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 ENGTF KVII NHE E QY S L L WP S Y K T I P G G WK DT GVVS G D K A T C

E D

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 D NGEF YVVLV N D E E Q H S L WP T F A GVVP D G WR VVVFGPA G R A E S NDARYLVLRNDEGQHSSLWPAFAAVPGGWEVRVPSSPRSEC E D A D Y L V L R N E E GQY S L WP T F V A DV P D G WE P VVGGEAPRRAC DQATYLVLRNEEGQHSLWPSFVEVPAGWQTVHGQADRQSC DGTFLVLVNDENQHSLWPEFAEVPAGWRTVHGPAGRQDC
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 D GTFLVLVNDEGQHSLWPAFADVPGGWTVASGPAPRAAC ENGHFRVLVNAEGQHSLWPTFAEVPDGWE\|RJGDSSRKDC EQGTFHVLVNHEDQHSIWPAFAAVPEGWRTVLEGADRAAA EGQFLVLVNDEGQHSLWPVFAAVPGGWAQVSGPDSKEAC

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 E A Q Y HV L T N D E NQ H S L WP A FA E IV P A G WQ S V Y Y G P E G R Q A C
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LSYI EQHWTDDRPAGLI




## UniRef90 U5W526

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UniRef90_S4MH16 ENAVFRVVVRNEDMYSIWPLHRPVPAGWSDAGFTGTKAAAC GSF LV L R NAEE QVVSLWPAFA GVVTGWQVAK GPNSRAA C D G $\square F V V L V N D E D Q H S L W P V K L E V P A G W R Q V F G A A G R Q E C$ DEASYFVLVNQENQHSLWPASIEVPAGWTATHGPAGRQDC D D RTY CVVVLNDE E QY S
 ETIIEYFVVI NDEEEQYS I WPAHRDLPAGWHATGPARPRRDC
 D DAEFQQVLVNDE GQYSSWPVANEVMA GWRA DGFR G GRQEC
 D E DT Y V AVV NDE E QYS I WA R GR DLLPA GWREA GFSGPK QDC SQPYKVVLNHE
DGTYVLCNEE

 DTAAEFDVVVVNDEEQYS VVWPVGREEVMA GWRAVGQRGPRRDC DTTKYAVVI NAEEQYSI WPADREV PAGWR LEGTMGGKDEC
 DKT I Y K V V V N HE QQY S I WP A ERENALGGWQDAGRRSSRREEC EDGTYFVLVNAE GQHSLWPHAVDVPAGWSVVVHGPA GRSAC

 EATYYLVLVNHEGQYSSLWPSFAEVVAGWTVTVQAAGRQDA D G SFRRVLVNVEGQYS LWPAF IVRTPDGWTAVLEE GTH QEC
 D GVY S V L I NE E GQQHSLWPASAAAPA GWAVA Y GPARARAAC
 D G RFHVVVNDEE QYSIWPAD QEIPPAGWRPEGPLGSKE EC $G V V F Q V L V N D E E Q Y S L W P G D K E V P A G W R P E G M R G S R E E C$ DGNFSVLVNDEEQYSLWPAT LAVVPSGWTDAHREDSRQAC




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EQY WWADRDLIPAGWRAEGTEGTREEC T P Y QVV A NDEE QF SI WPVDRAVPPGWHSVGKEGSKA DC ERGTFRRVLVNHEGQHSSLWP DFAPVVPGGWTSQHGPS GREDC DKAAFAVVVNEEEQYSVWWADRPLPAGWTAAGFSGDRDEC $T Y R V V V N D E D Q Y S L W P A D R P V P D G W R P E G F D G T R E Q C$

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1
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D D E EDLTFCVLVNDENQHSL


## E

 - GRFFVLRNDEGQHSL- GVFHVVVNDENQHSLWPAFADIPDGWSSVWGAGSRADA ERREFSVVVNHEGQHSIWPT DRDIPSGWRAEGFSGDKAAC
 E QS SF CVVVVNAEGQYSLWNS DLIPIPSGWRETGMT GNKRA NEGGY LVLMNGEGQYSLWPDVQHVPAGWEVVHQTDSREAC DTRRYAVVLNDEEQHSVWPADRDVPAGWRAEGFTGTRAEC

TQ Q H RVLVNDEDQHALWPSFAEI PAGWRAVYGPA GHAAC $M \square Y \mathrm{DVVV} N D E G Q Y S T W P A D R E L P E G W K P T G F R G G K E E C$
 D DAQY LVLTNAE GQHSSLWPSFAEIPRGGWD\|AGEATSRARA

 ETRFLVVRNDEEQYSIWSADRELPAGWHDTGFAGTRAEC DGRFLVLVNHEDQRSLWPAFAEVPDGWRDELGETDRRRC DATVYNVVVNHEEQYSI WPTYREMP LGGWKDTGKS GSKE EC DERTYRVVVNDEEQYSI WLADRDLPPGWSAEGTTGDRATC $\begin{array}{cc}G T F \\ S G T V & L V \\ L & V \\ L & D \\ N\end{array}$ D DAEYHALVNDEGQYSLWPVVAEIIPEGWSSELRAG RQEC EDETF IVLINHEEQYSLWPHWKAID GGWKAVNIKGDKKT L EAEMFEVVINDQGQYSIWPQGKDMADGWTATGARGERQAC EEPAYRVVRNDEEQYSGWWAGREXPAGWHAEGTEGTREEC DGTLVLVNDEEQYSLWPTVLEVPPGWNI SHEADTRQGC EDGTFLVLRNEQAQHSLWPAFAAVPAGWEVVCEETSRAEA

E Y KVVIN A E E Q H S I WP LDDRENP L G WESVGGVS GS KE H C DNGSFYALI NREEQHSLWPTFKPVPAGWS IAYGERPRQEV E S L S F LVVVNHQDQHSLWPSQLASPAGWRAVFGPA GRGAC EDGTFHVLVNGEGQHSIWPVFADVPAGWTITLEARPRAEA Y DVVVNDE QQYS I WPAGRDVPA GWRAVPAPAPKAEC


 DEMFQVVLNHEEQYSI WA $\square G R E D P L G W R P D G M E G S K E E C$ RGRYVV L A N E E GQY S L WP AR I Q Q P A G WE LVVRDEGS K E E C
 EADYLVLVNAEGRHSLWPVVAAVPAGWSTAFGPDRREAC ENGRFVVLNDE EQYS WLA DRELP LGGWRSEGTR GSRE EC GRGVVNDEDQHTLWPAVSEVPRGWTTAYTENARQAC D GSFLLVL RNDEE QYS L WPAFAAVPEGWSKVLGPVSREES

| D D R V Y NVVV |
| :---: |
|  |  |
|  |  |



DDRTYEVRNHEEQYS WLADDRDVAGWDTIGFQGDKDAC
 D Y F TVVVNDEGQYS WPAELAVPAGWQPAGKS GTREEC E Y QVVVLNDEE QYSI WRTARPLLPA GWHAEGTTGSRRQE E GREFCVVRNGEEQYSIWPS GRELPAGWVEVGTRGPKAEC
 DQGTRVVENDEEQYSLWPAGRDLPAGWHAEGTEGSREEC FF AL VEQYSLWP TFA QVPSGWR VGGGAARD DV D E Q Y LVLVNHENQHSLWPFFARVPAGWAVTFGPDERTAC
 EQNTHLVVLNDEEQYSI WWADRDLPA GWTAEGFAGS QEQC DEAVYRVVLNDEEQYSI WWADRPLPAGWHAEGTEGSREDC EDETF IVLI NQE EQYSI WPEWKAV PA GWQAVVAGQ G DKA HV NGVFYALI NDEEQYSLWPAFKDVPEGWSVVHGAAPRQEV DGTFSVLINAEGQHSLWPTFAAVPDGWTVALRGVPREQA Y Y V V V N H E E Q Y S l WN SK K EIIP G G WV SV GEPMSSK D A C EGTFHVVVNDEGQHSLWPSFAPVPAGWTNVWGPGERGEA
 D DA Y A V V V N D E Q Q Y S I WR A D A E L P P P G W S A E GTT GT R E VC
EKGVYSVVVNTE
DGIVSVLMNGEGQHSIWPAFLDAPSGWTVIVGEESHQDC
E


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UniRef90_K6W6W2
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UniRef90- S5VS01
UniRef90_A0A059KJV6
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UniRef90 D9XF50 UniRef90_Q217L8 UniRef90_Q8GGS3 UniRef90_K0JXK UniRef90_F7NIV9 UniRef90_B5UZX6 UniRef90_UPI0002E29A43 UniRef90_L0M9S5 UniRef90_S5TU54
UniRef90_R1GA47

L E HI G AVVT DMRPLSLRRRME L A HI E TVVWT DMRPLSL R R A L D Y I E A H WT D LiR P R S V A R R L Q F V E Q NWRDIA P A S L K R S M LA HI GEVWTDMRPLSLRRHME L G H I E E V WT D M R P R S L R Q
L D Y I E R T WT DMRPR S L R D WM L D H I D RVWT DLR PA S L R A A I NYI NENWTD I K P K S L DA L E Y V R E V WVVDMRPK S L RLQME L D HI E RVWV DMRPKS L R E A L L D Y i D E T WT DMRP L S L R
L K Y I N S H W DD IK P N S L K
V R Y V E E H WR D L R P A S L I K A L E Y V T A N WT DI R P R S L V A Q

L D Y I N SQWCDMRPNSLLK
I D Y V D QVWT D M R P T S L R QR MD Y I S T H WT DMRPDDSLLRPKAD
 L D Y V E V H WT DLTTPRSARVAM
L R HI E QVWT DLK L L L L R

L A H I K A VWT DMTPAASRRAA
L E Y V E E NWT DMRP TSSLVSAL

L S Y I D T NWTDMRPHRVR Q



I D Y I D T NWT DMRPRA
L N Y V E S H WT D MR P A R L I EA
L D HI E T R WT DMR P L



L R Y V E L N WT DL R PANLRE

L D W I
$V \mathrm{~S}$ Y L
L A A V E R D WT DMR P K S L VT A


L S H I A E V WT DMRPLS L R
L D Ni E LTWADMRPRSL RRRM


L D H I E A E WT D L R P R S V A A R

| $L$ | $E$ | $Y$ | $V$ | $R$ | $T$ | $H$ | $W T$ | $D$ | $L$ | $R$ | $P$ | $R$ | $S$ | $L$ | $I$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $A$ | $A$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $A$ | $H$ | $I$ | $G$ | $T$ | $V$ | $W$ | $T$ | $D$ | $M$ | $R$ | $P$ | $L$ | $S$ | $L$ | $R$ |


I E Y I N L H W ID M R P R S L VA


| $D$ | $E$ | $Y$ | $L$ | $R$ | $R$ | $T$ | $W T$ | $D$ | $M$ | $R$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |




L D HVVRTWLDMRPKSVRTA

| $L$ | $D$ | $H$ | $I$ | $G$ | $R$ | $V$ | $W$ | $T$ | $D$ | $M$ | $R$ | $P$ | $L$ | $S$ | $L$ | $R$ | $R$ | $H$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $A$ | $Y$ | $L$ | $D$ | $R$ | $T$ | $W$ | $T$ | $D$ | $M$ | $R$ | $P$ | $A$ | $S$ | $L$ | $R$ | $Q$ | $S$ |
| $L$ | $L$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

L D N V


LA WI DRTWTDMRPRTLREAM
$\begin{array}{llllllllllll}L & D & H & E & R & N & W T & D & D & P & A & S \\ L & A & R & D \\ A & Y & I & E & Q & V & W T & D & M & P & R & S \\ L\end{array}$
L A Y I E Q VWT DMRPRSLDRE
L A Y V D T A WT D $\square R$ PA
L E HII D A V WT DMRPAS L R R R M







L D H I A R V WT D L R R P R S $V$ V
L D Y I NSRWT DMRPNSLK
L Q Y V E N T WT D LIN P K S


| $L$ | $Q$ | $H$ | $L$ | $E$ | $K$ | $V$ | $W$ | $T$ | $D$ | $M$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $P$ | $L$ | $S$ | $L$ | $R$ | $N$ | $A$ |  |  |  |  |
| $L$ | $D$ | $K$ | $I$ | $S$ | $E$ | $V$ | $W$ | $T$ | $D$ | $M$ | $R$ |



UniRef90 UPIO0035D46F2 UniRef90_UPI0003698532 UniRef90_UPI000377B661
UniRef90_UPI00036F8FA9 UniRef90_UPI00036D92D6 UniRef90_UPI000377B3D9 UniRef90_H0S413 UniRef90_UPI0002DC46B7 UniRef90_UPI00036C0379 UniRef90_E4WHL7 UniRef90_K6VP63 UniRef90_UPI0004648A58 UniRef90_D3P860 UniRef90_C9ZDB9 UniRef90_UPI0003777DF9 UniRef90 J2EI50 UniRef90_Q8CUZ8 UniRef90_UPI000376E52B UniRef90_UPI000416462A UniRef90_D2B722 UniRef90_W0V4C5 UniRef90_UPI00035DB391 UniRef90 U7G9L3 UniRef90_UPI00036A733F UniRef90_K6CDB8 UniRef90_UPI00036FA8A4 UniRef90_C7Q4X6
UniRef90_D6K411
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UniRef90_H2JPF5 UniRef90_LTZKS6 UniRef90_W7J1M7 UniRef90_UPI0003757480 UniRef90_A1TTJ5 UniRef90_Q6WZ99 UniRef90_UPI0002192A75 UniRef90_UPI00040E5B7F UniRef90_G0BC06 UniRef90_F2JWF5 UniRef90_UPI00035C79BD UniRef90_UPI00005100F8
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UniRef90_UPI00047795F6
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UniRef90_A0A010Q3U2 UniRef90_UPI00036ED0ED UniRef90_UPI000378253E UniRef90_R4LLNO UniRef90_B4VZN3
UniRef90-IOL6T0
UniRef90_X0NHB6
UniRef90_UPI0003700E99
UniRef90-I3P626 UniRef90-I3P626 UniRef90_UPI0003766393 UniRef90_U2LYD4 UniRef90_I1D2G3
UniRef90_D2PSL8
Y NVVI NDE
RFTVVRNDE
(
E EYYLVVRND E E

F V V V V NHE
DGNYYVLINDEG
RWLVVI NDEE

| $E F R V V$ | $N$ | $D$ | $E$ | $E$ |
| :--- | :--- | :--- | :--- | :--- |
| $S$ | $R$ |  |  |  |
| $L$ | $V$ | $V$ | $N$ | $D$ |


DTEFTVVIND Q T D A GIVY LV $V$ V DS QFEVVVNDEGQYS IVWPAGKPMAVGWSKAGVCGERCTC
$\begin{array}{ll}R \\ Q \\ V & V N D D E D Q Y S \\ N\end{array}$
D D R RY L V VLNDE
MS H RVVVVNHEE
MTHLVVVNDEEQYSSLWPAGGAVPAGWMAATGRDAARPDC EDGSYHVLVNAEGQYSLWPAY LDDPDGWETRLTNETRRPVC NREY LALVVNDEGQHSLWPGSIDVVPGWAVAHGPAGRQDC
 DDRQYDVVVNDEEQYSIWFVGRDLPPGWSRAGHCGTRDAC DRAFSVLVNAEEQHSLWPGDLPVPSGWRVAHADDTAAAA D GDRYVVVVNHEEQYSVWFADRELPDGWTATGAQGTRQEC NADYLVLVNAE GQHSSWPASA QVPA GWEVTHGPTGRQDC ETRAFRVVRNDEEQYSVWPVGRELPAGWSEAGKRGTKAEC
 THHRVLVVDEGQHALWPSFAAVPAGWEAVFGPADQDAC DSTYKVLMNGEGQYSLWPAF $\quad$ GEVPAGWS IVHEQDSRQAC MTYTVVVNDEEQYSLWPEAKTLPAGWRTTGFSGSREEC EYLVVINDEEQYACVHSEWPVATGWRATGFS GTQEAC
 DGVY QV VNEE QQHSLWPNDLRVPAGWSPVFGPDTRDAC E S M A F VVLI NHEK QY S L WP EV L T I I P S G WE QVVF GP QT R D T C

RWKVVVNDEEQYSIWSAQRETPA GWREDGVVHGTKDEC
E
Q WLVVVNDEE QYSVWWADRSVPEGWRADGVSGPKEEC

 DGSEFTVLVNAE EQYSIWRTGGLELVAGWREVGRRGTKGEC





RHRVVVNHEE TATFRVLVNDL

## E

 GTDIFDVVVN A G E GQF SLWPAGRALPDGWHTAGFSGPRAAC SARF KLANSEKQFSLWPTAIDTPDGWSVALHDRTHAEC KVVVNDE EQYSVVWPVDRDTPDGWHDEGFTGPRADC
 ESLDFFVLINDEN
 G NCQEQHRLWPVFADVTKGWRVVYDEAERAAC DEEYLVLVNHEGQYSLWPHWCAVPGGWTVAYGPDERAAC E WTVVVNDEE QYS I WAVVNRQI PGGWKETGVR GTQEEC D DVQ F RVVVA N E L G Q A H S L W WP E F A D V $T T Y R V V N E L$
 $T Y L V L V N D L H Q H S L W P A R L A P P A$
$R H L V V V N D E D Q Y S T V V A A Y P V P A G W T V A H G A T G Y Q A C$ DRVIYKVVKNHEHQYSILPADWENPDGWWDVGKAGTEAEC

EHRVVVVND E E Q Y A L WPRHKEVPDDGWRDAGCA GSRQQ C
GPFRVV




UniRef90 UPI00035D46F2 UniRef90-UPIO003698532 UniRef90-UPIO003778661 UniRef90 UPIOOO36E8FA9 UniRe990-UP100036D92D UniRef90-HOS413 UniRef90 UPI0002DC46B7 UniRef90-UPIO0036C0379
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