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S S $\square$ F ES E Y
S QA $\square$ Q S V
$G L$
$\stackrel{G}{G}$ L

HINK
WL DARDG
GLAAE】G
A L D

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\(S P D F D S D Y\)
G L D R
GL
GLER
A
D \(L V R R \square A\)
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S PLM K Q S Y R
WLK K K S Y S
SLK R
A L D
\(\stackrel{G}{\mathrm{~N}} \mathrm{~L}\)
\({ }_{\mathrm{R}}^{\mathrm{N}} \mathrm{L}\)
GLER
S
S
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A L E R

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GL
QLRTRDAH
GL
S F
\(S A Q S L V A H\)
\(G L\)
G
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G M
G

T L
A L A A
$\stackrel{A}{A} A A^{A}$
S
S $\quad \square$ HTSSKYE
S PAF LQQ
G
Q L Q R LVA H

G L D
ALER
G!
$\mathrm{S} P \mathrm{D}$ F A S A
HPDAFM
S $\square$ N A L $\quad \mathrm{ME}$
S
S
S
$\stackrel{S}{\mathrm{G}} \mathrm{L}$

| G |
| :--- | :--- |
| A |
| Q |

G
S
A $\square \mathrm{A} T \mathrm{R}$
S
$\mathrm{G} L \mathrm{D}$
SLLDD D S Y E
A L
A
${ }_{\mathrm{N}}^{\mathrm{A}} \mathrm{L}$
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G L D
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Al A Q Q S

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UniRef90_R6UAE1

## 



[^0]G GR|I LD L L D $\mid$ L $N|L| T R|L| K S G P|L| G G D Q Q|L| G A M|I| C E G R|L| D G|L| F F$ GRVL QERFDLDVVALKS GPFGGDQQLGSMIAHGELQAMFF









## G

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## \section*{}

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## \section*{A}

 GEAL SKYKLLDL HPVVGN

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| $A$ | $R$ |  |
| :--- | :--- | :--- |
| $A$ | $Y$ | $L$ |

$\begin{array}{llllll}A & K & A & & R & Q \\ A & S \\ A & F & L & E & E & N \\ A & D & F & E & K & E\end{array}$
A DLDE K E

A D F L K K E S
ANYLA A A
AKF L E D N
AEYFEQA
A E T L
A C Y A A
A F L L
A A A

| G | L | E | V | E | E | V |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| G | R | K |  |  |  |  |
| I | E | V | E | R | V |  |
| G | S | R | V | E | P |  |

A
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 A AVI E EA S I PVVEV G GKVGS D QRVI DLI QN GDVQFVVN


|  FTDPMTPQPHDVDVRALIRLANMYEVPGACNRSTADLLIS <br>  FRDSSSEDEYNDTEANLVRLCDLHNVPVATNHATAEALIL <br>  <br>  LI <br>  FNSPGDNEMDKDVLYUTRLCDQHSVPVATNVATAELLIU <br>  <br>  <br>  FEDPHVARQHEADIQLLERAVRVHDATCATARQVARKWAD FEDPHVARQHEADVQLLERAVRVASATCATSPSVAQRWAE RG |
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 $\stackrel{F}{F}$
FEDPHVAREHEADDQLLERATRFAGCLCDNDTASAEFWTS LLEDPHVARQHEADI QLLERAAVT DYALCISNENCGERWLD FRDPLARRPNRAS\|DALRLCDASQVICATNUQTARA\|LT

| $F$ |
| :---: |
| $L$ |
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$G \mid L$


G
A L D R
S
A L K S R L A Y
Y L
A I A K R
A L K S R V A H
G L
ALER
A
G L
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GLL
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A V Q R R Q A G R
$\mathrm{G} \mathrm{L}_{\mathrm{R}} \mathrm{EA}$
A V Q R A N A
A V CKRQA

Y LE T L

A A QKRAG
A
$Y$ LKH $\square$
$G V R L R A A R R$ $G L$
A A R R R
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A WK Q D S GYRS

| $L$ | $E$ | $A$ | $L$ |
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GFGA LV


Y

AL E NR S
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VLEA
$V$ ME S R

A L E N R S
GI E A L Q S H Q
V MEDR
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$\begin{array}{lllll}V & L & E & S & L \\ V & M & E & S & Q\end{array}$
$V$ L E S M
$V$ E S M
TL D S $\quad$ D
GL S H R S A Y
VI E S M
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$\begin{array}{lllll}V & F & S & M \\ V & L & E & A & L\end{array}$


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 AKALQAAGLPVEKVNKIREGSPHIIDLIRANKDDLVIN AAYFEKNGLIVTPVAKISEKAEKNVVELIREGKAQVVVN AEFLREQ

ADFREN
AQTLEA

## ANYLKANA

AKYLCSNAI PVNVVEKTDST DLLNLLDVIRTGEAQLVI N AKY LCSN GLKVKPVLKVHEGRPN I EDAI RSDQVQMII N



## ARKLAEN

ARKLAEN NI PSEVVGKIGGEDDLLTRI QNGEVQIVVN GNYLREHEGMRVRRVGKIQEDGETMLGSVIERGDVDLIVIN ARHLQ S LGLSVTLVDKVHEHKPDNIIQMI KTGKI NMVI N GLLVEEVAKLDEE VNGNDVIERLQNGTIQAI N
 AEALNAAGLNVTTVQKLSDGTPN ILDLIRNGEAQFV AKFIQEA NIPVTVV NKI AEEIREGQAQFVTN AKFLEEKG|HVGRVEKASAGTPNLLDDIKEGRMCMVIN
 A Y YLKRN GVDVEVVNKISEGRPN I LDEI DUNGVVHLII N ADULQQA GUP PCERVNKUQLGSPN I LDELIMAGRVSLMI N
 ASYFENHGLHVRLVEKIGSDDDKDIPAYIRKGKVQAII N SKY
 AKFVLRSH GLYVFDVAKVSENSEEEVLDVISKGHVNFVIN A AMLKEAGLPVTAMISKKLSGHPNVDDLINDSTVNGVVN ATFLTEN ADYLEQA GKLI QDA
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 AEFLNEN ADFLRGH AQALRES G
AKALKEA
ANFLRSK
GKYFK K
GRYFTEH
ARRL
AAVLTEA
YKFLKEA
YEMI DEA
A AYLRKH LHVEPVTKVHEDEEENI LNELRNGKIDVVIN GVEVKEVNKLSEEGSPNVIELIKODKY DVVVN GLPVTEVSKI

AKYFEEH

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| UniRef90-E4RIW5 | V L K |
| UniRef90-UPI0004704ED6 | 1 L E M S |
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| UniRef90-UPI00034A45B9 | V L E S |
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| UniRef90_A0A023X2S9 | GI E A T $\quad$ R G E T |
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| UniRef90-D7GVQ0 | S MEN R |
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| UniRef90-C7NBF8 | V L E S $\square$ S |
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| UniRef90-E4SZQ9 | ALEA |
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| UniRef90-I0GRK6 | V L |
| UniRef90_W7YW23 | V L E S 1 |
| UniRef90_Q6A914 | V MES RV |
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| UniRef90-K9SBA5 | A $\$ R S LQ S H  \hline UniRef90-W4LM56 & G\\|R S L R E G E T  \hline UniRef90-R7CZ07 & A  \hline UniRef90-R7PCP9 & A  \hline UniRef90-C3P656 & VLE S M  \hline UniRef90_UPI00046D3C47 & Al R S L  \hline UniRef90_UPI000364A51C & S L L S  \hline UniRef90-D5XAD9 & IL E F L  \hline UniRef90-X5JWD9 & A I R S L  \hline UniRef90-K9R6B8 & A I R S L  \hline UniRef90-F2TY60 & A L A K M  \hline UniRef90_UPI000288BDF2 & V I E S M  \hline UniRef90-R5NV90 & A  \hline UniRef90_UPI000412AD58 & S L E N A Y N E E  \hline UniRef90-A5D508 & VL R S V  \hline UniRef90_K4L2Z3 &  \hline UniRef90-R7A1R6 & T L E S Q Y  \hline UniRef90_Q38X24 & VLES Q S  \hline UniRef90 D1YV00 &  \hline UniRef90-C9LS45 & V L  \hline UniRef90-A2BWE6 & A K K L  \hline UniRef90-T0UBH2 & V MES R  \hline UniRef90-K8GGJ0 & SLLQ S Q  \hline UniRef90-R5FZV9 & S  \hline UniRef90-R6G6C3 &  \hline UniRef90-M1ZI67 & VLE T 1  \hline UniRef90_Q607A9 & AL D E L  \hline UniRef90_U4TM05 & CLIA ELHDKE  \hline UniRef90_F9D6L4 &  \hline UniRef90-R7BNR6 & A $\square$ E T L Q S |
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| UniRef90_K8E457 | VLE S R S |
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| UniRef90_M1AC15 | S L K |



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UniRef90_R7KYY

## 

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| A $S$ | $Y$ | $L$ |
| $L$ | Q |  |

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A SY L QK V GVEVVETVLKLHEGRP
A LTLL NSNVAANTVRKLGEP
A GVI K D F GMEVVTVVNKIHENPDDNLLTMLLDTGKI DYV I S

 | $A$ | $Q$ | $F$ | $R$ | $D$ | $N$ | $G$ | $L$ | $N$ | $V$ | $T$ | $T$ | $A$ | $L$ | $K$ | $I$ | $G$ | $A$ | $T$ | $Q$ | $D$ | $Q$ | $S$ | $V$ | $L$ | $D$ | $L$ | $I$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $N$ | $S$ | $S$ | $G$ | $C$ | $D$ | $A$ | $V$ | $I$ | $N$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $Y$ | $N$ | $L$ | $L$ | $K$ | $E$ | $N$ | $G$ | $I$ | $N$ | $V$ | $E$ | $F$ | $V$ | $K$ | $K$ | $V$ | $Q$ | $D$ | $G$ | $R$ | $P$ | $N$ | $I$ | $V$ | $D$ | $L$ | $I$ |
| $K$ | $N$ | $R$ | $E$ | $I$ | $K$ | $F$ | $V$ | $I$ | $N$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | GAYFARA GLLPVT LLQKGSQPGYSTLDAL R DGKIMQI I N

ARFLR A H
A A F L E L
A R A M
H A
HRTISEA GVDVESILKI HEGRP


GNYLK
A M A L R N N
ADFIYEH
HRILKKK
A
,

## A E A L Q K A

C
GQYFA $\qquad$


A $\square \mathrm{F}$ L K E HILRTRDVKKKDSE GSEEILLDSMRKGYVNYVIS
A EMLRRRN GIP CERVRKGES GAP QTMVEQIRD GEI DMV
A DVL K K Y GI D A V S V K K I HE S K T N N TLLT LI E S GKII Q Y V I S


## S A A A

A

AKVLK F N L
Y A L LTEN
R SHLLE E N
A A K L L R E A
A D Fl Q E H
STFFEDN
AK $K L E A Y$


| S R A | $L$ | $E$ |
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| S R | L | L |
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AKYLDEH
A D ML L R R N
ARYFN E N
CKLI REA

| A | $K$ | $A$ |  |
| :--- | :--- | :--- | :--- |
| $A$ | $A$ | E | $E$ |
| K | K | G |  | | $G$ | $V$ |
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| $G$ | E |

 A QAL EAA GVTCERINKVTEGRPB
ADYLQ AH
$A D V L R R N$
$Y K F F Q D N$
$A K F F E E N$
GHF
GLYVKTVQKIHE

A E FLLRN K K
A A LL $L$ E A E
A D F
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ANHFKQE
SKFLREH
CRFLNEN
A K Y $\quad$ L K S
A A YLKEK Y EAI KSVVIV

## N R

AEALK
AKFLRAL
AKFLSENL

 ATA ATMNM
AKY NDN

QKVLREA
FKALSD
A AVLRRNGGVK
YDLLTKN


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| UniRef90-R5GKG9 | S LE S |
| UniRef90-D4ZYH3 | ALRSLQKH |
| UniRef90-TOIFE2 |  |
| UniRef90-A9S2A9 | SL Q A V S G |
| UniRef90-E6U5E1 | CLE |
| UniRef90_U1GRY7 | CLM S H Y N A E |
| UniRef90-D5ERI4 |  |
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| UniRef90-E4THY7 | GI |
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| UniRef90-B4WNQ7 | A I R S LK E N Q |
| UniRef90_W2VPE4 | SLEN |
| UniRef90-Q8CUM7 | S MK S |
| UniRef90-W0DD84 | A 1 |
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| UniRef90_FOS0X3 | AIES M |
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| UniRef90-M5TT22 | A MK A V |
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| UniRef90-A8U818 | VLESR |
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| UniRef90-R6Z891 | VLE |
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| UniRef90-D4L4P4 | CLK S H Y S H S |
| UniRef90-U2F1T1 | M L A S |
| UniRef90_E8V795 | G $\downarrow$ E S L Q R Q T |
| UniRef90-E4T1S7 | A FCTMS |
| UniRef90_UPIO002FAC2FC | A $\square \mathrm{K}$ S L R A H Q |
| UniRef90-R5FMS3 |  |
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| UniRef90-M1E6X6 | AI EAL |
| UniRef90-R7MMY6 | GI R S V |
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$T G E D A Q A D G R L I$
$R ~ D G Y Q!$
$P N N N T K F L K D N F$
$S P H G R D P H R D S V K$
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$036 E F 472$

I P H ${ }^{\text {D }}$



        A G A E A LA G
    | $T V S$ | $G L$ |
| ---: | :--- |
| $N$ | $E$ |
| $T$ | $T$ |

                        A \(A\)
    $A$
$A$
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A
A R
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$T P \quad S G K G A R T D E G R I R A S A V S H G V P C I T T L$
$R D G Y Q$
$K D N F L$
SPHGRDPHRD



\section*{R A A <br> | $A$ | $A$ | $L$ |
| :--- | :--- | :--- |
| 1 | $D$ | $L$ |
| $V$ | $D$ | $Y$ |
| $T$ | $L$ |  |}

$\square N N L P E S \square R E A Q E$ P TKGNDSNRDGFK


K TK R LI GYM R S AI D SNI:


NTNSGAQSVSDSFDI
R R SALTHGVEVMT
I
A THGVPNTTMA

PTKGNDLEREGFKI RRRAVERN K




$\begin{array}{lll}\mathrm{K} & \mathrm{P} \\ \mathrm{P} & \mathrm{P}\end{array}$

$L \quad D$
$M A$
M A

| $T$ |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $A$ | $A$ | $A$ | $V$ | $Q$ | $G$ | $I$ |
| $D$ | $T$ | $L$ | $R$ | $A$ | $V$ | $V$ | $K$ |




$P$ T K G N D S K R D
$P \square G S Q A L Y D D$






T T N T T
T

EGR

$V Q A A R A T V A$

I A A A V A A A R L G A R A V C M
L T A N A L L
D
$\begin{array}{lllllll}S & V & K & G & R & H & P \\ E & L & A & K \\ T & S & R & Q & S & R & K \\ D & G & Y & H\end{array}$


| D T A N A L L |
| :--- | :--- | :--- | :--- |
| I |
| Q A A R A S |

$\square \mathrm{P}$ NTVSGKSSQRDSLS I RRETLARNDPYYT
TSDSHSFKGDTKK KIVNI DRFYTNLRSALAGAK

TSDDLDSR
TS D S L D
$M R G G L$
$Q \square D G R Q L$

$\begin{array}{lllll}1 & D & G T & R & A \\ L & L & L & S \\ K\end{array}$

| $T$ | P | G A | $L$ | $A$ | $I$ | $C$ | $R$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $T$ | $V$ | $D$ | $G$ | $A$ | $R$ | $A$ | $T$ | $M$ |

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lupas_28
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| UniRef90 I3Y9S5 | A L K Q L |
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| UniRef90-I3VT14 | A V Q K V |
| UniRef90-A4BTS3 | ALLD Y L S |
| UniRef90_R6ZZ12 |  |
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| UniRef90-K2BAQ7 | C L I N L |
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| UniRef90-V4UEY7 | S L K S |
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| UniRef90-R5SAR9 | A F CSMS |
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| UniRef90-UPI00036901B5 | A ${ }^{\text {I }} \mathrm{EAM}$ |
| UniRef90-U7PN76 | AMARHYDLDE |
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| UniRef90-B6G248 | VKK Q H $~$ D K D |
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| UniRef90-UPI00047CD202 | A L R A E |
| UniRef90-R7RN47 | VMENK VEY |
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| UniRef90-W9VSA6 | A LD F Q T S R T |
| UniRef90-D4MU23 | GI A YVKAHQ |
| UniRef90-B8MER4 | ALD HQ S HRT |
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| UniRef90-UPI0003819C5D | A MKR |
| UniRef90-A0LQ78 | G 1 E A |
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| UniRef90-R8VX97 | CMES |
| UniRef90-D5EBC9 | A 1 K A M |
| UniRef90-S0G4S1 | A I K A L |
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| UniRef90-Q9PIL7 | S 1 K A T Q S |
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| jhmm |  |
| jpssm |  |


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