSTFVH	NEPTCLPVVQ	EAGLPEAFYS	VVESGLEPVI
EVIQAVPNAI	GALCLNQTGQ	NQLAERPNI I	PGLFSIFTSE	RHQ RVLQDKE	NAVLI GTAVE
ELIRHHPSLK	QSVFASIKAT	MEKIYSLGKN	YTPTDDIKQW	YILDNTIVSF	VDVLCKFLEG
FFQHQEALDR	FGKLTALPCL	PYDFTSSLFV	QVIRTMAEGA	TNETVAFLIN	IVREALEDTK
ELWETLQEE S	NDR LRRFITL	HIRTSL LSDI	YATYAHGRAA	TALLLGALHR	ACVWENIILK
SKLNAQILKH	LASQIPLAPF	FQAVVRRRTA	DSAHKQKVRD	TAAIVAQVMR	QHLFYTVMLG
LTTILVVD EL	LVAFNVAGGQ	ELVHAFGGLK	VALHLLHP II	TAKPLLEASQ	TAMLQSSRKE
ADPDYFEPHN	FLVRMRVAII	SLLTRLWDAS	WLVSAPLGVT	KSAVQIVMEV	LNTEGEPRSA
AERALTRTRN	NVTAATELLL	AHPELND SRD	PFKNSMGAHV	LKLVD EHP SI	KSFSTRAYDV
QEOPMAVRCR	LLALVLP TLP	KWLA AHL LVT	EAILLAGDEP	KSITLPLTAG	STYPEAKGIS
FDFCMRL LAI	PMLPKDELIS	ALRLLVLLTR	ERRFADDFVR	REGLNFLGLQ	SHVAIILRHV
VEDMPTLQHV	MRQEIKRFFS	HPRMVDVSGY	VSGCNALALR	DPSVFVQITR	ELCQLSQPEA
LVHFLISELV	RSVKYSCFLM	QCLTELLFSY	ESCKVAFLSY	SPKKYRTAAI	QFLLSDMMSF
GTISARKRIL	LCNWAMSVIV	ALCVDTSKEV	PAELVSVRKF	VLEAISRALK	DLPASEKAET
RYSRL LALAD	LCHRL LTVRF	EVPTHIAKVM	LEKNFVATLT	NALAEVDLNY	PNIRGVVTSI
LRPLEFLSKI	AIKMSREEAP	DLYRNSSLGL	FPDVA VHPLL	VDPSQGRSLD	PLLTVQRWLE
EVKMLHGKFE	QARLNKLVGH	VVLSLLPAAV	ERVIVTIHGN	PVDITDTGID	PTFLEALPDD
MREEVLNQHV	RDQRAARVER	PADSQISPEF	LDALPPELRA	EILQQESIEV	ADLDPATFIA
SLDPQLRQVV	LMDSDDMLIQ	SLPKPPAPRD	AIQLLEKPAI	AVLIRLLFYP	HKNLLYKVLV
NLCENSKTRT	DLFNLL LNIL	QDGSGLAAI	DRSFAQMSFR	PELIVQRCLE	ALTYIVSFNE
LSTIFFLTDH	ELPAGLRRSK	KGKGKEKQPQ	THYPV LLLS	LLDRPSVLKT	PSIVESVVT L
LATVTRPLAS	LKKTLLAHPP	VIPHTVMRSI	VNILTAGECS	GRTFSQSLSL	IQHLSYVPDA
REVIANELRS	RAQDFGHSL L	TALDELVVAL	ASKFSPASSD	QAKLLRVLKT	IDYMYSIYES

FRFTPLWKRL	GDCLAIIEEK	PETEHIA TVL	LPLIESLMVV	CKYVGSKESM	EELFVSFTDS
HRKVLNLMVR	NNPSLMGSGF	SLLVHNPRVL	DFDNKRNYFN	QQLHRRREHH	GTLQLNVRRP
RVFEDSFQYL	QRKTGEQIKY	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNYALFQP
CAADRLTYQP	NKNSWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQLLAKPVDY
KDVEWVDPEY	YNSLCWILDN	DPSALELTFS	FGVTKIIDLK	ENGRSIPVTQ	ENKREFVQLS
AQYRLYSSIK	DQIEALLGGF	YEIIPKDLVS	IFNEQEVELL	ISGTPDIDVD	EWRAATEYNG
YTSSDPVIVW	WWRALKSFNR	EERAKVLSFA	TGTSRVPLGG	FTELQGVQGV	QRFSIHRAYG
DADRLPQAHT	CFNQIDLPQY	SSYEMLRQQ	LLAINEGGEG	FGFA	

>WC

VEFVDKLYNT	PDDELHQALG	QIDTWRWPRS	DLNAWTKVLN	KFDAILEEVI	RDYDIDKLQV
NVLTPVTKKT	VCEILRFERL	LLENSTNRKI	FNSYDRLNSL	MFTSDLDVLL	LTLNLLLRPA
QQYSAQPAVI	HALSLSTPRL	TSLAKRWPNL	REYDLNLAE	VSKGKAQVEA	LPNEAREVHF
TFYKRIDSKT	IESKEPMDIL	ADTIEAYNVP	EEKFELLTRI	RTARALVPAR	ERLVTIRLLA
TAVYGHTHSE	SQAQSSIFLY	EPDVIVHIAE	LLQLDRGVRK	TVADVAQPSS	TLPQPFVEAL
LSFVTTYIATH	ASGGNMVVG	GLVPLLIQVI	ENRLPNRLYV	VSKTMQLLDN	VLYGFNNAFQ
LFCNGRGVDI	LVDRIEYEVD	GKLSVARAAV	LKHTLRSMRL	MMQSSGATEG	LRGLLDSSLL
KSVKKIMETR	SIFGPSVLPI	AINIMATFVH	NEPTCLAVIQ	EAGLPEAFYR	VVEAGLEPVI
EVIQAVPNAI	GALCLNQAGQ	DQLTARPNII	PGLFSIFTSE	RHQVRVLDKE	NAVLIQTAVE
ELIRHHPSLK	QSVLDSIKST	MDTICQIASE	YVPAESDRHW	YLLDNVIVSY	IDVVGKFLEG
FFQHOGALER	LGKLTALPCL	PYDFATSVLV	QVFRMTSDTS	PGETVTFMTN	LIHEALADTR
EFWASMQEQS	NAHLRKLITL	HIRTSLLSDI	FSAYSHGRSS	VSLLLGALHR	ACVWENIVLK
AGLNARIFKH	LASQIPLAPF	FQSVVRRRST	DIVQRQKVRE	VASVFADVMG	KHLYYTVMLG
LSTILLVDEL	LTTFNVRVGG	ELVHAYGGLK	VALHLLHPIV	SVKPLFESPQ	TALMMTSRRD
SDSDFFDPHN	FMVRMRVAVV	PLLRDIWQAP	WLVSAPLGVC	KSVVQIAMEI	LNVEGEPRSA
AERALVRTRN	NVSAATELLL	AHPELNAARD	PIKDGLGAQA	LRIVDEHPSV	KAFSPAAYDV
QEQLAVRRCR	LLALVLP TIP	KWLA AHL LVT	EALLVADQDC	PTIELPFTIT	RHYQEARTIV
FDFCLRL LAV	PSLPKDELLS	ALRLFVFLTE	DHEMAKEFVR	RDGVGLVGIQ	SHVAIILRHI
AEDRHTLQHV	MRQEIRRYLA	HPRLVDAGSF	VVGCNALALR	HPESFIQVTQ	DICQLSNPET
LVHFILTELI	QSIRYPCFLM	QCLTELLFSY	ESCKVALLSF	SPKRHR TAAL	QLLLSDVMSF
GTINARKRIM	LCNWAMSVVV	ALCVDTSKDV	STELVSVRKF	VLEAISRQLK	DLPSSENPET
RYSRL LALAD	LT YRL LTVRF	EAPTHIAKVM	LEKNFVATLT	NALAEVDLNY	PNIRGVVTAV
LRPLDFLSKI	AIKMSRDEST	DLYRNSSLGL	FPEAVTHPLL	VDRSDARILE	PLLTVQRWLE
EVKMLHGRHE	QGRLSKLN NH	VILALMPAAV	ERVTVMIHGS	PVDITDTGID	PTFLEALPDD
MREEVLNQHV	RDQRAARVER	PPDSQISAEF	LDALPPELRA	EILQQESIEP	AELD PASFLA
SLDPGLRQVV	LMDSDDVFIQ	SLPKPSTPRD	AIQLLDKPSI	TILVRLFFFP	HKNLLFKVLV
NLCENSKTRS	DLFNLLLNIL	QDGSGLASI	DRSFAQMSFR	PELIVQRCLE	ALTYIVSSNE
LSSLFFLTEH	ELPLGLRRSK	KGKGKEKHPQ	THYPVVL LLS	LLDRPSILKT	PSIVESVVT L
LATVTRPLAS	LKKVLLTKPP	VIPHTVMRLI	VNILTAGECS	GRTFSQSLAL	IQHLSFVPEA
RDVIANELRS	RAQDFGHGLH	AALDELATAT	ASKFSPASSD	QAKLLRVLKT	IDYMFSIYES
FRFAPLWRR L	GDCLAIIEER	QEMEHIA TVL	LPLIESLMVV	CKYVGTKESM	EDLFTVFTDA
HRKVLNLMVR	NNPSLMGSGF	SLLVHNPRVL	DFDNKRNYFN	QQLHRRREHH	GTLQLNVRRQ
RVFEDSFQYL	QRKTGDQIKY	GKLSIRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNYALFQP
CAADRLTYQP	NKASWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQLLGKPV DY
KDVEWVDPEY	YNSLCWILEN	DPSALELTFS	FGVTKIVDLK	ENGRSTPVTQ	ENKREFVQLS
AQYRLYSSIK	DQIEALLNGF	YEIIPKDLIT	IFNEQELELL	ISGTPDIDVD	EWRAATDYNG
YSSSDPVIVW	FWRALKSFNR	EERAKVLSFA	TGTSRVPLGG	FTELQGVQGV	QKFSIHRAYG
DTDRLPQAHT	CFNQIDLPQY	SSYEMLRQQ	LLAINEGGEG	FGFA	

>CC

AEFIKRTLKA	SNEELTAILS	EVDVWKWPRS	DLNAWIKVLN	KFDAVLEEII	AEYDLDKLQL
KTFSPSTKRL	VSEILRFKRL	LMENSTNRKT	YNSYDRLNSL	LFTSDLDILL	LTLNLLLRPA
QQYSAQPAVS	HALSLSSGRL	QSLAKKWPHV	REYGAGLV DL	VSKGDAEVES	LPVEAREVNM
TFYRHIDERE	VLAKPAMEVL	ADAVKTYKVP	DEKFEILCRI	RTAAALDKGR	EKLLTARLLA
IAIYCHTHAE	SRASSTLFVY	EPDLIIHIAE	LLQVDNGVRK	TVNDLPHADS	TIPQSFVDAL
LGFLTYIVSH	QSGSSMVVGA	GLVPLLIQLI	ENRSPTRLTT	TSKTMQLLDN	VLYSAPTGFH

LFTTARGLDT	LVERIEYEVD	VDIPIARIAV	LKHMLRSMHR	MMQSAGTAEG	LRNLINMSLL
KTVKKIIEYR	GLFGPTILPF	AINIMTTFVH	NEPTSLTIIQ	EAGLPEAFYN	TIEAGIEPAI
EVIQAIPNAI	GALCLNEVGQ	AQLAKRPSII	PAVFSLFTSE	RHLKVLNDKE	NAVLIQTAID
ELIRHHPSLK	APVFSALKSA	LSRIEELGLE	YVVPSTLTQW	YQLDSIIVSY	LDVIGRFLEG
LFQHTDGLNR	LGRMTSLPCL	PYDFANSVMV	QVMRTLAEVA	TNDTIQHLSK	LVKESLDETA
DFWKTPSHES	NAKFRSLVTL	HIRITLLSDV	FSTYAHGRAA	IGLLLGLTLHR	ASIWENIVFN
AGLNAAAIAKH	ITHGLPLAPF	FQAMVKRRNP	DSAQRKQIQE	SSKIVADIML	KHLYYTVVLG
LFSLLLIEEQ	LYAFYRIDGK	ELVQAYGGLK	VVLHLLQPTI	TAKYVVESGQ	SHLIVTRKKD
TDPDYFEPHH	FLVKLRVAAL	PLTSLWQSG	WLLQAPVAVT	RAVVRAALLEV	MKGEGEPIID
AERALIRAGN	NVNAATELLI	SHPILNQGRD	ALGSSLSRHG	LTLIDEHQOV	KDFSPPHAYDV
QEOPMANRCR	LLALILENPP	KWLAGHLLVI	ESLFILSDEP	RAISIPAVG	PCRQAAKQVV
FKLCLRLLTL	EELQSEDELS	VLRLVLVLFTR	NREMADSLQ	ADALAQMGGS	SYIATILRHL
VEDSSTVKNI	MQQNIKRYFS	HPRVVEAGTY	VKNCSMALR	DPELFIATK	SLCQLNQPES
TVHLLITELI	SCVKYVFFVM	QCLSELLLSY	DSCKLAFLSY	SPKRFRSGTL	HFILNELLTF
GTINLRNKIM	LCSWATNMMI	ALCADTAKDV	SADLASVRKY	VLEALGRAIK	DLPSSDDNLS
KYGRLLALSD	LCNRLTTRVF	ETLTHIAKVM	LEKNFVATLT	ASLSDVDLNY	PHVRSVLTAI
LKPLQYLTKV	AIKMSHEETP	DLYRNSSLGM	YPEAIVHPLL	LNHRHGREFE	PLVTIQRWTE
EAKILHGEFV	AERVAKLNVH	VILTLLPEAI	ERVTVMIHGN	PVDITDTGID	PDFLEALPDD
MREEVLNQHV	RDQRAAQVER	PADSQISNEF	LDALPPEIRA	EILQQEAIEP	TEIDPASFIA
SLDPTLRQAV	LMEQDDGFLA	TLPKPKAQHD	AIQLLDKGGV	AVLVRLFFFP	KKSFLFRIFV
NLCQNSKTRT	ELFNFLLSIL	QDGTGDLAAV	DKSFAQMSVR	PDLVAKKCLD	ALTYIVTANP
HASLFFLTEH	ELPAGLRKSK	KGKGKEKQPQ	SHYPIVLLLG	LLDRKALLRT	PAIMDSVVNL
LASVTKPLTE	LKKVLLANPP	QIPHAVLRIL	VNILTVEGCP	AKTFQQSMNL	IQHLSYISDA
RDVIAQELRT	KAQEFGRVLI	ADLEQLMQTL	STKFSPASST	QAKLLRVLKT	IEHMYSIYES
FNFSGLWRKL	GDCLGLVGAK	PETEHIAATV	LPLIESLMVV	CQHVGTKEAM	EELFISFTDN
HRKLLNLMVR	NNPSLMGSGF	SLLVNNPRVL	DFDNKRNYFN	QQLHKRREHR	HTLQLNVVRA
RVFEDSFQHL	QRKTGDQIKY	GKLNVRFYDE	EGVDAGGVTR	EWVQILARQM	FDPNNALFQP
CAADKQTYQP	NKNSWVNPEH	LSFFKFVGRV	IGKAIFDGRL	LDAYFARSLY	RQLLGKPVVDY
KDVEWVDPEY	YKSLCWILEN	DPTVLDLTFS	FGVNRVIPLK	EGGDQIPVTQ	ENKREFVQLS
AQYRLYSSIK	EQIENLSAGF	YEIVPKDLIT	IFNEQELELL	ISGTPDIDVD	EWRAATDYVG
YTSSDPNIVW	WWRALKSFNR	DERAKVLSFA	TGTSRVPLNG	FTDLQGVQGV	QRFSIHRAYG
ENDRLPQAHT	CFNQIDLPOY	SSYEMLRQQQL	LLAINEGGEG	FAFS	

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AELITKLINT	STSELLDVLS	QIDSWKWPRS	DLNAWIKVLN	KFDGILEEII	NEYDLDKLQL
NPFTPTSKRL	IAEILRFERL	LLENSTNRKT	FSSYDRLNSL	LFTSDLDILV	LALNLLLRPS
QQYSAQPSVS	HALSISTTRL	QSLAKKWPHL	REYGIGLVDL	SCEGNAELEA	LPAEAREVNF
TFYRHIGEAT	VLAQPVMNVL	ADAIDAYSIP	DEKFEVLCRI	RTAASLVKDR	EKLVIIRLLA
IAIYGHTHPE	SQATSNFLY	EPDLIVHIAE	LLQIDHGIRK	TVGDVANEES	RLPHTFIEAL
LSFVTFIASH	ASGGNMVIGA	GLIPLLIQMI	DNKSPLRLQA	VSKTMQLVDN	VLYSFTNAFH
LFCGARGVDV	LVERIEHEVD	GELPIARVAV	LKHILRSMHR	MMQSSGTTEG	LRGLIDMSLL
RSVKKIIEYR	GLFGSSILPF	AINIMATFVH	NEPTSLTIIQ	EAGLPKTFYE	AIEAGIEPSI
EVIQAIPNAI	GALCLNESGQ	AQLANRPSII	PAIFTIFTSQ	RHLKVLIEKE	NAVLIQTAID
ELIRHHPTLK	SAVFEALKST	MSNIENLGLS	YRIPKDILQW	YQLDNMVSF	IDILGRFLEG
LFQHTDGLSH	LGRFTALPCL	PFDFAVSMV	QVMRTMTEVA	TSETLLHLAT	LVKDSLAEETH
GFWENVTEPS	NERFRCLVTL	HIRITLLSDV	FATYAHGRGA	IGLLGLSLHR	ASIWENIALN
AGLNASALKH	ITHGLPLAPF	FQAMVKRRNP	DAAQKKQMAE	SSKIVADIML	KHLYYSVILG
LLALLLYDDQ	LAIFYRADGK	DLLHAYGGLK	VALSLLHPPI	SSRPLLDGSG	TFLLVSRKKD
TDPDYFEPHN	FLVRLRTAAL	PTVRRLWESS	WLVQAPLGI	RAVVRTVLEL	ANGENEPRSA
AERALTRTHN	NVNAATEYLL	SHPSLNEARE	PLVASISRQS	LLLIDEHTQV	KAFSLSPDNA
HEQPLANRCR	LLALVLKHP	RWLASHLLVT	EALFTLAEEP	RTITLPIPVG	PKHLEARGVI
FDFCLRLLEV	DDLASDELLS	ALRLLVLVTR	DKDMASQFVN	REGDLLGGS	SYIATILRHV
VEDSTTVQHI	MKQAIRRYFA	QPRVVEIATY	VRNCSAMALR	DTALFIETTS	SLCQLGQPEA
LIHLLINELM	ATLKYLCLFM	QCLTELLFSY	DTCKLAFLSF	SPKRFRVTTL	HFLNLNELITF
GTINARNRIT	LCNWAMSVVV	ALCVDTSKDV	SSDLVSVRKF	VLETLSRAIK	ELSPSESMEA

RYGRLLALAD	LCHRLTLVRF	EVPTHLAKVM	LEKNFVATLT	TALSEVDLNY	PNVRNLVTSI
LRPLEHLTKI	AIKMSREETP	DLYRNSALGM	YPESTTHPLL	LDQRQGREFD	PLLTQLRWAE
EMKILHGDFV	TERIGKLINH	VTLALLPAAV	ERVTVIIHGS	AVDITDTGID	PTFLEALPDD
MREEVLNQHV	RDQRAARVER	PPDSQISSEF	LEALPPEIRA	EIIQQEAIEP	ADIDPASFIA
SLDPTLRQAV	LMDQDDGFIQ	TLPKFSPLHD	AIQLLDKAGI	AVLVRLFFFP	QKTLLFKALV
HLCENAKTRT	ELFNLLLNIL	QDGTGDLAAV	DKSFSQLSVK	PDLIAQRCLE	ALSYIVSAND
LSSLFFLTEH	ELPFGLRKTK	KGKGREKQPQ	THYPIVLLLG	LLDRQSLLRT	PAIMEAVVSL
LATVTRPLTS	LKKILLANPP	QVPHAVLRLI	VNILTIGECS	GRTFQQSLSL	IQHLSYIPDA
RDVIAHELKS	KAQEFQGTLT	TDLEELAGAL	AAKFSPASST	QAKLLRVLKT	IDYMYTIYES
FRFTPLWRRL	GDCLSVIEKK	PDTENIATVL	LPLIEALMVV	CKYVGSKESM	EDLFISFTDS
HRKVLNLMVR	NNPSLMMSGF	SLLVNNPRVL	DFDNKRNYFN	QQLHRRREHH	GTLQLNVRRR
RVFEDSFQYL	QRKTGDQIKH	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNNALFQP
CAADKLTYQP	NKNSWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQLLGKPVVDY
KDVEWVDPEY	YKSLCWILEN	DPTVLDLNF	FGVNQIIPLK	EGGESISVTQ	ENKREFVQHS
AQYRLYSSIK	DQIESLSTGF	YEIIPKDLIT	IFNEQELELL	ISGTPDIDVD	EWRAATEYNG
YTSSDPNIVW	WWRALKSFNR	DERAKVLSFA	TGTSRVPLSG	FVDLQGVQGV	QRFSIHRAYG
ESDRLPQAHT	CFNQIDLPOY	SSYEMLRQQ	LMAINEGEGG	FAFS	
>FS					
TEIIIKLLKT	SSEDLPDVLA	QINSWKWPRS	DLNAWIKVLN	KFDAIFEHVI	QKHDIDKLQV
NAFDAVTKKT	VCEILRFERL	LLENSTNRKL	FSSYDRINSL	LLTSDLDVLV	LSLHLLLRPS
QQYSAQPAVT	SALNISTPRL	KSLAKRWPNL	REYDVSLVDL	VSNGRSVVDA	LPSEAREVNF
TFYRYIDQPA	IESQNEMKIL	ADVIEKHSVP	DEKFELLCRI	RAAAVLANGR	EKLIVIVRLLA
IAIYGHTHSE	SSAMSSFLY	EPDLIPHAE	LLQLDRGVRK	TVADIADPDC	KLPHSFVEAL
LTFVTTYTASH	QAGGNMVVGA	GLVPLLQVI	GNTIPERLAV	VSKTMQLVDN	VLFSFANAFQ
LFCNNGRGEA	LVDRIEFEVD	GELPVARAAV	LKHTLRSMHR	MMQSSGTAEG	LRGLIDSSIL
KSLKKIIENR	GLFGPSVPI	AINIMATFVH	NEPTSLPVIQ	EAGLPEAFYK	AIEAGLEPVI
EVIQAIPNAI	GALCLNQAGQ	DQLAGRPSII	PGIFAIFTSE	RHLKVLQEKE	NAVLIQTAID
ELIRHHPSLK	VAVFESIKST	MGKIEDLANT	QVVGKDIEHW	YKLDNIVVSF	IDIVGRFLEG
LFQTTDGLER	IGRFTALPCI	PYDYANSLV	QIMRNMTDVA	PNETLAFLQN	LVKSSLAETQ
EFWGTMDHDS	NRQFRNLITL	HIRVALLSDV	FSTYAHGRAA	ISILLGTLHR	ACIWESILLK
AGLNAKALQH	LTHGLPLAPF	FQAIVKRRNP	DPVQRRQIMG	SASNIAQVML	KHIYFSIMLG
TITVLLVDEL	LSEFYRAGGQ	ELAHAYGGLK	VALRLIHTLI	SPKSLQESPQ	TLLMASRKKD
TDPGYFEAHN	FLVRVRVAFL	PLLKEMWEAP	WLAPAPLGVV	KSVVQAVMEM	MAGESEPRSA
AERALIRMHN	NVNAATELLL	SQPELNDARE	PLIGSIPKQA	LQLVDAHPTI	KSFSPHAHGV
KEEPLSMRCR	LLALVLPQVP	KWLAHLLVT	EALLAMGEQA	RTITLPLSAG	PSYPEARNIV
FDYCLRVLA	ADLPRDEFLA	VLRLLVILTQ	DHRVACQFVQ	RDGVALIGSQ	SYVAIVLRHV
IEDSSVLQQI	MKQEIKHFFA	QPRVLDVGNY	VRHCSAMALR	NPLIFVQLTK	SLCKLQSAEI
LVHYLIGELM	RVSKYACFIM	QCLTELLFSY	DSCKVALLSY	APKKYRMTVL	QFLLSDLVSF
GGINSQHRHL	LCNWAMSIVV	ALCVDTSKDV	SHDLISVRKF	VLEAVSRAIK	DLSQSGTIDS
RYGRLLALSD	LCHRLTLVRF	ETPTHIAKVM	LEKNFVATLT	NALAEVDLNY	PNVRSLVAGI
LRPLEHLTKI	AIKMSREETP	DLYRNSALGM	YAEATTHPLL	LDKPDGPEFD	PQLTLQRWGD
EVKTLHGKFV	SERVGKLANH	VVLALLPAAI	ERVTVMIHGS	AVDITDTGID	PTFLEALPDE
MREEVLNQHV	RDQRAARVER	PADSTISDEF	LDALPPEIRA	EIIQQERLEP	TDMDPASFIA
SLDPQLRQTV	LLDSDDGFIQ	SLPKLPVPRD	AIQLMDKTGV	AVLVRLFFFP	QKNHLFKVLL
NLCENTKTRM	ELFNLLLNIL	QDGTGDLAAV	DKSFAQMSVR	PELVAQRCLE	ALTYIVGANE
MSSLFFLTEH	EIPPGLRKSK	KGKGKEKQPQ	IHYPVVLLLG	LLERQSLLKT	PSTMESVVGL
LAIVTRPLTS	LKRTLLTHPP	QIPHAALRLI	VNILTVGECS	GRTFQQSLAL	IQNLSHIPDA
RDVIAQELKA	KAQEFQGSY	VDLDELATAT	ASKFSPASSI	QAKLLRVLKT	IDYMYSIYES
FRFTPLWRRL	GDCLAVIEEK	PDTEHIATVL	LPLIEALMVV	CKYVGSKESM	EDLFVSFTDA
HRKVLNLMVR	NNPSLMMSGF	SLLVNNPRVL	DFDNKRNYFT	QQLHRRREHH	NTLQLNVRRR
RVFEDSFQYL	QRKTGDQIKH	GKLSIRFYDE	EGVDAGGVTR	EWFAQILARQM	FDPNNALFQP
CAADRLTYQP	NKNSWVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQLLGKQVDY
KDVEWVDPEY	YNSLCWILEN	DPTALDLTFS	FGVSRIAPLK	EGGDTLPVTQ	ENKREFVQLS
AQYRLYASIK	EQIESLLTGF	YEIIPKDLVT	IFNEQELELL	ISGTPDIDVD	EWRAATEYNG

YNSSDPVIVW	WWRALKSFNR	DERAKVLSFA	TGTSRVPLSG	FVDLQGVQGV	QRFSIHRAYG
DSDRLPQAHT	CFNQIDLPOY	SSYEMLRQQ	LLAINEGGEG	FGFA	
>PI					
ADIITKLLTT	PNDNLDPVLG	QINSWKWPRS	DLNAWIKVLN	KFDTILEDVI	RDYDIDKLQS
KAFTPTTKKT	LCEMLRFERL	LLENSTNRKM	FSSYDRLNSL	LFTSDLDVLV	LTLHLLLRPS
QQYSAQPAVT	SALNISTPRL	RSLAKRWPNL	REYGVGLVDL	ASKGRPEVEA	LPSEAREVNY
SFYRHIDQQN	LESKEAMSL	ADTVERYSV	EEKFELLCRI	RSAAVLTKGR	EKLVIIRLLS
IAIFGHTHIE	AQAMSSFLY	EPDLIVHIAE	LLQLDRGVRK	TIADVGRDLC	KLPHSFVEAL
LSFVYYIASH	SAGGNMVVGA	GLVPLLQII	GNKIPERLAV	VSKTMQLVDN	VLYSFTNAFQ
LFCGAHVEA	LVDRIEHEVD	GELPVARAAV	LKHTLRSMHR	MMQSSGTAEG	LRGLIDSSIL
QSLKKIIEHR	ALFGPSVPI	AINIMATFVH	NEPTSLPIIQ	EAGLPEAFYK	AIEAGLEPVI
EVIQAIPIAI	GALCLNQAGQ	DQLSGRPSII	PGIFAIPTSE	RHLKVLQDKE	NAVLIQTAID
ELIRHHPSLK	TPVFIAIKST	LSKIEDLGNA	YVVPEDIQW	YKLDNMVVSF	IDIVGRFLEG
LFQTTDGLDR	IGRLTALHCI	PYDYANSLV	QVMRTMTDVA	SNETLLYLQK	LVIASLEETK
EFWGSVDDDES	NRRFRSLITL	HIRIALLSDV	FATYTHGRAA	IGILLGTLHR	ACILENILLK
AGLNAKALRH	LMHGLPLTPF	FQAIVKRRNP	DTAQRKQIMS	SSIAIADIML	KHIYLSVMLG
TVTILLLDEL	LAAFYRAGGQ	ELVHAYGGLK	VALHLIYPLI	SSKPLHESPQ	TLLIASRKKD
TDPDYFEGHN	FLVRLRLAAL	PLLKDLWEAT	WLVPAPLPVV	KSVVQAVMEL	TGAENEPRSA
AERALARTH	NVSAATELLL	SQPDLDDEARR	QLKAGMSKKA	LRLVDQHPSI	KAFSPFAHDV
REEPLAMRCR	LLALVLPSPV	KWLASHLLVT	ESLLTMGEQP	RTIILPIAAG	PPFLEARAIM
FDFCLRLAI	PDLPRDDLLA	VLRLFVLLTK	DHNVACQFVQ	RDGISLLGSQ	SYIALILRHV
IESPSVLQNI	MKQEIKRFFA	QPRIIDVGSY	VRHCNPMALR	DPEIFIHVTE	SLCQLQHPET
VVHFLVSELM	RTSKYSCFLM	QCLTELLFSY	DSCKIAFLSY	SPKKHRTATL	QFLLSELVSY
GTLNSRNRHS	LCNWAMSVIV	ALCVDSSKDV	TPDLVSVRKF	VLEAVSRATK	ELSPSESLDS
RYGRLFALSD	LCHRLILVRF	ETPTHIAKVM	LEKNFVSTLT	NALAEVDLNY	PNVRSLVAAI
LRPLEHLTKI	AIKMSREETP	DLYRNSSLGM	YAEATTHPLL	LDRFEGREFE	PMSTLQRWTE
EVKILHGKFV	SERVGKLGHN	VILSLLPAAV	ERVTVMIHGS	PVDITDTGID	PTFLEALPDE
MREEVLNQHV	RDQRAARVER	PPDSQISDEF	LNALPPEIRA	EIIQQERQEP	AEIDPASFIA
SLDPQLRQTV	LLDSDDGFIQ	TLPKLPPARD	AIQLLDKGGV	AVLVRLFFFP	QKNHLFKVLV
NLCENAKTRT	ELFNLLNIL	QDGTGDLAAV	DKSFAQMSFR	PELVAQRCLE	ALTIVSSNE
LSSFLFLTEH	EVPPGLRRSK	KGKGKEKQPQ	IHYVVLVLLG	LLDRQSLLKT	PSTMESVVLG
LATVTRPLTS	IKKILLTNPP	QIPHAVLRLI	VNILTVEGCS	GRTFQQSLAL	IQHLSYIPDA
RDVIAQELKS	KAQEFQGSY	ADLDELATAT	AAKFSPASSI	QAKLLRVLKT	IDYMYSIYES
FRFTPLWRR	GDCLGVIETK	PDTEHIATVL	LPLIEALMVV	CKYVGSKESM	EDLFVSFTDA
HRKVLNLMVR	NNPSLMGSGF	SLLVNNPRVL	DFDNKRNYFT	QQLHRRREHH	GTLQLNVVRA
RVFEDSFQYL	QRKTGDQIKH	GKLSIRFYDE	EGVDAGGVTR	EWQILARQM	FDPNNALFQP
CAADRLTYQP	NKHSGVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFSRSLY	RQLLGKQVDY
KDVEWVDPEY	YNSLCWILEN	DPTALDLTFS	FGVRRIAALK	EGGETLPVTQ	DNKREFVQLS
AQYRLFSSIK	DQIENLLAGF	YEIIPKDLVT	IFNEQELELL	ISGTPDIDVD	EWRSATEYNG
YTSSDPVIVW	WWRALKSFDR	DERAKVLSFA	TGTSRVPLSG	FVDLQGVQGV	QRFSIHRAYG
ESDRLPQAHT	CFNQIDLPOY	SSYEMLRQQ	LLAINEGGEG	FGFA	
>AS					
AALVQTIAS	PQDELAGLLA	SYTAWVWPRS	DLHGWINVLN	NFDGMFEKII	TAYAVDKLQT
APFSQPDKHL	LLEILRFERM	MFENSTNRKL	FSSYDRLNAL	LASSDLVVV	SVLQLLLRPA
QQYSAQPAVA	HVLHIASGRL	ESLSRRWTGL	RDHGLEVADL	VSKKSEEVDE	LPASASDVRF
TYYPQISSVA	TSNKEPMAIL	RETIEAHHVP	EEQFELMCKI	RTAWALGKSR	EQLVIIRMLA
IAVYAHTQSE	SHAQAALFLY	EPDLVSHLAE	ILQLDRDARK	VVADAANSES	TISSAFIETV
LSFVSYIASH	AAGGNMIIGA	GLVPILIQIM	DNTLPSRLSV	VSKTMSLLDS	VLYGFSNAFS
ILCNAHGVES	LVARIEHEVD	PRLSVARTNV	LKHLLRSVHR	MMQSPGTTEG	LRGLIDSSLP
KTICKIFQNK	ALFGPVVPLP	AINIMSTFVH	NEPTSLAIMQ	ESGLPETFYD	TIEGGLEPSI
EVLQAIPIAI	GALCLNQAGQ	DQLAARQNVI	PMLFATFTSE	KHVKVLHDKE	NAMVMGSAID
ELIRHHPNLK	TAVFDAVITT	LTKIEELGNA	YVDPKGGETP	FKLDNIIVTF	VDVIGRFLEG
LFQHTDGLER	LGRLFTLPSM	PADFGGTEFL	QVIRTIAEVE	PTQTLQKLAQ	HVKSSLEETR
DFWKDMGATA	NIKFRQLITL	NTRISMLAEV	YSAIAHGRSA	SASLLGDVHR	AFIWIENILLK

SAVNITALKH	LAGQIPVTLF	LQALIKRRNV	DSSHKKHATQ	MAKYVADILV	KHLYHTVMIG
FASVLLTGDL	LITIWQAGAQ	SLIHAFGGLK	VTLHLLHQMT	SSKALFESTQ	APLLITRLKD
TDKDYFEPHD	LLVKLRASVL	PLVARMWTPT	WVTGPPLSIT	KSIVQSLEI	MRADKEPRSA
AERALVRTGN	NVNAATEYLL	SHPELQALRA	KLQDGLAAHA	FKLVDEHPNI	KTFSPSAYDV
HEQPLAVRLR	LLGVILPPPP	KWVGALLLVA	ELLLALSEE	PAVTLPLAVG	PDYADARTKL
FGFALKLLQS	AELIRDDMLA	VLRLVLLTR	DATFASEFVR	RDGLARLGL	SYVAILMRHA
VEDKSILRSI	ITQEIKRFFN	QSRLVDISSE	MRGGISLVLR	DPKAFIDAAA	ANCELTGTVA
VVHFLTSELM	RVIQYACFLM	QCLTEMLFSY	EPCKTAFLSY	SRTKSRPTTL	HFLLEHIIISY
GDYHARRRML	LCNWASSVVV	ALSVDVSKDV	SADLVAVRKT	VVDAVNKAIA	ESSTTEPVAA
RYGRLLAMAE	LCHRLLSVKV	DVAIHTAKIM	LEKGFVATLT	NALADVDLNY	PHVKTILISAV
LRPLEYLTRI	AIKMGREETP	DLYRNSALGM	YPDVVTHPLL	MDRHDHADLQ	PQPTSTRWAE
EVQISHGKFA	PGRMEKLTNH	VVLALLPAAR	ERVIVRVNGA	DIDITDTGID	PEFLEALPDD
MREEVLNQHF	RERAIQQQI	PADSHISAEF	LEALPPDIRA	ELVQQESAEP	SDIDPASFLA
SLHPLRLQAV	LLEQDGTFLQ	ILPRPAVQRD	AIQLLDKNGI	ATLVRLFFFP	QKTLLHKVLV
NLCENSKSRI	ELNLLLSIL	HEGTGDLAV	DKSFSQLSVR	PNLVAQRSLE	ALAYIVSNNE
LSSLFFLSEQ	EVAAGLRRSR	KGKGKERQPA	VHYPVALLN	LLDRQLVLKT	VSIMDSVASL
LAIIVTKPLTT	LKSSLLSRPP	VIQAGALRLI	VNILTGGEC	SRTFQHSITL	IQNLACLPES
RDTIASSELRS	RAQDLGSSII	MDLDELVKQL	AVKFSPASSD	QAKLLRVLKT	IDYMSVYET
FKFSSLWRRL	GDVLSIVQEK	SDVEHTATVL	LPLIESLMVV	CKHVGTESM	EELFVGFTDA
HRKVLNLMVR	NNPSLMSSGF	SLLVHNPRVL	DFDNKRNYFN	QQLHRRREHY	GTLQLNVRR
RVFEDSFQYL	QRRRTGDIKY	GKLSVRFYDE	EGVDAGGVTR	EWQILARQM	FNPDYCLFQP
CAADKLTYP	NRASAVNPEH	LSFFKFVGRV	IGKALYDGR	LDAYFARSLY	RQLLGKPVYD
RDVEWVDP	YSSLCWLLN	DPAPLDMTFS	FGVTKVPLK	ENGASIPVTI	ENRREFVQLA
AEYRLYSSIK	DQIESLLSGF	YEIIPKDLIS	IFNEQEVELL	ISGTPDIDVD	EWRAATEYNG
YTASDPVIVW	WWRALKSFSR	DERAKVLSFA	TGTSRVPLGG	FVELQGVQGV	QRFSIHKAYG
GTDRLPQAHT	CFNQVDLPQY	SSYEMLRTQL	LLAINEGGEG	FGFA	

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AALVANIAAT	PQDELADLLA	SFPAWVWPRS	DLHAWIGVLN	LFDGILEGII	SSYAVDKLQV
NAFAPPAKNQ	LQEILRFERM	LLENSTNRKL	FSSYDRLNAL	LASSDLVVV	SVLQLLLRPA
QQYSSQPAVT	QVLNISSGRL	ESLSRRWSNL	RDYGLDVSDL	VSKKREEVDQ	LPPVASDLKF
TFYRYLPAVA	TSTQDPMIL	AEIIEAHDP	EERFELMCKI	RTAWALGKGR	EKLTVIRILA
IALYAHTQSE	SHAQSALFLY	EPDLVTHLAE	LLQLDRDVRT	VVADIAKADS	TTPSSFIEAI
LSFVSYIAASH	ASGGNMIVGA	GLVPLLIQVI	DIELPSRLSV	VSKTMSLLDS	VLYGFTNSFS
IFCNARGVET	LVTRIEHEVD	SGLSVARSNV	LKHLRSVHR	MMQSPGTTEG	LRGLIDSSLP
KSLKKIFVHK	ALFGPVVPL	ATNIMSTFVH	NEPTSLAIMQ	EQGLPEAFYD	TIDGGLEASI
EVLQAIPNAI	GALCLNQAGQ	DQLAARPTVI	PKLFETFTSE	KHIKVLHEKE	NAMVMGSAVD
ELIRHHPNLK	TTVFASVIAT	LAKIEELGNA	YVEPTGAETP	FKLDNIIVSY	VDVIGRFLEG
LFQHTDGLER	LGRLFTLPAM	PFDFGSTFL	QVIRTIAEVT	PTQTLQKLTQ	HVKMSLEETK
DIWQSLGAKA	NVRFRQLVTL	NTRVTMLAEV	YSAIAHGRSA	STSLGDLHR	SFIWENILLK
SALNIAAIKQ	LAGQIPVTSF	LQALIKRRNV	DSTHKKQASQ	IAALLADVLV	KHLYHTVMLG
FFSVLLCGEL	LVTLWRVGAQ	ALVHSFGGLK	VALHLLHTMT	SSKLLFESTQ	TPVLITRVKD
TEPNYFEPHD	LLIKLRATTL	PLIKRLWTD	WVSGPPLSIT	RSIVQNMLEI	MRADREPRSA
AERALIRMGN	NVSAATEYLL	SHPELDAARA	EIREYLVQHA	FKLVDEHPNV	KNFSPSAYDV
HEQPLAVRLR	LLGLVLSSPP	KWLGALLLVA	ELLLGLADEP	SAVTLPLSSG	PDYSDARTKL
FDFAFSLLQT	PELSREDLLA	SLRLLVLLTR	DSELADEFVK	RDGLPRLGLE	VYVAILMRHA
VEDSKVLRTV	MTQEIRFFFG	QTRVDMTTF	MARGASHLVLR	DPKAFMDATS	AMCVLTGSET
VVHFLVSELM	KVSRYACFLM	QCLTELLFSY	EVCKSAFLSY	SRSKSKPTVL	HFLLDHMIISY
GELTSRRRML	LCNWAASVVV	ALSVDVSKEI	STDLVAVRKN	VIDAVNKAIA	ESSPTETVAA
RYGRLMAMAE	LCYRLLTVKV	DVAIHTSKIM	LEKGFVATLT	NALAEVDLNY	PNVKNLISAI
LRPLEYLTRI	AIKMGKEETP	DLYRNSALGM	YADVTTTHPLL	VDKVEHIELQ	PQPTSARWAE
EIQITHGKSV	PERVERLSNH	VALRLLPAAR	QRVVVTINGA	EVDITDTGID	PEFLEALPDD
MREEVISQHF	RERGMQQPI	PADSQISAEF	LEALPPEIRA	ELLHQESVEP	SDIDPASFLA
SLDPLRLQTV	LLEQDDVFLQ	TLPRPAVQRD	AIQLLDRSGI	ATLVRLLYFP	QKSLLHKVLV
NICENSKSRT	ELNLLLLGIL	HEGTGELLAV	DKSFAQLSVR	PNLVAQRSLE	ALSFIVSNNE

LASLFFLSEQ	DQPAGLRRSR	KGKGKEKQST	VHYPVVALLG	LLDRQLVLKT	VTIMDSVASL
LAIVTKPLTG	LKSALLSRPP	TIPHNVLRLI	VNILTGGEC	SRTFQHSLAL	IQNLACLPDS
RDTIASSELRS	RAQDLGTSIY	MDLDELVKQL	AVKFSPASSD	QAKLLRVLKT	IDYMSVYET
FKFSSLWRRL	GDVLAIVQEN	PDVEHTSTVL	LPLIESLMVV	CKNVGATESM	DELFVSFTDA
HRKVLNLMVR	NNPSLMGSGF	SLLVHNPRVL	DFDNKRNYFN	QQLHRRREHH	GTLQLNVRRA
RVFEDSFQYL	QRRRTGEQIKY	GKLSVRFYDE	EGVDAGGVTR	EWFAQILARQM	FNPDYCLFQP
CAADKLTYQP	NRASAVNPEH	LSFFKFVGRV	IGKAIYDGRL	LDAYFARSLY	RQLLAKPVDY
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AEYRLYSSIK	DQIESLLAGF	YEIIPKDLVS	IFNEQELELL	ISGTPDIDVD	EWRAATEYNG
YSASDPVIVW	WWRALKSFSR	DERAKVLSFA	TGTSRVPLGG	FVDLQGVQGV	QRFSIHKAYG
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QQYTQGHGLS	QTLQVSSDRL	ESLAKSWPSL	REHGIEMLSL	IDNSDERLER	LPQETSEVHF
TFYRHLGSLA	QSSRSAQEVY	VDAVKHHDVP	EHKFDLLCRI	RTAHALGSGR	QNLTMARLLS
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LSFVGLIAQY	TSGGSLIVGA	GLIPQLIQII	SITAPERVSF	VSKSMSIVDH	VLYAYPTAFT
MFCNGRGVDV	LTERIKQEID	GLLQHGRSGL	LKHILRSMHK	MMQNSGTAEG	MRGLIDSSLL
KSVEKVIIYR	GVFGPSIFPI	AINVVATFLH	NEPTSFSAIQ	EAKMPDRVYD	AIESGVELSM
EVIQAFTNVI	GALMLNQAGQ	EQLSSRPSII	PSLFTIFTSE	RHLKVLQEKD	NAVLIPTYFD
ELVRHHPTLK	EAVFSSIMST	LGKIHALLGMV	YTPPESEKFW	YGLDNPVVDF	INAMCQFLNG
LFHQLGGLSR	LTDLLELPSL	PYNFGGAQLI	QLTRIISDVS	PRKILDHLSE	RVKRTLDTITK
PFWETLGENS	NYMFRNLVSL	HVQVALLSDI	YAAFAHNRSA	IGLLLALHR	AFIWESILFK
NALNAKALAF	LASQIPLSPV	LLAIAKRRGV	DVTQRKDFIS	VAETLATVMH	SHLYNTLMLT
FISMMLFDEL	LIQFRKQGGQ	ELVHATGGFK	VALHLLHSLI	SYKPMTDVHQ	IGNLGAVRSE
SDPDFYEPFD	FLVKMRLSIA	PIILETWQSS	WLVTAPPALS	RYVLLAVKDI	LAAENERRGA
ALHALERARN	NVTLATEYLL	SVPELDELRE	QIRVSFGTHA	LRLADAHPTI	EKFSPGALDV
QEIPLSVRRCR	LLALLLQPLP	KWLAPLFLAA	ESLLVAAEDI	KAISLPLLCG	PSYKDVQLVL
LDICIRLLHL	PSLPRDEGLA	VTSMVLQVLR	NRASAKAFVE	RGGVLRLSFH	SHAIIFRHL
MEDPATIEAI	MRFEIKRYFS	SSRAFDVSNF	ARSNGDMLVR	DPQTFVSVTK	SLCQLEHPEA
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GNFIRKQRMV	MSDCAIQILV	AICVDNSSTT	TTDFSNNVRKL	VLECIGKALR	ESSSVESIGD
RYGRLQALGE	LCYRLLTVRF	EACMQIAKIM	LEKSFVAILT	SVVSDIDLKF	PNVKNLVSGL
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REVIAQELKS	RAQDFGHNIS	SDLDRLITAL	ASKFSPASSD	QAKLLRILKT	IDYMYTIYDS
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ARYRLYSSIQ	EQIEHLLSGF	YEIIPKELIS	IFNEQEVELL	ISGTPDIDVD	EWRAATEYTG
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REFDQHTKQL	LCEILKFERF	LLENSTNRKM	FNSYDRLNGL	LFTSDLDVLI	ATLFLLLRPS
QQYSSQPAVS	HSLHISTTRL	ECLARFWPTI	RDHGVDMMLDF	VSKTQEKVEN	IPPEASEVNL

TFYRHLGPLS	LSSRSAMEIL	NDAVKSYQVP	EERYELMCRI	RMARSLGVGR	QKLMIARLLA
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LTFVIYLASH	TSGGNMVVSA	GLVPLLIQII	GITLPQRLAV	VSKTMQLVDN	VLYGFVNAFQ
MFCNSHGVEA	LTERIRHEVQ	GLLPVSRASV	LKHILRSMRL	MMQSSGTAEG	MRTLIDSSLL
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GFWQKSGATS	NVTFRKLITL	HNCLTLLADV	CTSYTHGQSP	ISLLLGSVHR	NCLFENITLK
NELNAHALRY	IAIQIPLVPL	FQALGRRRGH	DTSMRQQAIS	MAETIATVMC	GHLYNTFMLR
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VVHFLNLNELL	RFGKYACFLM	QCLTELLFSY	DQCKSAFLSF	GKKRSKPVAL	HFLLSDLVSV
GAFNTKKRVM	LCNWAMSVIV	ALCVDSTNNM	SVDLSAVRKA	VLDIAIAKAIK	EAPPGETIDS
RYGRLLALAD	LCHRLTLVRF	ETPLHLAKMM	LEKNFVAILT	NALSSVDLNY	PNVRSLIAAK
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HEEPLAVRCR	LLALILPTIP	KWLACHLLVT	ESLLVLADPE	RSITLPILTG	PSYSEARPIL
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VENKSTLESI	MRQEVRRWFT	QPRVVDVTSF	VRTCAPMAAR	DPQTFVKVTQ	SLCQLLHSES
VVHFMIGELL	RVGKYACFLM	QCLTELLFSY	DTCKHAFLSF	STKRHRTHAL	TFLLLDVLVSF
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LFQHTEGLDL	IARLLALPCL	PYDYANHIVV	QVIRIIVEVC	PVDALVHLIK	QVKESLRETQ
EFWETPREES	NDFFHRIITL	HVRVSL LADA	YSTYIQGRQT	VGPLLGS LHR	SCMWENIVLK
NAFNAHALRH	IVSQIPLGSF	FQSVAKRRAP	DEQQKQQA EI	MSATLADVLL	KHLYHTVMIS
LVTVLMFDEL	LVQFKKVGGO	ELVHVYGG LR	MVLNLLILLI	SHTPNTDMGQ	IAQYICRKPE
THPDFYQQND	FLVRMLAVA	PVIKELWEAE	WLLNAPPAVS	KNVIKCIQAI	ISGDNEPRES
AIRALARTQN	NVSYATDFLL	NNPELDIIRQ	SLVSNIGPLA	LRLADVQPVI	QKFSWAAYDV
QEEPLAVRCR	LLALILQPLP	KWLPALLLAM	ESLLVTSEEP	RPIPLVLVTG	PRYAEARSTL
FELCIRLLLI	PSLPRDELLA	TLRMLVQLTR	DHTMAAQFVH	RDGVSL LGFQ	SHIAIILRHL
VEDPKVLSSV	MTQEVKKLFN	QFKTTEVLTY	VRNSMAVAAR	DYQMF LDVTK	ELCSLVRPES
VVHFMIGELI	IVGKYACFLM	QCLSELLFSY	EQCKIAFLAY	PKKRPKSVAL	SFLLKELITF
GAFHARKRII	LCNWAMSVLV	ALCVDNSHTH	QHEIGSIRKL	VLESISKAIK	DAPSHE SIDA
RYGRTLALVD	LCYRLLT VRF	EAPMHLAKIM	LEKNFVATLT	GVINDIDLNY	PNMRSLVNTI
LRPLEYLT KV	AIKIGREETP	DLYRNSSLGM	IPDVTSHPLL	VDRGDGREFG	PLQTVTRWSE
EAKITHGKHL	QDRTQKLCNH	IILALLPVAR	ERVTVMIHGN	SVDITDTGID	PTFLEALPDD
MREEVLNQHF	REQRSARAEV	TVESQISTEF	LDALPPEIRA	EILREERLEP	TEMEAADFIA
SLDPQLRQVV	LLDSDDGSHR	FPRKTPQARD	AIQLLDKSGI	AALVKLLFFP	QKSVLNKVLL
NLCENSKSRT	ELFNLLLSIL	QDGTGDLAVV	DKSFSQLSVK	PDLVAQRCLD	ALSYIVETNE
LSSLFFLTHE	ELPVGLKKSK	KGKGKDRQPQ	SHYPIVLLLG	LLDRHALIKT	PSIMDAVAQL
LDAVTRPLTS	LKKILFSNPP	QIPHPALRSI	VNILT VGECS	GRTFQHTLAL	IQHLSFLPDA
RDVIAQELRT	RAHEFGQSLS	LDLDSLISAL	VAKFSPASSD	QAKLLRVLKT	IDYMYSIYET
FRFTSLWKKL	SECLTVVESK	SNVEHIATIL	LPLIESLMVV	CKNVGVKQSV	DDL FVEFTDE
HRKILNLMVR	NNPSLMGSGF	SLLVQNPRVL	DFDNKRNYFN	QQLRKRRESY	PSLHVPVRR
RVFEDSFQVF	QNKGTGEQIKY	GKLSVRFHHE	EGVDAGGVTR	EWFAQILARQM	FNPDYALFEP
CAADKQTYQP	NRASDVNPEH	LSYFKFVGRV	IGKAIYDGRL	MDAHFARSLY	RQLLGKRVVDY
RDVEWVDPEY	YKSLCWILEN	DPTVLDLTFI	FGKHEVIPLK	ENGTTLPVTM	ENRKEYVQLS
AQYRLHTSIA	KQIDSLLSGF	YEIIPKDLIS	IFNEQEVELL	ISGTPDIDVD	EWRAATEYNG
LTSSDPVIVW	WWRALKSFT	DERAKVLSFA	TGTSRVPLGG	FTELQGVQGV	QRFSIHRAYG
EPDRLPQAHT	CFNQIDLPEY	SSYEKL RQQL	LLAINEGGEG	FGFA	
>TA					
AALIADIIGT	STEDIPKFLG	AIISWRWPRS	DLNAWIKVLN	KFDTVLEDVI	REYDVDGLQV
RPFSPQTKET	ICAILNFERL	LLENSTNRKM	YNSYDRLNSL	LSTSDLDVLV	ATLM LLLRPS
QQYSSQPALS	HSLHISTQRL	ESLAKVPPSF	REQGIEMLDL	VSKWDK SIGE	LPQEISEVNF
SFYRHLGPLA	QTSRSTMEIL	ADAVKSHQVP	EEKFELLCRI	RNAWALGQDR	KKLVISRLLS
IAVYAHTHPE	NQAQSSSLFV	DSDLVSR IAD	LLQLDRGV RK	TVTDISRPES	ELSNSFVDAL
LSFVILLASQ	PMGGNMV VGA	GLVPLLIQVI	GINQPQRLPI	VSKTMQLVDN	VLYTFVNAFS
IFCNCRGVDA	LTERIRHEVD	GLLQLQRAGV	LKHILRSMHR	MMQSSGTTEG	MRGLIDSSLL
KSVDKIIQYR	GVFGPTALPT	AINIVATFVH	NEPTSLTAIQ	EAKLPETIYS	ALEAGIEPSF
EVIQAI PNVI	GALCLNQTGQ	DQLASHPSVI	PALFSILTSE	RHLKVLLDKE	NAV SIGSAMD

ELVRHHPSLK	TIVFSALVAT	LKQIEDLGNN	YVPPEEIRQW	YSLDNLVVNF	IDALGRFLEG
LFQHTEGMDC	FGRLLALPCL	PYDYANSVIV	QVVRTMAEIA	PTETLGHL SK	QVNESLDETN
KFWQAPQSRS	NDFFRMVTL	HIRLTLLSDV	YATYTHGRNA	VALLLGALHR	VCIWENIALK
SSLNALALKH	LASQIPLSPF	FQAIARRNP	DESQKQAAA	VSAVLAETMF	KHIYHTVMLG
LITVLLFDDL	LVHFVRLGGQ	ELVHVFGGLK	MALHLLYSLI	SHKPSADAAQ	IALFISRKPE
SHPEYYEPHD	FLVKMRLAVA	PLIKEIWQSS	WLTSAPPAVN	KYVIQSVQEI	IVGANEPRAS
AIRALQRSHN	NVSFATEYLL	THPELSTLRE	TFTTDLGPIM	LRLVDAHPSI	EKFSPMAFDV
QEEPLSVRCR	LLALVVQPLP	KWLAALLLAM	EIFLTCAEEP	RPVPLVLLTG	PPYTEARATL
FDLSLRLRLI	PSLPRDELLA	ILRVLVVLTR	ERDYADKLIG	QGGVPLLGIQ	SHVAIIFRHL
VEDRILLESV	IGQEIKRIMT	GSRTIDVLSY	VRSSQALAAR	DPRI FIDVTQ	KCFTLVRPDI
VIHHLLGELL	RVGKYACFLM	QCLSELLFSY	DQCKLAFLSY	PKTRSKSTAL	NFILSELVSF
GAFNARKRII	LCNWAMSVIV	ALCVDGGSNG	SVDLPSVRKL	VLESISKSLK	ESPPHETIDA
RYGRTLALAD	LCHRLLTVRF	ETPMQLAKIM	LEKNFVATLT	NVLTDIDLNY	PNMRSLVAAI
LRPLDFLT KI	AIKMGREETP	DLYRNSSLGM	FTESMAHPLL	IDRSETTEFG	PQPTSQRWLE
EAKILHGKHL	QERMQRCLNH	LVLALLTEAR	ERITITIHGN	EVDITDTGID	PTFLEALPDE
MREEVLNQHF	REQRAARADQ	RADSQISPEF	LDALPAEIRA	EILQQERVEP	AEINAAD FIA
SLDPQLRHVV	LLDSDDAILQ	SLPKATQIRD	AIQLLDRTGI	AALLRLLFFP	QKNTLHKVLL
NLCENSKSRT	DVFNLLLGIL	QDGS GDVALV	DKNFAQLSFR	GDVVVQRCLD	ALSFIVETNE
LSSLFFLTEH	ELPASLKRSK	KGKGKEKAPQ	SHYPIVLLLG	LLDRQTLVKT	PSILDSIAAL
LDAVTRPLTS	LKKILLNPP	QIPHPALRLI	VNILT VGECS	SRTFQRTLAL	IQHLAYLPDA
REVIAQELKV	RAQEF GQNLL	VDLDALISAL	ASKFSPASSD	QAKLLRVLKT	IDYMYSIYES
FRFTPLWRKL	GDCLSVVESK	ANVEHVSTIL	LPLIETLMVV	CKNVGLKPSV	DDL FVSFTND
HRKILNLMVR	NNPSLMGSGF	SLLVQNSRVL	DFDNKRNYFN	QQLHKRREHY	PTLQINVRR
RVFEDSYHTL	QGRSGDQIKY	GKLSVRFYGE	EGVDAGGVTR	EW FQILARQM	FDPNYALFEP
CAADKQTYQP	NQASSINPDH	LLYFKFVGRI	IGKAIYDGRL	MDAHFARS LY	RQLLGKPV DY
RDVEWVDPEY	YKSLCWILEN	DPSILDLTFI	FGQH KIIPLK	ENGASIPVTL	ENRKEYVQLS
AQYRLHSSIK	DQIESLLSGF	YEIIPKELIS	IFNEQEVELL	ISGTPDIDID	EWRAATEYNG
YTSSDPVIVW	WWRAMKSFNR	DERAKVLSFA	TGTSRVPLGG	FVELQGVQGV	QRFSIHKAYG
DPDRLPQAHT	CFNQIDL PQY	SSYEKL RQQQL	LMAINEGGEG	FGFA	

>FM

AALIADILAT	PTNGLSELLA	PIDAWKWPRS	DLNAWIKVLN	KFDAVLEDVI	REYDIDGLQV
KPFTRETKEI	ICEVLKFERL	LLENSTNRKM	FNSYDRLNSL	LFSSDL DVLV	ATLLLLLLRPS
QQYSSQPALS	HSLHISTSRL	ESLAKTSPML	REHAIE MIDL	VSKGGKRLRD	LPQEASEVNF
TFYSHLGPLA	QSSRSAIEIF	ADAVKSHQVP	DERYELLCRV	RFAQALGAGR	QKLVIARLLA
IAVYAHTHSE	TQAQSSLFLY	DTDLVNRIAE	LLQQDHEVRK	TVADISNIES	TLPNLFVDAL
VSFITFIASH	AGGGNLVVGA	GLVPILIQII	GITHEQRLPI	VSKSMQLVDN	VLYGVMNAFT
LFCNSRGVEV	LTERIKYEVD	GLMHTTRAGV	LKHLLRSIHR	MMQASGTTEG	MRGLIDSSLL
KSVQNIIEYR	GVFGPTVLPI	AINVVATFVH	NEPTSLTAIQ	EAKLPETILK	AFEAGIEPSF
EVVQSIPNAL	GALCLNQAGQ	DHLALHPSII	PALFSIFTSE	AHLKV LLEKE	NAVSIGSSID
ELVRHHPSLR	QIVFDSLIS T	LKKIEVMGTN	YVPPCDIQQF	YSLDNVIINY	IDVIGRFLEG
LFQHTEGLAC	IARLLALPCL	PYDYANAVLV	QVIRT MVEVA	PADTLTHLAQ	QVSESLNETK
GFWQSTNGES	NAFFHKLITL	HVRITLLSDV	YSTYTHGRHA	VGLLLGALHR	SCIWENIVLK
NGLNAVALKH	IASQIPLGPF	FQAVAKRRNP	DEAQKKQAAS	ISATLADVMY	KHLYHTVMIG
LITFLLFDEL	LLQFRKVGGO	ELVHVFGGLK	MALHLLY LMI	SFKPAIDPGQ	IAQYISKKPE
NHPDFYEPHD	FLVKMRLQIA	PLIRDIWQST	WLVSAPPAVS	KYVIQCVQEI	TSGENEPRAA
AVRALSRTNN	NVNFATEYLL	THPDLDEIRK	SLISDIGPQA	LRLADAHPSI	EKFSPAAYDV
QEEPLAVRCR	LLALILQALP	KWLPALLLAM	ESLLVTAEEP	RAVPMVLVVG	PPYVEARSML
FELCIRLLHI	PSLPRDELLA	TLRMLVQLTR	DRNMADQFVR	RNGVSLLGFQ	SHIAIILRHL
VEDRLVLETV	MKQEIKRWLS	TSKTVEVLTY	VRNSTSMAAR	DPQVFLDITK	ELCTLVRPES
VVHFMLGELM	RVGKYACFLM	QSLSELLFSY	EQCKFAFLTY	PKKRSKSSAL	SFLLTELLSF
GPFN SKKRV I	LCNWAMSVIV	ALCVDSSQEN	APDVTSIRKL	VLESISRSFK	DILATEPMDV
RYGRILAMAD	LCHRLLSVRF	ETPMHLAKIM	LEKNFVSTLT	TVLAEVDLNY	PNMRSLVAAI
LRPLEYLT KV	AIKMGREETP	DLYRNSSLGM	YAEAMSHPLL	VDRTDTPEFG	PLQTIQRWSE
EAKITHGKHL	QERVQRLCNH	IVLALLPDAR	ERVTTITINGN	EVDITDTGID	PTFLEALPDD

MREEVLNQHL	REQRPTQVAP	PVESQISADF	LDALPPEIRA	EILREERLEP	TDMGAADFIA
SLDPQLRQVV	LLDSDDGILQ	TLPKVPTPRD	AIQLLERPGI	AALVRLFFFP	QKSTLHKVLL
NLCENSKSRT	ELFNVLLSIL	QDGTGDLALV	DKSFSQLTFR	PDLIAQRCLD	ALNYIVGTNE
LSSLFFLTEH	ELSAGLKRSK	KGKGKEKQAA	SHYPIVLLLG	LLDRQTLLKT	PSIMDSVAGL
LDSVTRPLTS	LKKILLANPP	QIPHPALRSI	VNILTVGEC	GRTFQHTLAL	IQHLSFLPDA
RDIIAQELRL	KANDFGANLS	KDLDELITAL	VAKFSPASSD	QAKFLRVLKT	IDYMYSIYET
FRFTLLWEKL	SECLSVVESR	DNVEHIATIL	LPLIESLMVV	CKHVGKQSV	DDLFSVFTDD
HRKILNMMVR	NNPSLMSGSF	SLLVQNPRVL	DFDNKRNYFN	QQLHKRREHY	PSLQVNVRRS
RVFEDSFHAF	QHKTGDQIKY	GKLSVRFYAE	EGVDAGGVTR	EWFAQILARQM	FNPNYALFEP
CAADRQTYQP	NRASEINPDH	LSYFKFVGRV	IGKAIYDGRL	MDAHFARSLY	RMLLGKRVYD
RDVEWVDPDY	YKSLCWILEN	DPSMLDLNFI	FGRHAVIPLK	ENGASIPVTM	ENRKEYVQLA
AQYRLHSSIA	KQIENLLAGF	YEIVPKELIS	IFNEQEVELL	ISGTPDIDVD	EWRAATEYHG
YSSSDPVIWV	WWRALKSFNR	DERAKVLSFA	TGTTTRVPLGG	FGELQGVQGV	QRFSIHRAYG
EPDRLPQAHT	CFNQIDLPEY	SSYERLRHQL	LLAINEGGEG	FGFA	
>OS					
AALIADILAT	STDDLKLLA	PIDSWRWPRS	DLNAWIKVLN	KFDAVLEDAI	REYDVGDLQV
SDFSPQRKQS	VCEILKFERL	LLENSTNRKM	FNSYDRLNSL	LFTSDLDVLV	STLLLLLRPS
QQYSSQPALS	HSLHISTSRL	ESLAKGAPAL	REHGVEMLDL	VSKGEKPVES	LPQEASEVNF
TFYRHLGPLA	QSSRSAMEIF	ADAVKSHQVP	DDKYELLCRV	RTARALGAGR	QKIVVARLLA
IAVYATHSE	TQTHSSLFLY	DTDLVNRIAE	LLQHDRGVRK	TVSDISNAES	TLPNLFVDAL
VSFITYIASH	ASGGNMVGA	GLVPLLQVI	GITHPQRLPV	VSKTMQLVDN	VLYGFMNAFT
MFCNGRGVEA	LTERIRYEVD	GLLQFTRAGV	LKHLRLSMHR	MMQSSGTTEG	MRGLIDSSLL
KSVDKIIEYR	GVFGPTVLPI	AVNIVATFVH	NEPTSLTAIQ	EAKLPETIYK	ALEAGIEASF
EVVQSIPNAL	GALCLNQTGQ	DQLAAHPSII	PALFSIFTSE	KHIRVLTDE	NAASIGSSID
ELVRHHPSLR	TIVFSSLIST	LRKIEELGNA	YVPPSDIRQY	YLLDNIIINY	IDAIGRFLEG
LFQHTDGLDC	FARLLALPCL	PYDYANAVLV	QVIRTMEVA	PTETLTHLAK	QVKESLDETT
EFWQLTGGAS	NSIFHKLVT	HIRITLLSDV	YATYTHGRQA	VGLLLGALHR	VCIWENIVLK
EGLNALALKH	VASQIPLGPF	FQAIKRRNP	DEASKQQAVA	ISATLANVMY	KHLYYTVMLG
LITVLLFDEL	LVQFRKVGGO	EMVHVYGGGLK	MALHLLYSLI	SFKPAADPGQ	VTQYISRKPE
THPDYEAHD	FLVKMRLAVS	PLIRDIWQSS	WLVSAPPAVS	KYVIQSVQEI	VTGDNEARAP
ASRALTRTNN	NVNFATEYLL	SHPELDIMRK	SFTADIGPLA	LRLADAHPSI	EKFSPAAYDV
QEEPLAVRCR	LLALILQPLP	KWLPALLLAM	ESLLVSAEEP	RAVPLVLLTG	PAYSEARTTL
FELCIRLLHI	STLPRDELLA	TLRMFVELTR	DRNMAQLVH	RDGVSLGFGQ	SHIAIILRHL
VEDRNVIESI	MKEEVKRWFS	NPRAVEVLTY	VRNSTSMAAR	DPLVFVDVTK	DMCTLLRPEA
VVHTLLSELI	RVGKYACFLM	QSLSELLFSY	EQCKVAFLTY	PRKRSKSVAL	NFLSELVSF
GAFNARKRII	LCNWAMSVIV	ALCVDSSPNH	TLDLTSIRKL	VLESISRSIK	DTPSSEPVDT
RYGRTLALAD	LCHRLTLVRF	ETPMHLAKIM	LEKNFVATLT	NVLSDVDLNY	PNMRSLVAAI
LRPLEYLTKV	AIKMGRQETP	DLYRNSSLGM	YAEAMTHPLL	VDRSDNPEFG	PLPTIQRWSE
EAKITHGKHL	QDRVQRLCNH	IVLALLPDAR	ERITVTIHGN	TVDITDTGID	PTFLEALPDD
MREEVLNQHF	RDQRSSRVEQ	SVESQISPEF	LNALPPEIRA	EILREERLEP	ADIDAADFIA
SLDPQLRQVV	LLDSDDGIIQ	TLPKPSQARD	AIQLLDRLGI	AALVRLFFFP	QKTILHKVLL
NLCENSKSRT	ELFNVLLSIL	QDGTGDLAMV	DKSFSQLSFR	PDLVAQRCLD	ALTFIVATNE
LSSLFFLTEH	ELLAGLKSK	KGKGKEKQAA	SHYPIVLLLG	LLDRHNLKKT	PSIMDSVAGL
LDAVTRPLTS	LKKILLANPP	QIPHPALRSI	VNILTVGDCS	GRTFQHTLAL	IQHLSFLPDA
RDVVAQELRS	KALDFGQNL	ADLDALIAAL	VAKFSPASSE	QAKLLRVLKT	IDYMYSIYET
FRFTPLWRKL	GDCLAVVESK	ANVENIATIL	LPLIESLMVV	CKNVGVKESV	DDLFSVFTDD
HRKILNLMVR	NNPSLMSGSF	SLLVQNPRVL	DFDNKRNYFN	QQLHKRREHF	GTLQLNLRA
RVFEDSYHAF	QHKTGDQIKY	GRLSVRFYAE	EGVDAGGVTR	EWFAQILARQM	FDPNYALFEP
CAADKQTYQP	NRASEINPDH	LSYFKFVGRV	IGKAIYDGRL	MDAHFARSLY	RQLLGKRVYD
RDVEWVDPY	YKSLCWILEN	DPTVLDLTFI	FGRHAVIPLK	ENGASIPVTM	ENRKEYVQLS
AQYRLHSSIE	KQIDSLLSGF	YEIIPKDLIS	IFNEQEVELL	ISGTPDIDVD	EWRAATEYNG
YTSSDPVIWV	WWRTLKSFNR	DERAKVLSFA	TGTSRVPLGG	FGDLQGVQGV	QRFSIHRAYG
DPDRLPQAHT	CFNQIDLPOY	SSYEKLRRQL	LLAINEGGEG	FGFA	

10-Zinc Finger

>AS

KSSASSATRK	KHARKLRRLG	KKDAVTKRRA	LDELAHFPAL	ALHAERRVRA	LTASTHAVLL
GPWCMLAHDV	DRAIAAAARP	AWFVARAAID	PASVHAELNP	EEASPDNRAR	LRVGALGALA
WGDAQPAVRR	ASWALVGSL	SVAALRSAWV	EADAGVRLAM	WEPLLVFLTK	YPQAWAYAEF
LQFLTLGSPA	RGYPTVLVAL	STIPPDIFTA	LWGAVDGRAL	AFLAALVECA	LFFASRPKAF
LIARLVPPQP	AVLDHMRAEA	AGEPFPEGWA	VVEPLDTHGK	TAYERVLGAL	LERALARDNL
WVLAHLALLA	THREAVGVAV	LLRRLLSGAE	VADAEAWIKA	ARGMERSAPL	AAHAILRTVS
STSLEPPLLA	RYRTELAATL	AGVPGLRLLR	TLNAAAPDVS	GDAALVPQQR	AVFLAKALEK
WLASDLDEDV	ECELAELFVH	LAPVLQTVIG	KHWEVILDII	ENNLENVDLN	EDGDLILLSR
TLRLLAIVIE	LAASKMLRV	WASRERAVMG	LVLRLSKPRS	ICKHLLVNLE	FIVIESAAST
ASAKVKTGFT	EQIRGLDLIA	TYFAPNILGM	LGVTKPFKLD	CWAVDEFYLA	LYDPLSARLL
AAHLYFRALQ	CVPSLVRAWF	VKSSDRQLHN	AVSTFTSSYF	SPPLIAHLLA	PLRSLIPENK
WRAWVLGAQI	VGEAGVLGGL	LHFRKNVAGH	FEGQVECAIC	YCVIKPCRTC	KNRFHASCLY

>EG

KSSASSATRK	KHARKLRRLG	KKDAVTKRRA	LEELTHFPSL	ALHPARRVRA	LTASTHAALL
GPWCMLAHDV	DRAIAAAARP	AWFVARAAID	PASVHAELNP	EEASPDNRAR	LRVGALGALA
WGDAQPAVRR	ASWALVGSL	SVAALRSAWV	EADAGVRLAM	WEPLLVFLTK	YPQAWAYAEF
LQFLTLGSPA	RGYPTVLVAL	STIPPDIFTA	LWGAVDGRAL	AFLAALVECA	LFFASRPKAF
LIARLVPPQP	AVLDHMRAEA	AGEPFPEGWA	VVEPLDTHGK	TAYERVLGAL	LERALARDNL
WVLAHLALLA	THREAVGVAV	LLRRLLSGAE	VADAEAWIKA	ARGMERSAPL	AAHAILRTVS
STSLEPPLLA	RYRTELAATL	AGVPGLRLLR	TLNAAAPDVS	GDAALVPQQR	AVFLAKALEK
WLASDLDEDV	ECELAELFVH	LAPVLQTVIG	KHWEVILDII	ENNLENVDLN	EDGDLILLSR
TLRLLAIVIE	LAASKMLRV	WASRERAVMG	LVLRLSKPRS	ICKHLLVNLE	FIVIESAAST
ASAKVKTGFT	EQIRGLDLIA	TYFAPNILGM	LGVTKPFKLD	CWAVDEFYLA	LYDPLSARLL
AAHLYFRALQ	CVPSLVRAWF	VKSSDRQLHN	AVSTFTSSYF	SPPLIAHLLA	PLRSLIPENK
WRAWVLGAQI	VGEAGVLGGL	LHFRKNVAGH	FEGQVECAIC	YCVIKPCRTC	KNRFHASCLY

>CP

KSSASSGTRK	KVARKLRALG	KKDPVTKAKA	LDELNRLPVL	FTHPARRIRL	LAASVHAALL
GTWLLLAHDL	DRVVVTQAER	SWFTEVLDD	PLSVHAALNP	EEQDADKSAR	LRYAALGALR
WGLGQPQVRV	AAWTLVLCLL	GPAVLRSAWV	ETDPGVRSAI	TRPVLIIFLKE	YPNAWAYTDF
LSYLALGSPI	EGYPSVLIVL	STIPSSIFAA	FWAAIDGRAL	AFLGAVLECL	VFMVQRPVAV
ICAYLLPPSR	SELEGMLASL	PAHAADPSIA	LLEPADNRGY	GPYARVVSAL	LRRIANEET
WVLPALRLD	EVRESRVLYA	LLQHLFADAD	TSDAEHWLLL	ARRLEKTAPQ	TALTIVAALT
THAPEPARLD	RYRNELAADA	LGKGLLLLR	RLVATAPDPE	SDVVFLPQQR	AVNLMRVCQA
WIAGAGLEGV	ESVMTLLFYH	LAPIVQNVAG	AHWDLVWDV	ENNLENCSTF	DDATLTTLGR
SLRLIILIED	LVKTNKSLKA	WAERRSAILS	LVKDLSAPRS	LCRELAVSIE	HLVVEAAVDT
ASLKVRTGYV	QHLRSLGVVG	KNFIPHIFEV	LNLFKPFKLS	IWEVDGYHLD	YYDPLSIRLF
AAHLYHRALL	TIPVLVRSWI	SDCTDKQLLS	RVLDFTSSFF	SPGIIRAELA	LVRQAVSEER
WRAWVLGVQQ	TQNGHIVDGL	SMFTKNVKLH	FAGLVECAIC	YSIIKPCRTC	KNRFHAACLY

>CC

KSSATAATRK	KHAKKLRSFN	KKAQVTKIRA	LEELNHVPAL	LIHPSRRVRF	LAASIHLSFL
GTWSMSAHDV	DKTVATTSTK	SWFIQQTVLD	PEGIYTSLHP	EESDQDKKAR	LRIGALGALG
WGYAQPVRK	AMWSLVHVL	SRAMLRSAWV	ESDLSVQSVL	WHPLLTFLKD	FPSAWAYEEF
LEFLRKGSPI	QGYPVVVLIM	STIPASMFAA	FWAALDSRAL	AFLSSVLEST	GFLIRRTQVI
LYGRLLPTE	KELEEMLEGL	SSTPIDPSMA	VVDPLDQNGF	SSYARGVFAV	LNRVLAKKNL
WALKHFVVLE	GILEARVLRV	VLDHVLEEE	SADAGKWVY	ARKIERSAPE	TSLSIIYSVA
QARLETQKLD	RYRNEVAASL	LGIPGLLALR	KLAASAPDPD	SDVVFLPQLR	AVNVVKACQK
WVEEGVDEEV	ENAMLPVFCA	LAPILQNDHG	KHWEFVFDLV	ETVLENSSE	DDDTLVGLSR
ALKMLLVIED	LCMTNKGLRA	WEPRRTNVLT	LVRDLSLPRS	ICRELLLSIE	YLVIEVGVGN
ASFKVKSMYI	EQLRNFDLVG	SKLLPNIIAA	LRLDKAFKIG	LWGVDEFYVQ	YFEPISIPVL

AAHLYYRSL	CVPSLVHTW	LDCKDRQLSN	AITTITAQYF	SPLIIQAELA	HVRSPVDENR
WRAWVLAVQQ	THNGRIVDGL	SLFKKNVTLH	FEGQVECAIC	YSRYGRSRTS	PPLFLLIVFV

>SS

KSSASSATRK	KHAKKLRLA	KKDTVTKGRA	LEELERFPAL	CVHPSRRLRQ	LSAALQTL
GAWCLSAW	DRSVSHRAS	SWFITTITMD	PSAAYTALVP	PEPLEDRNAR	LRMSALGALR
WGTGQPIVRR	AAWALVNALM	ATAVLRSAFV	ESDITVRGSM	WEALLLFLTK	VKNAWAYTEF
LAFLALGSPV	QGYPTVLVIL	STLPRKIFDA	LWSAIDGQAL	AFLAAWSECL	VWVAGRPNLF
VLGFVLPPTP	EEFRALLNAT	STNPLDPTLA	VIEPLDSTGY	SPYARAATGL	LDRQLARANL
WALQYVLTLD	SVRDSLVLHT	VLQHVLPNTS	KEEADGWIEL	AREIEGSAHQ	TSLAVALAVA
EFAPPPRLD	RYRNELASKI	SGVSGYRFLR	SLNAIAPDPE	SDVIFMPQQR	AVFLVQALQG
WMGSDIDEGV	EVEVTKVLAD	IAPILLGLQG	AHWEFIMDLV	ESNIENCSEK	DLDTLVLLSR
TLRLVSVIMD	LAKTNKYLRE	WGDRSKNVLT	LVRDLSIPRS	ICREQALSIE	HLVIEAGVDT
ASLKVKTAIV	EQLRNLDLIG	TYFLPNVFDI	LGVGPPFKLD	AWGIDEYWLP	MYDDQSLSL
AAHVYRALL	TVPSLVRTWW	EGLKDRQLST	AISTFTSSYF	SPVLIASEFS	QIKPTVTEKV
WRRWLFVAVQQ	VHNGRIVDGL	TLFKKTVSLH	FEGQVECAIC	YSILKPCKTC	KNRFHAGCLF

>SH

KSSASSGTRK	KHARKLRLS	KKDAVTKGKA	LEELMHLPSL	FLHPSRRIRL	LATSLHVSFL
GAWSMASRDV	DRQVASYARR	SWFVQRAVMD	PAGLYLYLNP	EESEVDRRAR	LRIGGLGVLQ
YGHGQPVVRT	ATWNVLAALL	SVAVLRSAFV	EPDPLVRTAM	WKPLLLFLKD	HPTAWAYSEF
LQFLELGSPT	QGYPTIVII	STIPSSIFTS	FWAAIDGRAL	AFLTSLLECL	SFIIRRVFAF
IVGYLLPPTV	HQLDIKLSSL	RSTPAHPILA	ITQSLDSIGF	SSYARLVSA	LDLYKARSNI
WALKHFIALD	TYRTSRVLE	VLKHVLVDAG	KADTEQWMLL	ARRLERGAPQ	TSLAIVHAIA
RQGSEPLLA	RYRNELAAGI	LGISGLTLLR	RLTASAPDPE	SDVVFLPQPR	AVNFMKTCQK
WITGNIDDDV	QSEMTGVFMD	MVPLLQNVPG	SHWDLIFDII	ENNLENASFE	DDETTLVVLWR
TVRLIQMIQD	LVVYNKALKA	WQERQMTILG	LLRDLSTPRS	LCEAALSIE	YLVIEGVVDT
TSMKVRSGYT	EQIRNLDLVA	SNFIPLVLNI	LNLWKAFLKD	LWSINEHYLS	SYDPLSLKLL
TAHLYYRALL	TIPSLIRSWL	HDCKDRNL	SVTNYTSQHF	SPVIINTELV	QLRIRVTESR
WRGWLLGVQQ	IQNGHIIDAL	SLFKKNVSLH	FEGQGECAIC	YSIIKPCKTC	KNRFHSSCLY

>RM

KSSASSGTRK	KHARKKERLG	KKDSVTKRKA	LEDWFSLPTL	FLHTSRHIRQ	LSASIHASLL
GSWCMAMHDP	DRQAAMYARR	SWFVRRSLD	PQRVYLDLNP	EESENDREAR	LRIGGLGALK
WGDGQPLVRK	SAWGLLSTLL	SSAVLRSAWV	EPDGQVRSIM	WEPLLLFLLH	FPESWAYQEF
LQFLQLGSPT	QGYPAIILVL	SSIPSTILTS	FWSALDGRAL	AFLSSLLECL	ILLIRRPDFF
TFGYLYPPSR	EVLDEMLEEL	PSNPIDPTLS	AIEPLDTSGL	CEYARAVDAL	LERHLAKENN
WLLRHCMCLE	SIRDARILYA	TIQRIILNGAT	TGDAEHWMLL	ARKFETKARL	ASEAIIAVS
ESGLEPPRLD	RLRNELAAES	LGVKGLRLLH	RLALTVPDPD	SDVVFLPQNR	AVNFMKACQS
WITSIDIEEDV	ESEMPLVFLH	LLPILQSIPG	AHWDLVFDVI	ENNLENSSEF	DNSSLVTLTR
TLQLLTAVQE	LTRTNKALRA	WQEPGKYPLQ	VCFMVSTPRS	MCWEMAFSIA	IPVIEAGIDT
DSLVRKMGY	NQLRDLGLIE	NNLLPTVLDM	LDLYKPFPLE	PWAVSEFYID	YYDPLSPKLL
SAHLFYRALL	SVPSLVSTWW	SALKDKQLQG	TISTFTTRHF	SPVLISAELA	HVRNPAEENR
WRGWLLAVQQ	VQNGRIVDGL	SMFKKNVTHH	FENQTECAIC	YSIIKRCKTC	KNRFHASCLY

>SC

KSSASSGTRK	KNARKLRNLN	KKAWPTKIKI	LEDLRHFPGL	LLHSSRRIRM	LAVSLHAALL
GAWCMAAHV	DRSVAIAGSR	TWLPRRAIFD	PDGAFAEQA	SEAVEDMRAR	LRVGALGCLR
WGQDQPAVRR	AGWTLQATV	LRLILRSSLT	EVDNNVQNVL	WGPLISFLQE	YPQTWPFQLL
LTFLGLGSPV	QGYPTVMLML	STIPSTVFTA	FWSALPSLSS	NLLSSVVECL	VFCIRRRNLW
LAHLIPPPS	DTLDRRLDAL	PPQPIDPSLA	VLVDTDAGHY	SSYARIVALL	PLRLARQQP
WVLRHLIAWD	TIRQARIVTA	LLDHVFEEVP	KEEADGWVAL	VRTSQKTAPE	TSLAILAAIA
RTAPDAPRLD	RYRNEVAANL	QGTSALPMVR	QLVAMAPNAD	SGVPILPGPR	AVNVMKACQA
WIAGDAAEDL	EALLPLLFTH	LAPVLQTVPG	AHWGLIFDVM	ENNMETLSLE	DDAALPALAR

TLRLIIAVRD	LATTTKSLRA	WQEREKGILA	LVRDMSAPRS	ACRELLLTVE	HLVIESAVDT
ASMKVRMGYI	DQLRSLSVVD	TYLMPNIIHM	LRLDRAFKLD	QWAIDEFYVS	LYESFALPAF
AAHIYFRALS	TIPSLIASWI	QDCKDRSLSA	TVGTLTATHF	SPVIIARELA	HVRTAVDDRR
WKSWM LAVQQ	VQSGHILDGL	ALFKKNVT LH	FEGQVECAIC	YSIIKPCKTC	KNRFHAGCLY

>FS

KSSATSTTRK	KHARKLRLRG	KKDAVTKRRA	LEELKHAPLL	LLHPSKRIRL	LAATLHAAIL
GAWRMSAHPD	DKHVASVAST	SSFLCRALLD	SNGLWAALNP	GEGETDRNAR	LRIGALGALA
RGFTQPPVRR	AAWAVVATLL	SRVALRSAWI	ESDVGVRAL	RDPLLVFLRA	YPEAWAYASF
LAFLPHAPAG	ATYPALVVLL	STLPPSLFDA	LWAGLGGGFG	MLVKAILECL	VFVVRGPSVF
GLAFL LQPTR	FELDNMLVAL	PSEPIDSSLG	VLDPLDARGF	SAYARVVYAV	LDRQLARKNL
WALRHLLAFE	GARGCRVLFR	VLHHFFANAS	KEDADAWFTL	ARKVEKTAPR	TSLTIIAAIT
QFAPEPSRLD	RYRNELAADL	FGVPGLHTLR	KLAAPADPE	SDVVFLPQQR	TINVMKTCQQ
WITSDIDEV	ESEMTLIFLH	FAPLLQNVPG	AHWDLVFDVI	ENNLESCSLS	DNTALVT LAR
TLRLIIAIED	LAATNKALRA	WHERRISALT	LVRNLSTPRS	TCRELVLYIE	YLVIESGVDT
ASMKVRSDYV	NQLRNLDLIA	MRFIPSIFTL	LNLYKAFKLD	PWAVDEYYIE	HYEPLSLQLL
ASHLFYRALL	TVPSLVRKWL	HDCTDRQLSS	AVVAYTSLNF	SPVIIRTELL	EVKSPVLEDR
WRAWVLGVQQ	IQNGRIVDGL	RHFKKNVALH	FEGQVECAIC	YSIIKPCRTC	KNRFHAACLY

>LB

KSSATSATKK	KHAKKLRSFN	KKAQPTKQRA	LEELQHISAL	FIHPSRRIRA	LTASLHTSFL
GTWCIAAHDV	DRVSVSALK	AWFVQKTALY	PSEMYVHLNP	EEDEQDRKSR	LRVGALGVAR
WGWGQPNVRK	AAWALVQTLL	GPAILRSAWV	EPDLAVQTTM	WQPLLTFLKE	FPNSWAYREF
LQFLELGSPM	QGYPTVIIIL	SSIPSSLFKS	FWAAIDSRAL	AFLASLLECM	VFL LKRPSIF
FFAYLLPPSA	AELNEMLA AI	PADAIDPSMG	VIEPLDKRGF	SSYARIVDAL	LDRIHAKQNL
WALRHFI VLD	GVRDTRVLSV	VLDRI LGDID	VEEADMW IQL	ARKLERLAPQ	TAMTIAAAIA
ATGTEPQKLD	RYRNELAASL	LGIRGLLT LR	KLAATAPDPD	SEVVFLPQVR	AVNVVKVFQQ
WVASDVGEDV	ESAMIHVYIH	LTPILQNL AG	NHWEFIFDVL	ESVLENSQIT	DDEALVPLAN
ALRLIIVLQD	LTVTNKLLKA	WDERSSVLLT	MVRDISLPRS	TCRELTL SIE	YLVIEAAAAA
ASFKIKSGYV	EQLRNSNLIV	TQFIPTLLGL	LRLDKVFKCD	SWFVDEFYIE	LYETITLRLV
AAHLFYRALL	CVPSLIHTWV	LDCKDRQLTY	CVTTYTSTYF	SPVLIRAE LA	HVRSPVDEDR
WRAWVLAVQQ	THNGRITDGL	GLFKKNVT LH	FEGQVECAIC	YSIIKPCKTC	KNRFHAGCLY

>HI

QSSASSATRK	KHARKLRKFS	KKDAVTKTKA	LEELQYIPSL	FTHPSRRIRL	LTAGLHSTLL
GSWCASRDV	DRQVSIYARR	SWFVQRAILN	PTELYLYLNP	EENDSDRRAR	LRVGGLGVVQ
WGLAQPVVRT	SAWSLLQVLL	SVAVLRS AFV	EPDTQVR SVM	WRPLLTFLKE	FPRAWAYHEF
LQFLELGSP L	QGYPTVLIIL	STIPSSIFT S	FWAAIDGRAL	EFLSALLECM	TFIIRRPSLF
LFAYLLPPSQ	ARLYDELKAS	RSDPAHPSLA	INHPLDIYGF	TSYARAVSTL	LDRHAAKTSI
WALRHLLVLD	SYRDSAVLLA	ALQYIVGDAD	KGEADLWMGL	ARKIEKSAPQ	TALAIITAVV
QFGSEP PRLE	RYRNELAAGI	LGIPGVLLLR	RLAATAPDFD	SDVVFLPQPR	AVNFMKQCQQ
WIASDIDEDV	ESEMTAVFYH	LVPI LQNVSG	SHWDFIFDVI	ENNLENS SFD	DDMTLTILWR
TIRLIQVIED	QVTYNKALRA	WQRRQIAILS	LLRDLSTPRS	TCREAAALSIE	YLVIESGVNT
ASMKVRSGYT	EHLRSLDLIA	KHFIPLV LDA	LGLYQFFKLG	IWAVDEFYLE	SFDPLSLPLF
AAHLYYRGLV	TAPSLFRMWL	LDCKDYTLST	SVGNYTSQHF	SPVIIGHEL G	HVKSPVTENR
WRGWLLGTQQ	IQNGHIADAL	SLFKKNVSLH	FEGLIECAIC	YSIIKPCKTC	KNLFHSSCLF

>PI

KSSASAGTRK	KHARKLRLFG	KKDAVTKRRA	LEELQHVPAL	FLHPSKRIRL	LTSSLHMSLL
GTWCMA SHDI	DRQVSTHAHR	SWFVQRA LLD	PGGVYLYLNP	DENEQDRKAR	LRVS AFGAIT
WGWNQPVVRK	SAWTTLQALL	STAVLRS AWV	EPDAAVQGVM	WQPLLTFLKE	FSSAWAYREF
LQFLELGSPS	QGYPTIV IIL	STIPSPIFT S	FWAAIDGRAL	AFLSSLLECT	IFLIRRPCVF
IFAYLFPPSP	GEVDQMLRAM	PSDPIHSSLA	VLDPLDNRGY	SAYARLV CAL	LDRQAARRNF
WALQHFLALD	NVMDSRILRR	VLQPVLS DVS	MDEADQWMIL	ARRLEKTAPQ	ASMAIVSSIT

QFAPEPPRLD	RYRNELAAGL	LGIPGLLSLR	KLSATAPDPA	SDVAFLSQPR	AVNVVKAFAQQ
WITSDVDEEV	ESEMTLIFIH	LAPLLQNVSG	AHWEFMFDII	ENNLENCSSFA	DDITLVALAR
TLRLIVAIQD	LALTTKTLRA	WEKRHSILT	LVRDLSAPRS	VCRELVLSIE	YLVIELGVDT
ASLRVRSGYI	NHIRNLDIIA	THFVPSILGL	LELYKAFKLD	FWAVDEYYLD	FYESISLQLL
ASHLFYRALL	TVPSLIRAWL	LDCTDRQLSS	SVVSYSQYF	SPVIIRTELA	HVKSPVLEDR
WRAWVFGIQQ	IQNGRIVDGL	SLFKKNVALH	FEGQVECAIC	YSIIKPCRTC	KNRFHAGCLY

>SL

KSSASSGTRK	KNARKLRALG	KKDPVTKAKA	IEELQRPVPL	FTHPARRIRL	LAASLHASLL
GTWCMSSYDI	DRQVASFGQK	SWFIQKALLD	PNGIYLYLNP	EESEMDRNAR	LRVSFAFGAFR
WGFGQPLVRQ	NAWVLLSLLL	STAVLRSAWI	DTDVTVRNTM	SRPLLLFLKE	FPKSWAYNEF
LQFLELGSPT	EGYPIVIIIL	STIPSSIFSS	FWAALDGRAL	AFLSSLLESM	VFLLRPSVF
LAAYLFPPSS	EELDSMLSDL	PSEPAEPSLA	LFESLDRKGY	SPYVRVSTL	LSRQLSRDNL
WALRHILALD	TIRDSRILSS	VLQHIFANAT	KGDADSWMVL	ARKFEKTAPQ	TSLSIMSSIT
RFAPEPSRLD	RYRNELAANM	LGISGLLTLR	KLVAVAPDPD	SEVVFLPQQR	AVNVMKACQE
WITSDVNEEV	ESMMTLLFYH	LAPILQNVPG	SHWELVFDVI	ENNLEHCSIS	DNTTLVTLGR
SLQLIIIIQD	LVTTNKALRA	WEERQLSILT	LVKNISAARS	LCRELALSVE	YYVIEAAVDT
ASMKVRSSYF	NHMRSLDIIS	THFIPNIFDI	LDIFKAFKLD	VWTTDEYYLD	MYEPLSARLL
AAHLYYRALV	TVPALIRSWV	SDCTDKQLLA	RVIAYTSSYF	SPVIIKAELA	QVRDSVSEDR
WRGWVLGVQQ	IQNGRVVDGL	TLFTKNVTLH	FAGQVECAIC	YSIIKPCKTC	KNRFHAGCLY

>SN

KSSATSSTRK	KHAKKLRLRA	KKDNVTKRRA	LEDLQHLPII	LLHQSRRLRL	LASGLHTSLL
GAWCMAVHDI	DRQVAIQARK	SWFLRESFFD	PEVVYNRLNP	EEEEADRHRAR	LRFGLGSLR
WGIAAVPVRK	AAWSLLQSLV	GPAVVRSAWI	ESDAIVRSGM	WEPLVVFLSK	FPQSWAYREF
LEFLELGSPL	QGYPTIMIVI	STLPSRIFTS	FWAAIDGRAL	AFLSALLECV	LFIVAKPDVY
LLGYLMPPAE	KDLNSLLNAG	SPVVVDSTAS	VLDPFDSLGF	SEYSRIVMAI	LDRQLIKENI
WSVRHVMILN	NARDALVLLQ	IMQLVLSDVS	KASADLWVQL	ARSIEAKSSE	TSLAITYALT
RAGPEPPRLD	RLRNELASTL	AGVPGRRLLR	RLAASAPNPD	GDVVFLPQQR	AIFLVQTFQK
WIASDLDIGV	ENLMTLMFFY	LAPILQNLPG	SHWELIFDIM	ENNLENASFE	DDSTLFALFW
TLRLIISLED	LTASNKALKA	WVERRSTMLR	FVRDLSEPRE	KCRELLLNAE	SLVVEAGVDT
TSLKVKMAYL	DGLREAEVIG	NNLLPVIFDL	LGVSKPLNLS	PWAVDEYFID	LYEPLSNQLL
ASHIYYRVLM	TVPSLVRSWW	LECTDRQLTS	SVSSFTSGSF	SPVIIAQQLS	HIRQPVKEDR
WRAWLFAVQQ	VQNGRIFDAL	SLFKKNVSLH	FEGQVECAIC	YSIIKPCKTC	KNRFHASCLY

>SP

KSSATSGTRK	KHARKLRLRG	KKDTVTKRKA	LEDLQHLPLP	LLHYSRQIRL	HAAELLIAYL
GSWCLATQDM	DRQVSLTARK	SWFVKRSVYD	PQGVYLELNP	EESEDDRNAR	IRTGGLGVIR
WGSDQPVVRK	AAWGIVNSLL	SSSILRSAWV	EPQTSVRYVM	WEPLLLFLTQ	FPNAWAYREF
LQFLELGSPI	QGYPVIVVIL	STIPETIFAS	FWAALDGRAL	AFLNSLLECL	VFLVKRPDIF
AFAYLSEPSQ	VELDGMLQAL	PSDPSDYSLA	TVDRLDKTGL	SEYARIVNTL	LDRKLARDNM
WLLTHFVQLD	SVRDSRILHF	VVRHLLSGSS	ASDADQWMLF	ARQLEKKAPL	SAVGIVLAIT
ESGLEPPRLD	RYRNELASGI	LSIPGLLLH	RLSATTSPLE	SDVIFLPQPR	AVNFMKACQQ
WVTSDIDEDV	ECEMLVIFQY	LVPILOQMPG	SHWDLMFDMI	ENNLETSSFS	DQSSLTLLTR
TLRLQLDIQV	LTQSNKSLKA	WKEREKAILG	LVRDLSVPRA	ICWELALTIE	YVIEAGVDT
ASLRVKMGYA	SQLRDMNIIS	SKFLPTIFDL	LGLYKPVQLE	MWTLQEYFVQ	LYDEISANLL
AAHLYYRALL	HIPSLVASWW	GDCKDRQLSM	AVANMTARHF	SPVLISAELE	HVKDPVEEKR
WRGWLLAVQQ	IQNGRIVDGL	GIFKRNVTNH	FENQTECAIC	YSIVKRCRTC	KNRFHAGCLY

>RF

KSSASSATRK	KHARKLRKLA	KKDTITKGKA	LEDLKHLPPL	FLSSSHRIRL	LTAALHFSIL
GSWFLATHDI	DRQVSHQSRK	SWFLQRALLD	PFGLYTDLNP	DEGEEDRRGR	LRCGALGGVK
WGHGQVAVRK	STWSVLYSLL	SSAVLRSWV	EPEQTVRAGM	WEPLLTFTLV	MGIRYSYREF
LQFLQLGSPI	QGYPTIVVIL	STIPHTIFDS	FWASLDGRAL	AFLGSLLECL	VFLVKRPDIF

IFGYLFLPSK	DELDDMLDCS	SSDPVDPSLA	IIQPLDASGY	STYARILNAL	LDRQLVRTNV
WALRHFMVLD	SYRESFVLYS	VLQHVLSGAT	KDDADQWMIL	AKSLEKHAPQ	TSIAITLAVT
EYAPEPPRLD	RYRNELAAGI	LGIPGLLLLR	KLAATAPDPD	SDVVYLPQLR	AVNFVKAYQQ
WVTSDIDEAV	ESEMTVILTH	LAPILQNVAG	SHWDLIFDMV	ENNLENCFSN	DGTTLVMLAR
TLKLLLSIRD	LAETNKTLRT	WQEREIPILT	LVRDLSVPRS	LCWESAISIE	YLVEAGVDT
ASLKVKMGYA	SQIRDLGIIA	TNFLPTIFAS	LDLYRAFQLD	IWAIEEYIIQ	LHEPLSLKLL
AAHLFYRALL	SVPSLIASWW	NDCKDRTLST	AISSMTTRSF	SPVLIAAELA	HVKDPVDEKR
WRAWLLAVQQ	VQNGRIVDGL	SIFKKNVTSH	FEDQTECAIC	YSIIKRCKTC	KNRFHASCLY

>RI

KSSASSATRK	KHARKLRKLA	KKDTITKGKA	LEDLKHLPSL	FLSSSHRIRL	LTAGLHFSIL
GSWFLATHDV	DRQVSHQSKK	SWFLQRALLD	PSSLYTNLNP	DESEEDRRGR	LRCGALGGMK
WGHGQVAVRK	STWAVLYSLL	SSAILRSAWV	EPDQTVRAGM	WEPLLTFLTG	NRQAWSYREF
LQFLQLGSP	QGYPTILVIL	STIPYTIFDS	FWASLDGRAL	AFLGSLLECL	VFLVKRPDIF
IFVYLFPPSK	DELDDMLDYS	SSDPVDPSLA	VIQPLDASGY	STYARILNAL	LDRHLVRTNI
WALRHFLVLD	SYRESFVLYS	VLQHVLSGTT	KADADQWMIL	ARSLEKHAPQ	TSMAITLAVT
EYAPEPPRLD	RYRNELAAEI	LGIPGLLLLR	KLAATAPDPD	SDVVYLPQLR	AVNFVKAYQQ
WVTSDIDEAV	ESEMTVILTH	LAPILQNVAG	SHWDLIFDMV	ENNLENCFSN	DGTTLVMLAR
TLKLLLSIRE	LAETNKALRT	WQEREMPILI	LIRDLSVPRS	SCWGSALSIE	HLVVEAGVDT
ASLKVKMGYA	SQIRDLGIIA	TNFLPTIFAS	LDLYRAFQLD	IWAIDEYIIQ	LHEPLSLKLL
AAHLFYRALL	NIPSLIASWW	NDCKDRTLST	AISSVTTRSF	SPVLIAAELA	HVKDPVDEKR
WRGWLLAVQQ	VQNGRIVDGL	SIFKKNVTSH	FEDQTECAIC	YSIIKRCKTC	KNRFHASCLY

>TA

KSSASSATRK	KHARKLRRLS	KKDAVTKRKA	IEDLRHLPTL	LLHASRQIRA	TSASLHYSLL
GSWALSADHV	DRQASSSARR	VWFAHNTVLD	PLALYHELNP	EESEDDRKR	LRIGALGIFK
WGANQPAVRR	SAWSMLLSLL	SSAVLRSWV	EPDPLVRGVM	WEPLLVFLTQ	KSRWAFAEF
LRFLQLGSPV	QGYPTVVVIL	STVPSSILTS	FWAALDGRAL	AFLSALLECT	VFLVKRPDIF
IFAFVLAPSE	DSLADMLQEL	PSYPLHPAIA	VVDPLSDSGY	SEYARVVSAL	LDRHLARNSI
WLLRHFLVLD	TAQTARILYT	TMKHVLSGAD	KADAEQWMTL	GRRLERQAPQ	ASLAIVLSIT
ESGLEPPSLD	RYRNEQASGI	LGIPGLALLR	RLAVSAPDPE	SDVIFLPQTR	AVNFMKTCQA
WLSSDIAEDV	ESEMTGVFVH	LAPILQNVPG	SHWELIFDLI	ENNLENISL	ENSNLPVLSR
TLKLLLTIQD	LSKTNKSLRT	WKEHELAILK	LVRDLSVPRQ	VCWEMAFSIE	YLVEAGVDN
ASLRVKMGYA	SQLRDMGLIS	TSFLPNVLGL	LNKYKSFSLE	YWKVDEYYVQ	LYDVLSPKLL
AAHLFYRALL	NVPSLIASWW	GECKDRQLSN	AVATFTTKYF	SPVLIAAELG	HVKDPVDEKK
WRGWLLAVQQ	VQNGRIVDGL	SMFKKNVTHH	FENQTECAIC	YSIIKRCKTC	KNRFHAGCLF

>PN

KSSASSATRK	KHARKLKRLG	KKDSVTKRKA	LESLQHLPSL	LLNASRRIRL	LTAVLQASFL
GSWCATEDI	DRQVAIQAKR	AWFIRRALFD	PASIYAEINP	EESESDRGR	IRTNALGVLR
WGDGQPVVRR	TAWDVLKIFL	SSAILRSAWV	EPDAIVRASM	WEPLLTFLKQ	FPKSWAYREF
LQFLALGSPT	QGYPAIVVII	STIPPSIFTS	FWAAFQDQAL	AFLRALLES	VFLIKRPNLF
VFGFLLPPPK	DTIESMLQSF	PSNPLDPTLA	IVDPLDCGGL	SKYSRLIYAL	LNRDLMRENI
WVLRHFLVLD	KIGDSRVLYE	VMRHILKGAT	RTDAEEWVTL	SRHIEKRPN	TFSAIMLAVN
ESGLEPPKLD	RYRNEFAAGM	MGVGGLWLLH	KLALIAPDPE	SETVFLPQNR	AVNFMKTCQN
WISSDISEDV	ESEMTLIFQY	LSPILQNVPG	AHWEFIFDVI	ENNLENSSFE	GDSSLVLSR
TIKLIITIQD	LSSTNKTLRS	WKEREISILT	LLRDLSTPRF	NCWELAFSVE	YLVEAGVDT
TSLRVKMGYA	AQLQGQDLIG	SSFLPSIFDL	LEVHRPFQLE	PWLVEEYVQ	YYPQSPKLF
SAHLLYRALL	NIPSLISSWW	GNIKDRQLLG	AISSFITKHY	SPVLISEELR	IIRDPVEEKR
WRGWLLAVQQ	TQNGRIVDGL	SMFKKNVMHH	FENQTECAIC	YSIIKRCKTC	RNRFHASCLY

>FM

KSSATSATRK	KHALKLRLRG	KKDSITKRKA	LEELQHLPSL	LLNVSRRIRL	LAAAIHTSLL
GSWMAAEDV	DRMVSIAKQ	AWFIRRALFD	PMAYVSDLN	EESDDDRGR	FRVGALGVLR

WGDEQPAARK	AGWSVLRILL	SSAVLRSAAV	EPDSGVQSSM	WEPLLKFLTS	FPQAWAFREF
LLFLELGSPA	QGYPTIVIIL	STIPPPILTS	FWAALDGRAL	AFLSALLECL	ILLIKRPDVF
VFGYILPPSQ	DQLEALLYDL	PSNPVDPILA	IVDPLDRSGL	CEFARVVNSL	LSRDFARQNI
WLLRHFLILD	DLQESRAFCT	VVQYVLNGAV	RKDQAEQWMTL	AKRLENRSPN	TALAIHAHAVN
KSGLEPPSLD	RYRNELAASA	LGVGGVALLH	RLNLVAPDPN	SDVVFLPQNR	AINFMKACQS
WIASDISEDV	ESEMTLVFQH	LAPILQTVSG	AHWDVFVFDVV	ENNLENCSEFV	DTSSLVALTR
TLKLILIIQD	LCGSNKSLRA	WQEREMQILS	LVRNISIPRS	ICWEMALKIE	YLVVEAAVET
ASLRVKIGYA	TQLRNLDLIG	SNFLPFFIFDL	LEVYKPFPLE	QWSVEEYFVQ	FYDTLSPRL
AAHLFYRALL	NVPSLIASWW	TGCKDRQLVI	AVSNLTTKYY	SPVLIAAELQ	HVKDPVEENR
WRGWLLAVQQ	IQNGRIVDGL	SIFKKNVTHH	FENQTECAIC	YSIIKRCKTC	KNRFHAGCLF

>OS

KSSASSATRK	KHARKLRRLG	KKDSVTKRKA	LEDLQHLPSL	LLSSSRIRL	LAAGIHASLL
GSWCATEDV	DRQVAVQAKK	SWFIKRALFD	PVAIYTDLNP	EESEGDRKGR	IRVGALGVLK
WGDSQPTVRK	AAWGVLLSLL	SEAVLRSAAV	EPDAGVRASM	WEPLLTFLTQ	NPKAWAYREF
LQFLQLGSPV	QGYPTVIIIV	STIPPSILIS	FWAALDGRAL	AFLSSLLECL	VLLVKRPDFF
VFGFLLPPSQ	EGLDDILRDF	PSNPLDSVLA	IVDPLDHAGF	SEYTRVVNAL	LNRPLARSNI
WLLRHFLTLD	NVRETRVLYA	VMQHVLNGAA	SLDAEQWMTL	ARRLEKQSPN	TALAIILAVT
ESALEPPSLN	RYRNELAAGI	LGIRGLALLR	RLAITAPDPD	SDVVFLPQNR	AVNFMKVCQT
WVTSDIDENV	ESEMTLIFLH	LAPILQNVPG	AHWEFVFDVI	ENNLENCSEFA	DSSTLPALAR
TLKLILAVQD	LAITNKSLRS	WHERELPILT	LVRDLSVPRS	VCWEMAFSIE	YLVVEAGVDT
ASLRVKMGYA	TQLRDLDMIG	SSFLPIVLDL	LDVYKPFQLE	VWSVEEYFVQ	LYDQFSPKLL
AAHLFYRALL	NVPSLISSWW	GSCKDRQLST	AVASLTTKHY	SPVLIAAELG	HVKDPVEEKK
WRGWLLAVQQ	IQNGRIVDGL	SMFKKNVTHH	FENQTECAIC	YSIIKRCRTC	KNRFHAGCLY

>PS

KSSATSGTRK	KHARKLRNLR	KKDAVTKARA	LEDLQHLPSL	LTSASRRVRL	LAAGLHDSLL
GTWCAATHDV	DRQVALQASR	SWWTTKVVL	PGGAHAYLNP	EEKGQDRDAR	LRIGGLGALG
WGFEQPGVRR	AAWGLLSVLL	SPALLRAAWT	EPDALVRAAM	WEPLLVFLQG	FPQAWTWIEF
LQFLALGSPL	QGYPVVVLVL	STIPPSLFTA	FWAALDGGAL	AFIGALLECI	LFLSRRRDVF
VVGHVLSPSR	AELDAMLGRL	PATPLHVSLG	VVDPLDVGDF	SSYARVVSAL	LDRQLARTNI
WALRHLLALD	NPRTSRIVYP	VVHHVLSGSD	KPHAEQWVQI	LRKMEKQAPE	SSLAILFAVA
QSGLEPTRLD	RYRNELAAEL	TGVPGLKYLR	RLHMTIPNPD	SDVAFLPQPR	AVNLVKSFOK
WVADAVNEEV	ESVMTDIFVA	LAPILQNVSG	SHWDFMFDVV	ENNLENCSELA	EEETLTLLAR
SLRFVSTILE	LVTSNKQLKA	WNERQSAVLV	LIRNISVPLS	TCRELALSIE	FLVVEAGVDT
ASLRVKAGYI	EQLRDLDIVA	SRLPAIFEL	LQVYKAFKLG	MWAVENYYVD	LYDPISLQVL
AAHVYYRALL	VVPSLIRTWV	NDCKDRTLRS	TITTYTSTHF	SPVLLEAELT	HIKESVLEDR
WRSWVLGVFA	LQNGSIIIEGL	RLFMKNVAGH	FEGQVECAIC	YSVIKPCRTC	KNKFHAGCLY

>WC

KSSASSATRK	KHARKLRRLA	KKDGVTKRRA	LEELVHLPFL	LLHPTRGIRQ	LATSLHSSLL
GTWLLATYDV	DRQTAARARE	TWFLLRALRD	PGGLYAALNP	EESEGDRRAR	LRVGACGAVG
WGHDQPGVRS	AAWSLLHAL	SRVVLRSAAV	ELDVGVRGVL	WVPVLIFLRD	FPQCWAWREF
MDFLALGAPV	QGYPAVLVVL	STVPDSILVN	FWAALDGRAL	AFLEALCECV	VLIVRRPEIF
LYAHLPPPTA	QEMASMLETL	PSCPADASIA	VLDPLSSDGF	SSYARISYGL	LDRHTAKTNA
WTLRHFLALD	TVRESRILYS	ILQHALDEAT	TAEAEQWILL	ARKTERTARQ	MSLAILYAVT
QYAPEPPILD	RYRNELAAGM	MGVPGLWLLR	RLAASAPDPE	SDVIFLPQQR	AVNVLKACQQ
WITADLEEEV	DSAMTLVFLP	LAPILQNVPG	GHWDLMFDVL	ENNLEDVSLT	EPDTLVTLRS
TLRLFMATED	LASTNKALRE	WQQRRLTCLT	LIRDLSKPLS	VCRELALQAE	HMVIEAAVDT
ASFGVKSQFI	SQLRDLALVG	THLLPCLFSI	LGLYTPFKLG	IWEIDQYDL	LYTALCLSL
SAHIYYRALL	TVPTLVRWSL	SDCRDRQLAL	SVSSYTARNF	SPALIHAELV	HVRDPVPEEK
WRRAWILGLQ	IRSGSIVDGF	GFFKRNIIISL	FEGLTECAIC	YSIVKPCKTC	KNRFHAGCLY

>GT

KSSASSGTRK	KHARKLRSLR	KKDAVTKAKA	LEELLHMPAL	FLHPSRRIRL	LAASVHSSLL
GAWCMAGSDA	DRLVARHARA	SWMLQRTALD	PGAVYLSLNP	EESEDDRNAR	LRVGALGGLK
WGCGQPVVRR	AAWALVQALL	STVVLRSWV	EPDPTVRTVM	WQPLMMFLKE	FPQAWAYDEF
LQFLQLGSPL	QGYPTVVIVL	STLPASFFTS	FWAAVDARAL	AFLSSLLECT	AFLVRRPDLC
LFAYVLPPDS	GTMLRMLEGL	PTYPEDPSAA	VVNNLDSEGY	SOYGRVTTAF	ADRQAAKEHI
WALQHLLAAD	NPREARVLYA	ALQTVMSGAT	KEEADWIML	ARKLEKKAPL	TSIALVSCVT
AFGPEPPRLD	RYRNELAAGI	FGVPGLLSLL	RLAATAPDPE	SDVVFLPQPR	AINLMKACQQ
WVESDISEDV	ESAMTLIFYH	LVPILOQDVP	GHWDIFFDVI	ENNLENGSFN	ENSTLVTLLR
TFRLIIAIQD	IATTNKSLRA	WDERRQAVLT	LVRDLSTPQL	MSLELAMSIE	NLVIEAGVDT
ASFKVKSGYI	QHLRDLDLIS	TRFLPYIFNA	LGLYSTFKLD	VWAVDEYHVS	LYDPVSAALQ
AAHLYYRGLL	IIPSLIRAWL	QDCKDRTLST	TVTTFSTAQHY	SPVIIATEFA	RVKSPVEENR
WRAWVLGVQQ	IQNGSIVDGL	SLFKRNVSLH	FEGQVECAIC	YSIIKPCKTC	KNRFHSTCLY

>PC

KSSASSGTRK	KHARKLRKLA	KKDSVTKRRA	LEDFQHVPAL	FLHPSRRVRQ	LSVNLHVSL
GSWLLASYDI	DRQVSVAARG	AWFIQRVLLD	PSGIYLQINP	EESEADRKR	MRMSGFGALE
WGWNQPGVRR	ACWAAIQALL	SVAILRSWA	EPDAAVRNFM	WQPLLTFLRE	YPNAWAYEDF
RQFLELGSVP	QAYPAVIVL	STIPPSIFTS	FWAAIDGHAL	AFLSALLECV	VFMVRRPELF
LFSTLVPPPQ	EELDAMLEDL	PTYASHVSLA	VVDPLDAFGY	SVYARVVL	LDRDAAKQSL
WALRHFQALD	NTRESRIHLS	LLRHILPNVS	KEEADLFIGL	ARTIEKKAPR	ASLAIYAIT
QYAPEPPRLD	RLRNELAAGL	LGVPGLWLLR	RLAATAPDPE	SDIVYLPNT	AVNLMKPLQQ
WITSDLDEEV	DYQMTSIFIH	LAPILQSVPG	AHWDLVFDVM	ENNLENSSL	EASSLPLLR
TLQLVIAIED	LTSTNKALRA	WLERRNQILT	LVRDLDVPLS	LCRELALTVE	HLVLEASVES
ASLKVKVEYV	NHLRQEGKIT	DYFLPLIFNL	LGLYHAFKLD	IWSIDEYYLD	LTSSLRLPLL
AAHLYYRALR	VVPGLVRSWL	ADCRDRQLNG	TVTAYTSTHF	SPAIIRAELA	QAKDPVTEDR
WRSWVLGVQQ	IRGGSIVDGL	AFFKKNVTSH	FEGQSECAIC	YSMIKPCRTC	KNKFHSGCLY

>DS

KSSATSATRK	KHARKLRLLA	KKDATTKRRA	LEDMQHIPAL	FLHPSRRIRL	QAIALHSSFL
GSWCLAVHDV	DRQVSSFARE	SWFVQRTLLD	PSGVYLYINP	EENEQDRKR	LRVGAFGATE
WGFEQPVVRR	SAWSLLQTLL	SSAILRSWV	EPDPNVRAAM	WQPLLVFLKE	HPNAWAYTEF
LQFLATGSPA	QGYPTVLIIL	STIPSSIFVS	FWAAVDARVL	AFFASVLESL	VFVVRPPYAF
LLAFLLLPPSR	AELDSMLEAL	PSTPLDPSLA	VVDPLDTQGL	AKYARTVHGL	LERQTAKESM
WALHHILALD	TVRESRVLHM	ILRHALSTAT	KADSEQWMLV	ARKIEKLAPH	TSLAIIFSIT
RYAPEPTRLE	RFRNELAAGT	LGIPGLWLLR	NLAASAPDPD	SDVVFLPQQR	AINLIKACQQ
WITSDLEEDV	QSEMTLVFAS	LVPILSNVPG	GHWDLVFDVV	ENNLENSTLD	DPSTYVTLR
TLQLFMIIED	FASSNKALKA	WDERRSAILT	LIRDLSTPLS	MCRELALQIE	ELVIEAAVDT
ASMVKVSGYI	DQLKDLDLVG	SRLLPVVFGL	LDLYKAFKLE	IWDVDEFYLD	YTTISLRL
TAHLYYRALL	LVPPLIRAWL	NDCRDRQLHT	TVTAYTSRHF	SPAIIRTELE	RVKDPVTEDR
WRAWVLGVRR	IRSGSIVDGL	SFFLKNVTSH	FAGIAECAIC	YSIVKPCKTC	KNRFHAACLY

>TV

KSSASSGTRK	KHARRLRLS	KKDATTKRRA	LEELQHLPTL	FLHPSRRRL	LAIGLHTSIL
GSWCLAAHDV	DRQVSSHARE	SWFVQRTLLD	PGGVYLYLNP	EEDELDRKR	LRVGAFGATK
WGFGQPVVRR	SAWSLLQTLL	SSAVLRSWV	EPDTIVRAAM	WQPLLMFLKD	YPNAWAYTEF
LQFLATGSPA	QGYPTVLVIL	STIPPSIFTS	FWAAVDARVL	AFLSSVSESL	TFVVRPPYLF
LYAFLLLPPSQ	EELLVMLDDL	PSTPLDPSLG	AVDPLDSAGF	NKYARVVNGL	LDRQMSKENV
WALRHLFALD	NVRTSRILHM	ILQHAFRNAT	KADAEWLMGA	VRQTEKLAPH	TALAIIVSVT
RYAPEPPRLD	RYRNERAAGA	LGIPGLWLLR	NLAAAAPDPE	SDVIFLPQLR	AVNLIKACQQ
WITSDLDEEV	QSEMTLLFAH	LAPILQGVPG	AHWDLIFDVV	ENNLEDASLD	DPSTLVTLR
TLRLFIIIED	LVSTNKALRA	WEERRAANLT	LIRDLSTPLS	VCRELALQIE	TLVIEAAVDT
ASLKVKSGYI	DQIRDLDLVA	AKLLPTLFSL	LDLYKAFKLD	IWDIDEFYLD	YTTISLRL
AAHVYYRTLL	LLPSLIRTWL	TDCRDRQLST	AVASYTSKHF	SPAIIRTELA	RVKDPVTDDR
WRAWELGVQQ	IRSGSIVDGL	SFFLKNVTSH	FEGVAECAIC	YSVVKPCKTC	KNRFHAACLY

>FP

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KSSASSATRK KHARKLRLA KKDSITKRRA LEDFQHMPAL FLHPSRRIRL LSVGLHSSLL
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WGWNQPGVRR AAWSLLQTVL SSAILRSAWV EPDPNVRTAM WQPLLTFLRE HPIAWAYREF
LQFLELGSPL QGYPTIIVII STIPPSIFAS FWAADVGRAL AFFSALLECL VFLVRAAEVF
LFANLLPPSR SSLDDMLERF PSVPGDSSLA VLDPLDASGM SEYARAVGAL LDRHLAKTNG
WALRHLLALD TVRESCILHV VLEHTLGNAS KEDAQQWVQL GRRLERQAPH TSIAIVYSVT
QHAPEPPLLD RYRNELAAGI YGVPLWLLR RLVATAPDPE SDIVFLPQLR AVNLMKTCQQ
WITSDIDEDV ESEMTLIFLH LAPILQNVPG AHWDFIFDVM ENNLENSSLV EQGSLVLSR
TLRLFIAIQD LASTNKALRD WHDRENTSLT FVRDISAPLS ACRELALQIE HMVIEAAVES
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AAHLYYRALL IVPSLIRSWL SECRDRQLLN RVSTYTATHF SPAIRTELT EVKDPVPEDR
WRAWMLGIQQ IRSGSITDGL SFFKKNVSSH FEGLAECAIC YSIKPCRTC KNRFHAGCLY
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>PP

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WGFAQPGVRR AAWSLLQTML SGAVLSAWV EPDVNV RATM WQPLLTFLKD HPSAWAYREF
LQFLELGVPL QGYPTVLIIL ATIPPTVFTS FWAALDGRAL AFLSSLLECL VLMVRRPDVF
LFSHLLPPSR ADLDDMLIRL PYTPADPSLA VVDPLDQAGF SVYARAVYAL LDRHAAKINV
WALRHLLALD TPRESRIIHV ILQHVLSFVT KPEAEQWLQL ARRLEKQAPH MSLAIIYSIT
QYAPEPLMLD RYRNELAAGM LGVPGLWLLR RLAAPADPE SDIIFLPQLR AVNLMKVCQQ
WIASDLDEEV ESEMTLVFFH LAPILQNVQG VHWDLIFDVM ENNLENASLK EASTLVNLSR
TLRLLIAVED LTSTNRSRA WQERETTCLS LVRDLFTPVS ICRELALQIE HIVIEAAVES
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AAHLYYRALL VVPSLIRGWL SDCRDRQLLS AITAYTAAHF SPAIVRSVLA TLRDPVAEER
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11-Concatenated alignments 10genes

>Coprinos cinerea

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>Gloephyllum trabeum

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>Wolffiporia cocos

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>Dichomitus squalens

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>Trametis versicolor

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>Punctularia strigosozonata

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>Laccaria bicolor

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>Heterobasidion irregulare

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>Coniophora puteana

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>Schizopora paradoxa

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>Auricularia subglabra

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>Exidia glandulosa

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 NLMVRNNP SLMGSFSL LVHNPRVLD FDNKRNYFNQQ LHRRREHHGTLQLNVRRARVFEDSFQYLQRRTGEQIK
 YGKLSVRFYDEEGVDAGGV TREWFQILARQMFNP DYCLFQPCAADKLTYQPNRASAVNPEHLSFFKFVGRVIGK
 AIYDGRLLDAYFARS LYRQLLAKPVDYRDVEWVDP SYYN SLCWLLENDPAPLDMTFSFGVTKVIPLKENGASIP
 VTIENRREFVQLAAEYRLYSSIKDQIESLLAGFYEII PKDLVSIFNEQELELLISGTPDIDVDEWRAATEYNGY
 SASDPVIVWWWRAKSF SRDERAKVLSFATGTSRVPLGGFVDLQGVQGVQRF SIHKAYGGTDRLPQAHTCFNQV
 DLPQYSSYEMLR TQVLLAINEGGE GFGFAKSSASSATRKKHARKLRRLGKKDAVTKRRALEELTHFPSLALHPA
 RRVRALTASTHAALLGPWCMLAHDM DRAVAMAARPTW FASRAAMDPAALHAELNPEEAATDRAARLRV GALGAL
 GWGQDQPGVRRAAWSLVGLLVASAVLRS AWVEPD AVVRAAMWEPLLVFLT KYPTAWAYA EFLQFLALGSPARGF
 PTVLVILSTVPPDIFTALWGAVDGRALAFLSAFVECVLFFASRPKAFVLARLVPPPASELERMRVEAARVPYPP
 SYAVVEPLDSHGKTAYTRVLEALVERSLAREN PWIIAHVALLATPREAVGLGKLLKRL LNGAEVNDAEAWIRAA
 RSLERSTPGASHAILRTISSTALEPPLLARYTELAATLAGVPGLRLLRALNAAAPDASGDAA LVPQQRAVFLM
 KTIERWIEDAIDEEVESGMTELLVSLAPVLQSVPGKHWETVLDLIENGLESTDMGEEDELLSLARTLRLLASVI
 ELAASTKMLRQWAPREKKIMALVLRLSAARAACKELLISLEYLVIESAASTASAKVKAGFVEQLRDL DLVELYF
 APNILGLLGVMKSF KLDVWAIEEFFLSLYDPLSPRLLSAHLFFRALESTPTLIRGWFLKSKDRQLHTAVSAYIS
 SYFSPPLIATALQPLRALIPENRWRAWTFGLAQNGDGGVLEGLRNFRKNVAGHFDGQVECAICYWCVVGCGPVA
 SPRRRTQFFPAPAAKLD FS SIKTESPRPF GLEDCPAFY P SMEEFKDPMK YLQTVAPKAQ EFGICKIVPP
 VGWKMPFVTD TEFRTTTLQ RLNSIEASSR AKLTFLEQLY RFHSSQGNSS IAVPTVNHKR
 LDLWLLRKEV QKLGGEYAVK NKKWAELGQL MGYQSPGLAS QLKNSYMKII LPFENYSDHV
 RSALCDGCA GYHIFCLDPP LSAIPRGQWF CSKCLFGTGD FGFDEGEEHT LQSFMTDRDT
 FRRHWFQAH P PYSEGDVESE FWRLVETPFE TVEIEYGADV HSTTHGGMPT LETHPRDPYA
 RDPWNVNNIP ILQDSLLRYI KSDISGMTVP WTYVGMIFST FCWHNEDHYT YSINYMHWGE
 TKTWYGIPGA DALKFEAAIK KEAPDLFEAQ PDLLYQLVTL MNPSRLREEG VRVYACNQRA
 GEFVVTFPRA YHAGFNHGFN FNEAVNFALP NWLPFGLECV KRYQEHSKLP VFSDHELLIT
 ITQHSHSIKT AVWVLD SLRE MIDRETAQRR AVLPGIQETL EEYDPENQYQ CHVCKAFCYL
 AQITCGCVAC LEHAKLLCNC RVLKRKFSDE QLEDVFSKV V ERAAIPSDWQ AKLQRTLQET
 SRPNLRVLRA LLAEGERSVF HLP ELLALRK CVQRANEWVE VATSF TTRKQ ANKRERPERG
 LKDVYALLDE VELLGFDCPE IEQLRRIAQT AEEFRKKARL TIL ETQITLG QGLNMHLDEL
 DEMKRIFMRC RLVRDLLDDV RQLLNRAKHC GLADDSKVVL GLLEKQRAGD EWCKKVTDLL
 ALPKKPLVEI PIEPTLLSNL TASRNSARGY ERQAKFMLAP ELPRPKDALD LVHSAEKA FD
 IPIIEDLRRS AEFAQDLEEK CEAILLKRFK HGSPFTVFRK WVAYAHALS FRLANFEKLD
 RQLIAHSQWI ERLPWYCHSD AILRDVRDCT NPEDETPPD EFISCICERQ VRPPPPGEVS
 DAVQCDHCYA RFHGACATNG GSCPFC DHNH WNGSIHKDRN WHFCFLPTML VTAPDITKFY
 SVSWKELEYI VARVDRLCVS IGSFLSFASN QRLELIPQVR QYMRKLFRIQ FAVSPNPEVS
 YGLDLAGLHR MLASKPPKKK RRVRLVFQPE VAPDPADGTR CVCNGAGCSQ WYHETCVWFC
 PICA VKKTRV YPYAEIRVRQ TPSEQLRRVS LAPKNAIL ELHRYSV

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