## QUERY

UniRef90_UPIO003346D7E UniRef90_G3WZ54 UniRef90 S7P722 UniRef90_UPIO00442122D UniRef90_UPI0003C25CFC UniRef90_K7FYD2 UniRef90_UPI0003833D09 UniRef90_UPI000441CD8C UniRef90_I3KPI2 UniRef90_W5M5A3 UniRef90_V9KA33 UniRef90_W5MPM3
UniRef90_J1FKJ9
UniRef90_UPI00032AF965 UniRef90_W5UFU9 UniRef90_UPIO0039B8249 UniRef90_K1KTM4 UniRef90_H2SS45 UniRef90_UPIO00350D072 UniRef90-G0J5U6 UniRef90_UPIO00479968C UniRef90_V8P873 UniRef90-G3N5Z2 UniRef90_UPIO0047294AE UniRef90_UPIO0029A1CDF UniRef90_H2LBZ3 UniRef90_Q6NXK7 UniRef90_UPI0003D6F2A3 UniRef90 F9Z9Q9 UniRef90_UPI00034CCBC1 UniRef90_R6SAP4 UniRef90_E7F5R8 UniRef90-M7NYE7 UniRef90_H8KVM4 UniRef90_G2XGW5 UniRef90_UPI0003701C5B UniRef90-LOFVB5 UniRef90_UPI0003F19A88 UniRef90_H3DCP5 UniRef90-I3K2E2 UniRef90_R7NMJ0 UniRef90_V6S9F4 UniRef90-UPIo004134AF3 UniRef90-X5DDY2 UniRef90-W5MB80 UniRef90-L2G5X2 UniRef90_UPIOOO4059F96 UniRef90-C3YZO4
UniRef90-A6H220 UniRef90-AGH220 UniRef90-F5IY28 UniRef90-C5FJE3
UniRef90-L8JJP4 UniRef90-T1DSH3 UniRef90-R5UZT1
UniRef90 R5F1F2 UniRef90-J3P819 UniRef90-K5ZUYO UniRef90_UPIO00407F723 UniRef90-C4JJ62 UniRef90-U2CAC7 UniRef90-G4N4L1 UniRef90-C1H7V3 UniRef90_-Q64XP9 UniRef90-W2Ul65 UniRef90-A0A023BN74 UniRef90-E3QTP4 UniRef90-UPIOOO237C219 UniRet90-E6SUH8 UniRef90-UPIO004689C10 UniRef90-C7ZOD7 UniRef90-W7Y2Q2 UniRef90-U4LNG4 UniRet90-W4UMH8 UniRef90-Q4WPH9 UniRef90-Q5AZ42 UniRef90-UP10003B44C24 UniRef90-D8DWG8 UniRef90-R7D3G2 UniRef90-H6L3UO UniRet90_G3JT97 UniRef90 A8UJWO UniRef90_R5WDY8 UniRef90-R6C5Q0 UniRef90-C9MN71 UniRef90-UPIO004006506 UniRef90-H2ML62 UniRef90-W8VX76 UniRef90-A0M5M4

1 10

20 R N TYTLS DYLKNTFRLLKYYNLRWISDHEYLYREDNNILVV RNTYTLSDYLKNTFRLKYYNLRWHSDHEYLYREDNNLLVVV
R R T

\section*{$R$

$R$

$R$}

## K R Q K K K K K

$\qquad$ $K$
$K$
 RRTYSLADYLKSTFRVKSYS LTWWVSDFEYLYKQENNILLL QKQLTLEDFFDGTFRTKGYGLRSMNDGEHYTVLENNIVKY

## Q K R

K
 Q K E V S S A A S l F K G V F N Q K S R G I N WM K D G Q Y Y S S G V T Q V V K M
 K S R L T V A DL Y K P E F S I H D P EA K WI S D S QVVVYRNRGBVI K F

 QKAVSLETVVSPRFGASARSVSWLSDGRYIEQDDAGLVIVV RPSYTFDDMFNQKFSYKGFSARWDNDEDYLYRDEDGAVLT





 $K$ K EVVS L E E I WS GTFRRQRL Q S L Q S L D N G E E Y V T G S S S I DV Y

 $K L L T Y N D V V K R A \square A P T S D S V D W I S D G Q Y V F Q G S D S L E D Q$ K AL D LK EI NS GKFSPN IVGVVPMPDGEHYTQRNTQQVKY QKIT L E E I WG GAFRTEGMDL HSMNNGQQYSSTRTTSIDDKY
 $K N D E L E D F T K G T F Q P Q S D G L Q P M N D G R Y Y T E D G T K I V V K$
 SAK K R P S T L SVVEWS S D GNY VVT N S G DLV LE



 K QLDLK S IT S GDFAAEY VS IKGSGD YAKISQDGRQQQRY
 K E IUQLE E IUWRNY FS QSAQGFN FMQDGQHYS QDDKKI REF

 K L D L K A I A A G G K F A Q A R Y T G G




## QUERY

UniRef90_UPI0003346D7E
UniRef90-G3WZ54 UniRef90_G3WZ54 UniRef90-S7P722 UniRef90_UPI000442122D UniRef90_UPIO003
UniRef90-K7FYD2 UniRef90-UPI0003833D09 UniRef90_UPI000441CD8O UniRef90-I3KPI2 UniRef90-W5M5A3 UniRef90-V9KA33 UniRef90-W5MPM3
UniRef90-J1FKJ9
UniRef90_UPI00032AF965 UniRef90-W5UFU9 UniRef90-UPIOO039B8249 UniRef90-K1KTM4 UniRef90-H2SS45 UniRef90_UPIO00350D072 UniRef90-G0J5U6 UniRef90_UPI000479968C UniRef90_V8P873 UniRef90-G3N5Z2 UniRef90_UPI00047294AE UniRef90_UPI00029A1CDF UniRef90_H2LBZ3 UniRef90-Q6NXK7 UniRef90_UPI0003D6F2A3 UniRef90-F9Z9Q9 UniRef90_UPIO0034CCBC1 UniRef90-R6SAP4 UniRef90-E7F5R8 UniRef90-M7NYE7 UniRef90-H8KVM4 UniRef90_G2XGW5 UniRef90_UPIO003701C5B UniRef90-LOFVB5 UniRef90_UPI0003F19A88 UniRef90-H3DCP5 UniRef90-I3K2E2 UniRef90-R7NMJO UniRef90-V6S9F4 UniRef90-UPI0004134AF3 UniRef90-X5DDY2
UniRef90-W5MB80 UniRef90-L2G5X2 UniRef90-UPIO004059F96 UniRef90-C3YZ04 UniRef90-A6H220 UniRef90-F5IY28 UniRef90-C5FJE3 UniRef90_L8JJP4 UniRef90_T1DSH3
UniRef90_R5UZT1 UniRef90-R5F1F2 UniRef90-J3P819 UniRef90_K5ZUY0 UniRef90_UPI000407F723 UniRef90_C4JJ62 UniRef90_U2CAC7 UniRef90_G4N4L1 UniRef90-C1H7V3 UniRef90-Q64XP9 UniRef90_W2UI65 UniRef90-A0A023BN74 UniRef90_E3QTP4 UniRef90_UPIO00237C219 UniRef90_E6SUH8 UniRef90_UPI0004689C10 UniRef90_C7Z0D7 UniRef90-W7Y2Q2 UniRef90-U4LNG4 UniRef90-W4UMH8 UniRef90_Q4WPH9 UniRef90_Q5AZ42
UniRef90_UPIO003 UniRef90_UPIO003B44C24 UniRef90-R7D3G2 UniRef90-H6L3U0 UniRef90_G3JT97 UniRef90_A8UJWO UniRef90_R5WDY8 UniRef90-R6C5Q0 UniRef90_C9MN71 UniRef90_UPIOO04006506 UniRef90-H2ML62 UniRef90-W8VX76 UniRef90-A0M5M4
$\qquad$

89C10

NAEYGNSSVFF ${ }^{50}$ NAEYGNSSVLENSTFDEFGHSTNDYS TSPDGQFTLLEYN
 NADHGNSSTFLENSTFDQFGHSLS
 NVETESSSNTLTNDTMKKVNA

 <br> \section*{-} <br> \section*{-} Whe the HIVNGNEQVLEDGATDGESPFRDQGYQFSADENKGLLKTD NVATGEEEAVLDDGTAABLGDNFSSYSFNPDESKALIASE NI ETGESYTILSNSTMKSVNAS NYGLSPDRQFAYLAYD NVATGEESEVLIDG RELGLNFSNYAFNPEESMALLTSSE SYKTGQPTVFDVSTARDCNISKFEGYDMSPDENRLLVYTS NVESGQSTAILTNSTLKKVNA TNYAMSADQKFILLESN


 NAEHGNSSI FLENSTFESFGY HSVSPDRLFVLLEYN SYKTGLPTLLDLKTLEDSPDSRDDDYTFNADESRILI CTN


,

N D NVDTERRRDVIVPN QWFKRCRA D FVVLND T HILLSNS $\quad$ LIVVSF KYV SFKTGKETIFDVNTARDCTMKHFDKYSLMSDNLKYALFAY DFATLKKVNLLDTKNFAALADGUDSYTFDASEKKILIACN
 DIISGDNKTFVSA DKFPAGVHEYWI RPDLKKVLFATN DVTTGQQVEVIFGKDNHPK NVRGNMTTVLMDNTTFTEY DAFDYRVSPDMQYVLLSYN
DFATVNKVSTLINSKDFSDLQGDDSYTFSSDEKKILIANN NLETMASSLYLSNSTFAQV DATDYVVSADRKFVLLESN SYKTGTDTIFNVKKARDCTFDSFQGFLISPDEKRLVVYND DVTTGEKVETVVDGSSDSPSTKFNSYSFSDDEMKVLWMTE保 SYKTGQAVTLLDLETINDKVKYDSDYQFNADESRLLISTN

## 

 SYRTGSSETDFNARTARESTAFDDFDGYDIGSSTGKHVLFAAD SYETGRKTKTILSSADLDEDKSFSNFKFSEKEDKILLSTE NUVTNSNDTLVGA DKVPDNAYTYFDKPDLDAVMWATNの
N H I
 SFKTGKEVLIFDATNARECPFKTFDSYSFSPDGGKLLI ATE


 SIIVTN R S Q TIVVPA $\quad$ E KIIPA DA Y S Y WI S P DLL S A V L WA T N

 $D I V T G N S T V F L Q K \quad G Q \square P S D M S S Y W \square S A D D R T V L E A V N$ D Y K T L E K V K TLVVS A D $\square$ A E $\square Q G F F N Y S F S D D E S K V I L T T N$







QUERY
UniRef90_UPI0003346D7E
UniRef90_G3WZ54
UniRef90_S7P722
UniRef90_UPI000442122D
UniRef90_UPI0003C25CFC
UniRef90_K7FYD2
UniRef90_UPI0003833D09
UniRef90_UPI000441CD8C
UniRef90_I3KPI2
UniRef90_W5M5A3
UniRef90_V9KA33
UniRef90_W5MPM3
UniRef90_J1FKJ9
UniRef90_UPI00032AF965
UniRef90_W5UFU9
UniRef90_UPI00039B8249
UniRef90_K1KTM4
UniRef90_H2SS45
UniRef90_UPI000350D072
UniRef90_G0J5U6
UniRef90_UPI000479968C
UniRef90_V8P873
UniRef90_G3N5Z2
UniRef90_UPI00047294AE
UniRef90_UPI00029A1CDF
UniRef90_H2LBZ3
UniRef90_Q6NXK7
UniRef90_UPI0003D6F2A3
UniRef90_F9Z9Q9
UniRef90_UPI00034CCBC1
UniRef90_R6SAP4
UniRef90_E7F5R8

VGHK 130
150
160

M G H K L A Y V W W N N I Y V K K N E P Y E Q A QK I T S D G K E D V I Y N Gi T VGHKLAYVWNNDI YI KNEPDLDPSLRI TYYDGKESVI FNGIT EGHKLAYVWDNDIVYVKNDPYAPSQRVTHDGREDAVSNGIT



EGNKLAFVWNNNVY DKTSPNSPSQQVTFNGKENKILNGI P
 TG N K L A Y V W W K N N V Y D AKRVAFARE GNMFFVVDLSNMMEKQUTNTGKFNSVIDNGA
 A GDRAAFVRDNNLFWVDLNTGEETQITNDGEFNKIINGAA
A Q G Q QL $\square \mathrm{Y}$ I F ENN I



 D S Y K
 D G N QI A A V V R N N N L Y V K L L L F G N S E S Q V T K D G E Y N H V L N G I P

 A GDAI AFVRGNNLYL NKGGDVTQVTNDGGPDLFH GVP DGRKVAFVRDNNLFTVDLATMTEKQLTTDGKRNEIIDNGGA D N T K V A F V K D N D L Y Y I T L E D N K V H Q V T H D GE WN K I I

$$
1
$$

R
,

## V

## 

## 

 NGLRIAFMRDNNLFIYDTRFKTERQITFDGKYNHIINGAP NGRMVAFVRDNNIFIKKLDYGTEVAVTRDGERNKIING円P AGDALAFVRGNNLYL NKGGKISQITSDGGPDKFH GVP DGRMCAYVVDNNI WI RKFDYDTEVQVTKDGELDKILNGIT DASKVAYVLNNNLYGLDGNKEATVQVTQDGEMNKIVNGVT
 DGNLVAFVRDNN:FYKLLYGNSESQVTEDGKLNSVVNGIV
 NSQMVAYVKDNDIYLKKLRFGTTSAVTDDGEKNRIINGIP DGNMVAFVRDNNIFVKLLYGNSESQITEDGKRNALLNGUP


 SGDSIAAFVRGNNVLWTWSDGTVTALTKDGGPDMFH GVVP QGQQLDFIFESNTYYRATLDERSIRLVSTGKDGVIFNGLT DSKHIAYVYQNNIFVSDLTSASKIQVTNDGKFNDIINGLP DGNNIAFVRDNNLFVKLLFDNSESQVTKDGKFNEVLNGGP TGDS|AFIRGNDLYMRDGNGTVHRUTTDGGPDQFMGVP QKQQLVY GEENNIYYQRDRQSNSLRLTSSGREGVVENGLA DGERVAFVLRNNIYVKEDATGRETAVTTDGVPNHIVNGMP DGTKIAFVHKNNIYI TDGDKETQVTTDGEFNKVINGLP
 DGKKVAYVLENNIYYKNLETGATVQVTTDGVINKLINGVT DNSKI AYVFNNNIIYVYDVVENSEKQITKDGKINSIINGVT

## QUERY <br> UniRef90_UPI0003346D7E UniRef90_G3WZ54 UniRef90_S7P722

 UniRef90_UPI000442122D UniRef90_UPI0003C25CFC UniRef90_K7FYD2 UniRef90_UPI0003833D09 UniRef90_UPI000441CD8C UniRef90_I3KPI2 UniRef90_W5M5A3 UniRef90-V9KA33 UniRef90_W5MPM3 UniRef90_J1FKJ9 UniRef90_UPI00032AF965 UniRef90_W5UFU9 UniRef90_UPIO0039B8249 UniRef90_K1KTM4 UniRef90_H2SS45 UniRef90_UPIO00350D072 UniRef90_G0J5U6 UniRef90_UPI000479968C UniRef90_V8P873 UniRef90_G3N5Z2 UniRef90_UPIO0047294AE UniRef90_UPI00029A1CDF UniRef90_H2LBZ3 UniRef90_Q6NXK7 UniRef90_UPI0003D6F2A3 UniRef90-F9Z9Q9 UniRef90_UPIO0034CCBC1 UniRef90_R6SAP4 UniRef90_E7F5R8 UniRef90-M7NYE7 UniRef90_H8KVM4 UniRef90_G2XGW5 UniRef90_UPI0003701C5B UniRef90_LOFVB5 UniRef90_UPI0003F19A88 UniRef90_H3DCP5 UniRef90_I3K2E2UniRef90_R7NMJ0 UniRef90_V6S9F4 UniRef90_UPI0004134AF3 UniRef90-X5DDY2 UniRef90-W5MB80 UniRef90_L2G5X2 UniRef90-UPI0004059F96 UniRef90_C3YZ04 UniRef90-A6H220 UniRef90_W5USQ3 UniRef90-F5IY28
UniRef90-C5FJE3
UniRef90_L8JJP4 UniRef90_T1DSH3
UniRef90_R5UZT1 UniRef90-R5F1F2 UniRef90_J3P8I9 UniRef90_K5ZUY0 UniRef90-UPI000407F723 UniRef90-C4JJ62 UniRef90_U2CAC7 UniRef90_G4N4L1 UniRef90_C1H7V3 UniRef90_Q64XP9 UniRef90_W2UI65 UniRef90_A0A023BN74 UniRef90_E3QTP4 UniRef90_UPI000237C219 UniRef90_E6SUH8 UniRef90_UPIO004689C10 UniRef90_C7Z0D7 UniRef90-W7Y2Q2 UniRef90_U4LNG4 UniRef90_W4UMH8 UniRef90_Q4WPH9 UniRef90_Q5AZ42
UniRef90 UPI0003 UniRef90-D8DWG8 UniRef90-R7D3G2 UniRef90_H6L3U0 UniRef90_G3JT97 UniRef90-A8UJW0 UniRef90_-R5WDY8
UniRef90_R5WD UniRef90_R6C5Q0 UniRef90_C9MN71 UniRef90_UPI0004006506 UniRef90_H2ML62 UniRef90-W8VX76 UniRef90_A0M5M4
UniRef90 D5BFQ8

D D



##  <br> \author{  

}170
180
190
200
D WVYEEEVFSAYSALWWSPNGTFLAYAQFNDTEVPLIEYS





 $\begin{array}{llllll}\text { D WV } \\ \text { D WL } & \text { Y E E E F S F A Q G F H W S P D G S K }\end{array}$

## 

D $\begin{array}{ll}\text { D WA Y E E } \\ D & W V Y \\ D & W \\ D & E\end{array}$ EFGFAKA WF WS

$E F S M S K A F E W S$
$E I H H T H V A H W W S$



|  |  |
| :---: | :---: |
| QUERY UniRef9＿UPIooo3346D7E | TNATS ${ }_{\text {GPA }}$ |
| UniRef90－G3WZ54 | NNDSSKQLLAPASILASDHYLCDVTWVNDKRISLQWLR |
| UniRef90－S7F | DPVQI VAPASVLDGDHYLCDVT WATKERISLQWLR |
| UniRet90－UP |  |
| UniRe |  |
| UniRef90－UPIOOO3833D09 | P IVNPAEUPPPAE\｜I S GDHYLS GVTWVTDERICLQWLR |
| UniRef90－UP1000441CD8C | EMTPPDDPRMREYY T MVK WAT STKI AVNWL NRA |
|  | VQDSFGSVEHYLSTVT WVT DERLAVQW |
| UniRef90 W5M5A3 UniR 90 V9KA33 | V＇QELKPPDSFKAREYYVVMMKWISSTKTAVRWL |
| UniRef90＿W5M | AEVIVPDPMRSSDHYLSTLTWVTDNRIAVQWLFRA |
| UniRet90－J1FK． |  |
| UniRef90－UP100032AF965 | APPHTQLTTPPPSNPSEQEYYVTMVKWATSTKVAVTWLNRA |
| UniRef90 W5UFU9楊 |  |
| UniRef90－K1KTM4 | HVNAGEE |
| UniRet90－H2SS | K LREHYVTMVKWTSKTKTSVRWLNRA |
| UPIOOO350D072 | TVDTGA TVVTDDRVCVQWLKRV |
| UniRef90－UPIooou79968C | DIKFPA |
| UniRef90－V8P8 | PKEVLAPPVIASSDHYVTW TVWVTDDR CVQWLKRI |
| UniRef90－G3N5 | LHTDEMRRPDDPRMGEYYVTMVRWATTTKLAINWLNRA |
| UniRef90－UPI | DVDLGTDTDQYPRRRWIP |
|  | TI DVGEDDDFYVPRLRWS |
| UniRef90＿H2LE | VTKTAEVLAPDPF KTVDHYLATVT WAT D NCLAVQWLKRV |
| UniRee90－Q6NXK7 | OLPAP |
| UniRef90－F9Z909 | MDTGEEDDTYMPRIRWTQ DCKKLAITRLNRH |
| UniRef90－UPIO0034CCBC1 | TMDIGEETDIYIPRIYWT NDDDLLSIIRMNRL |
| UniRef90＿R6SAP4 |  |
| UniRef90 E7F5F | KPEDPR1 RKDYY |
| UniRef90－M7NYE7 UniRef90 H8KVM4 | QVDVGAEKDQYORMKWTK NSNVLSVERMNRH |
| UniRef90－G2XGW5 |  |
| UniRef90－UPIOOO3 |  |
| UniRef90＿LOF |  |
| UniRet90＿UPIOC |  |
|  |  |
| UniRet90－13K2 | S ${ }^{\text {d }}$ |
| UniRef90－V6S9F4 | KiNLDKYNDFY |
| UniRef90－UP10004134AF3 | KVDLG |
| UniRef90－X5DDY2 | K |
| 5M |  |
| UniRef90＿L2G5 | D AFPADDLVVGELKWVTKNHTSFVYRAFD |
| UniRef90－UPIOOO4059F96 | UDLGNETDUYDPRUNWTTQQ |
| UniRef90－A6H220 | VDLGAP AGN |
| UniRef90 W5USQ3 | S EVVVPKSLGAGDHY乌SSVTWVTDERIDVQWL |
| UniRef90－F5IY28 | KMNDPESTEY $\mathrm{P}^{\text {P }}$ R |
| UniRet90＿C5F |  |
|  | VELSKEKEFY ARIKQTP |
| UniRef90－T1DSH3 | TVQLPNMADMYPLQFTY K K E ELAVVTLNRQ |
| UniRef90－R5UZT |  |
| UniRef90－J3P819 | P TAVDAFPAEDL I GEVAWLTGKHA SVLYRAYNRV |
| UniRef90－K5ZUY0 |  |
| UniRef90＿UP100040 | KYDIAKETSDMNEDA\｜GDFY |
|  | TVA DA |
| UniRef90 U2CAC7 | IRFTQ |
| UniRet90－G4N4L | DLITGEVAWVTENH SLCTVVFRAFNRV |
| UniRef90 O64XP9 |  |
| UniRef90－W2Ul65 | NVDLG |
| UniRef90－A0A023 | QIKLG DYKDFYIPRIKWTANPDILSVQV |
| UniRef90－E3OTP | PVALDA FPANDLVVGEVKWLTADHGSVVYRA |
| UniRef90－UPIOOO237C219 | TMD G G |
| UniRef90－UPIOOO4689C10 | QYQVPLDADGYIPRVKTAE GASDGIII YTMNRH |
| UniRet90－C7ZOD7 | PV ${ }^{\text {V }}$ |
| UniRef90＿W7Y2Q2 | D GR |
| UniRet90－U4LNG4 | HSSVLFRAFNRV |
| UniRef90 W4U | VP DA |
| UniRef90－Q5AZ42 | TIPIDVV FDPSELIVGEVAWVTDTHTELAVKAFNRV |
| UniRef9－UP10003B4 |  |
| UniRef90 D8D |  |
| UniRef90＿R7D3 | KDGYVPR】K |
| UniRef90＿H6L3U0 |  |
| UniRef90＿G3JT97 | DETII I GEVA WVT K TH |
| UniRef90－A8UJW0 | TLKVDKAYNDFYUPRIDETK |
| UniRef90 R5WDY8 | HVDVGPE |
| UniRef90－R6C5Q0 | ALDVPVDSDGYYPRVK TSPDANSLIVYTMN |
| UniRef90－C9MN71 |  |
| UniRef90＿CP10004006506 | AI |
| Un |  |
| A0M5M4 | EI |
| niRef90－D5BFQ8 | EI DLG |



ouery
UniRef90_UPI0003346D7E
UniRef90_G3WZ54 UniRef90_S7P722 UniRef90_UPI000442122D UniRef90 UPI0003C25CFC
UniRef90 K7FYD2 UniRef90_UPI0003833D09 UniRef90_UPI000441CD8C UniRef90_I3KPI2 UniRef90_W5M5A3 UniRef90 V9KA33

\section*{

\section*{

##  <br> <br>  

} UniRef90_W5MPM3UniRef90_J1FKJ9
UniRef90_UPI00032AF965 UniRef90_W5UFU9 UniRef90_-UPIO0039B8249 UniRef90_K1KTM4 UniRef90_H2SS45 UniRef90_UPIO00350D072 UniRef90_G0J5U6 UniRef90_UPIO00479968C UniRef90_V8P873 UniRef90-G3N5Z2 UniRef90_UPIO0047294AE UniRef90_UPI00029A1CDF UniRef90_H2LBZ3 UniRef90_Q6NXK7 UniRef90_UPI0003D6F2A3 UniRef90_F9Z9Q9 UniRef90_UPI00034CCBC1 UniRef90_R6SAP4 UniRef90_E7F5R8 UniRef90-M7NYE7 UniRef90_H8KVM4 UniRef90_G2XGW5 UniRef90_UPIO003701C5B UniRef90_LOFVB5 UniRef90_UPI0003F19A88 UniRef90_H3DCP5 UniRef90_I3K2E2 UniRef90_R7NMJ0 UniRef90_V6S9F4 UniRef90_UPI0004134AF3 UniRef90 X5DDY2
UniRef90 W5MB80 UniRef90_L2G5X2 UniRef90-UPI0004059F96 UniRef90_C3YZ04 UniRef90_A6H220 UniRef90_W5USQ3 UniRef90_F5IY28
UniRef90_C5FJE3
UniRef90-L8JJP4 UniRef90_T1DSH3 UniRef90_R5UZT1
UniRef90 R5F1F2 UniRef90_R5F1F2
UniRef90_J3P8I9 UniRef90_K5ZUY0 UniRef90_UPI000407F723 UniRef90_C4JJ62 UniRef90_U2CAC7 UniRef90_G4N4L1 UniRef90-C1H7V3 UniRef90_Q64XP9 UniRef90_W2Ul65 UniRef90_A0A023BN74 UniRef90_E3QTP4 UniRef90_UPI000237C219 UniRef90_E6SUH8 UniRef90_UPIO004689C10 UniRef90_C7Z0D7 UniRef90_W7Y2Q2 UniRef90-U4LNG4
UniRef90 W4UMH8 UniRef90-W4UMH8 UniRef90_Q5AZ42 UniRef90_UPIO003B44C24 UniRef90_D8DWG8 UniRef90_R7D3G2 UniRef90_H6L3U0 UniRef90_G3JT97 UniRef90_A8UJW0 UniRef90_R5WDY8 UniRef90_R6C5Q0 UniRef90_C9MN71 UniRef90_UPIO004006506 UniRef90_H2ML62 UniRef90-W8VX76 UniRef90_A0M5M4
UniRef90_D5BFQ8

##  <br> en

370
380
390
400

G
G
G

 G N W E V S R L V G IDDE K N K K V Y Y I S T E A S P L E R N L Y VI N M D GK G N W E V T K $\quad$ I V A Y E E T T D D N L F F F


 G D Y D V T K F F Y G Y D P D R K L F Y Y Y Q A A A E S P
 GNWEVI R I L A Y D E T T Q K ITY F L S T E S S P Q G R Q L Y S A S T E G L GA WEVVI S IVEALTTS DY LYY Y IS N QYK EMPGGR N L Y GNFDDIIDDFY GY D P V R K LF Y Y S S Y E E S P LIE K Y I Y S I N E K GIL
 G


## \section*{}


GK Y E V K E F L GYDAT DGSFYYTANEESPMARAVYK TADKKGK







GA WD $V$ V $\operatorname{M} E \quad Y \quad Y$ G Y D A K K K M I
 GE WEVVTN IL L S ID K P R Q L V Y F L S T K H H S T E R H L Y S V S W
GE WEVTSIVSIDQERELVYYLSTQHHSTERHLYSVSY
GNWDVTS GEFEVTSF GEWDVTDFYGVDEKNERLYFQAAAQKSTEREVYWVSAKGKK


 GNYDVTA I YGYDEKTGNTYFQAAARKPMQREVYVVNKSGK GA WEVTNYYGYDSKSGRDYYQSTENGSDNRDVYSIVNNGK


ouear
UniRef90_UPIO003346D7E
UniRef90_G3WZ54
UniRef90-S7P722 UniRef90 UPIOOO442122D D UniRef90_UP10003C25CFC
UniRef90-K7FYD2 UniRef90_UPIO003833D09 UniRef90-UPI000441CD8C UniRef90-13KP12 UniRef90-W5M5A3 UniRef90-V9KA33 UniRef90-W5MPM3
UniRef90-J1FKJ9
UniRef90_UPIo0032AF965
UniRef90-W5UFU9
UniRef90_UPIO0039B8249
UniRef90-K1KTM4
UniRef90-H2SS45
UniRef90-UPIOOO350D072
UniRef90-G0J5U6
UniRef90-UPI000479968C
UniRef90-V8P873
UniRef90-G3N5Z2
UniRef90-UPIO0047294AE
UniRef90-UPIO0029A1CDF
UniRef90-H2LBZ3
UniRef90-Q6NXK7

UniRef90-UPI0003D6F2A3 UniRef90-F9Z9Q9
UniRef90-UPIO0034CCBC1
UniRet90-R6SAP4
UniRef90-E7F5R8
UniRef90-M7NYE7
UniRef90-H8KVM4 4
UniRef90-G2XGW5
UniRet90 UPIIOOO3701C5B
UniRef90_LOFVB5
UniRef90 UPIOOO3
UniRef90_UPIO003F19A88
UniRef90_H3DCP5
UniRet90_R7NMJO
UniRef90-V6S9F4
UniRef90_UPIO004134AF3
UniRef90-X5DDY2
UniRef90-W5MB80
UniRef90-UPIO004059F96
UniRef90-C3YZ04
UniRef90-A6H220
UniRet90_W5USQ3
UniRef90-F5IY28
UniRef90-C5FJE3
UniRef90-L8JJP4
UniRef90-T1DSH3
UniRef90-R5UZT1
UniRef90 R5F1F2
UniRef90-J3P819
UniRef90-K5ZUYO
UniRef90-UPIO00407F723
UniRef90-C4JJ62
UniRef90_U2CAC7
UniRef90_G4N4L1
UniRef90 C1H7V3
UniRef90-Q64XP9
UniRef90-W2Ul65 UniRef90-A0A023BN74 UniRef90-E3QTP4 UniRe990 UPIOOO237C219 UniRef90 E6SUUH8 UniRef90_UPIO004689C10 UniRef90_C7ZOD7 UniRef90-W7Y2Q2 UniRef90-U4LNG44
UniRef90 W4UMH8 UniRef90-Q4WPH9 UniRef90-O5AZ42 UniRef90-UPIO003B44C24 UniRef90-D8DWG8 UniRet90-R7D3G2 UniRef90-H6L3U0 UniRef90-A8UJW0 UniRef90-W5M5I1
UniRef90 R5WDY UniRef90-R6C5Q0 UniRet90_C9MN71 UniRef90_UPIOOO4006506 UniRet90-H2ML62 UniRef90_W8VX76 UniRef90_AOM5M4
UniRef9O_D5BFQ8




UniRef90 UPIO0041DF04E UniRef90-J9GID4 UniRef90-A2TZSO UniRef90-UPIO00440B502 UniRef90-UPI0003337C08 UniRef90-UPIO0040FD03C UniRef90-G2PKU8 UniRef90-Q16RL5 UniRef90-U2NNA1 UniRef90-UPIO00413C4E6 UniRef90-UPIO003B365A9 UniRef90-R5CG79 UniRef90-G3P9X7 UniRef90_UPIO0040D165B UniRef90-E6X4E5 UniRef90-H1Q311 UniRef90_C3JCZ5

UniRef90 O 6 PG 25 UniRee90 ${ }^{-}$UPI00036C7FD7 UniRef90-E9FZG6 UniRef90-G5GA54 UniRef90-R5FLY1 UniRet90-D6WJ57 UniRef90-W1OLF8 UniRef90-E4TNQ6 UniRef90_UPI00041A11E9 UniRef90-H2SXB4 UniRef90-H2UNZ3 UniRef90-M2RLM4 UniRef90 $\mathrm{Z4X1S5}$ | UniRef90-13YJR8 |
| :--- |
| UniRefol |
| $10 K 3, J 6$ | UniRef90-10K336 UniRef90-T1DG95

UniRet90_F6GDA9 UniRef90-6GGDA9 UniRef90-V8C347 UniRet90_M5G6P7
 UniRef90-R7JIM1
UniRef90
G2Q56 UniRef90-K2SOL3
UniRef90 G5AKB6 UniRef90-G5AKBE
UniRef90 14 AH32 UniRef90-R7SPE6 UniRef90-R5Q3M4 UniRef90-HoZN40 UniRef90-UPIO0047914F3 UniRef90-UPIo003735FFF UniRef90_UPIO003800974 UniRef90-A9DK52 UniRef90-UPIO0029DBA7C UniRef90-D1VX34 UniRef90-W7HP94 UniRef90 ${ }^{-12 G T M 3}$ UniRef90-UPIO0016C4A2E UniRef90_V5FYP0 UniRef90-A0A03117U3 UniRef90_R7HKY9 UniRef90-A1ZWZO UniRef90-UPIo003135D79 UniRef90-C4JHY5 UniRef90_B9WHL2 UniRef90-B6HFS8 UniRef90-A0A058ZAC3 UniRef90-G1NIG1 UniRef90-K1L125 UniReffo-R7AFU4 UniRef90_A3XL92 UniRef90 UPIO00248EB99 UniRef90-UPIO00258E898 UniRef90-W6MK00 UniRef90-UPI0002557B1E UniRef90-UPIO00440EA62 UniRef90-U5EWK1 UniRef90-H1GSM8 UniRef90_L8IGB9 UniRef90-R5YZY2 UniRef90 W4XLFO UniRef90-Q0UVK7 UniRef90-A3WLP9 UniRet90-Q2HF90 UniRef90_R6W1K0 UniRef90-A6L715
UniRef90-KIIXE7 UniRef90-UPIOOO1758241 UniRef90-D5H6DO UniRet90-C5P334 UniRef90_С5DM95 UniRef90-Q29R16

KKYゆTNQT TF TGK QQKISLEDI WSGTFRTKLQALKNTNQYTVLNYDRNSLR
 KKKITLEEIWGGEFRTEHMDVRSMDNGTQYTPRSSSLDKY
 QQKITLEE: WGGAFRTQLQSMKNTNQYTILNFDRNSIDRYY RSHLTMEDLERAEFKVHNPCAAWLNENEVLRTREGQVLSF

QQEGFTLEEVLSGKFYAESFNGTWIDSDSEFGYRTQYGUNVY QERISLKALANGEFSAKTVSURGTDQYARDSADGKQIVQY KGPGTLAATRNGTFTPERKSLQWLDSGEYIVIDGADYVLK KPLSTKDTTGNVFSAKT TSLKGTSEFAOTSSDEKKUVKF RSPLTLDDLFDRNFQVHDPGAKWDNDEEVIFRSFDGDI DK RSHLTMEDLESPEFKVHDPCVSWLSESEVLCTREGHVLSF RTMTDEEVNSGKFQPAGRGMRSMSDGLHYTTQHKALLRY VRGIRSMADGEHYTTMEGSNI IR - 1 Thedr K Ei
 LNGANSN RRP\TMDHVFNGTFS KATTLDQVLNSFWRP RTQG RLLTFNETVNARLSPSSISSLEWHADGLLLERGEGKDFLV RRTYSLTDYLKNTFRLKSYSLRWUADGQYLYADDGSLLLA KTKVSVTDIYSNRYSKNLQGVDWTNNGGFYTRMDGNIVRY QHLTMDHI FNGTFSAHRKDI HWVPDGVYAVVEGSSI SLH
 QKQUSVTNUYTGEFQTQGMDVRSMNNGKQYYRGUVSVDTY QQWTREGTYGGYRTSGYGVNSLNDGEYTULTRDGLVKR K ThKD TADGAFAAERTG RP RPGTDQYSKDGQR VQY KKLDLDMVQGGQFRANHHSIKWIKDGLMLEERGSDLVVK RSVNWI EGGKF SF TDGPGI IJKT KPVTVDRLFSDDFRGDVPSMKWLDGGAYAHKGASDUARV PLTVERUFGSNPDPTDTGGEWTADGEGLRVAGGVRYRNA KKQVTVDRLFTSDFQVDYFSPRWIEGGKAYBADGKNVVC RLTLDRIFSEDFRPEGRPFRWI DAKSYAFKGAGELFQV KKVDLDGVLTGF


QNALTLEDTENGTYDQKRFGTRWMKDAEGYSS DEDD\|VRY TLEEVVNGGLVITKGEVNWLSDGSKYSKKEKNIVSY QDTLDRIYSSEFRGESRSISWIHDGDAFVTGQDQLIKY QKQTLEEVWGGKFRATLEEVHHLNNGKEYSTKATSUEVH KDP STENAARNGTFSPVSRTMQWUQSNDSLTNDSGTFVVS $R$
R
SMEVDDLFDGKYRVKTVGПRPSADGVHYTPDRTCIVRY RYTFEDIFDPQYQPSYFDAVWLTEDEYVLRNTNNVVAV K LTYENIKNETFKPVFHSLQWISNGLYVATDNDSYVIK KKLTLDNVLGGQFYPQSQSVSWLAGPEKGVSGKDYVVVE KAVTLDQVMGSFWRPEVRSTQWI ADGLLLERDKDYLVVE MDIKTIASGYFSAKIQGIDPIIPGTDQYARTSDDIIGN QRПPTLEEVYGGLIKTEGSNVNWMKDGERYSKIEKNVTAY KITIKSWTNGEFSAEMQGMNPIAGTDQISSDGKQVMDC TLALEDLLQGKVNPNSFNATWVSDKDLLYTDSGDLILY KKLDLDGVLSGNWSPKSHDISWFPDRNKAYLRVEDIRSR KVSFENVRNFTFNPTLQTVQWIDGGGLFLSVENGSYVIK

UniRef90_UPIO0041DF04E UniRef90-JgGID4
UniRef90 A2TZSO UniRef90-A2TZSO
UniRef90 UPIO00440B502 UniRef90-UPIOOO3337C08 UniRef90-UPIO0040FD03C UniRef90-G2PKU8
UniRef90-Q16RL5
UniRef90_U2NNA1
UniRef90-UPIO00413C4E6 UniRef90_UPIO003B365A9 UniRef90-R5CG79 UniRef90-G3P9X7 UniRef90_UPI00040D165B UniRet90-E6X4E5 UniRef90-H1Q311 UniRef90_C3JCZ5
UniRef90 O6PG25 UniRef90-UP100036C7FD7 UniRef90-E9FZG6 UniRef90-G5GA54
UniRef90-R5FLY1 UniRet90-D6WJ57 UniRef90 ${ }^{-}$W1QLF8
UniRef90 E4TNO6 UniRef90_UPIo0041A11E9 UniRef90-H2SXB4 UniRef90-H2UNZ3 UniRef90-M2RLM4 UniRef90_Z4X1S5 UniRef90_13YJR8
UniRef90-IOK3J6 UniRef90-T1DG95 UniRef90-F6GDA9 UniReffo-OTPSF9 UniRef90-V8C347
UniRef90 M5G6P7 UniRef90-L8JYJ9 UniRef90-R7JIM1 UniRef90_G2Q5V6 UniRef90-K2SOL3
UniRef90-G5AKB6 UniRef90_14AH32 UniRef90-R7SPE6 6 UniRef90-R5Q3M4
UniRet90 HOZN40 UniRef90-HOZN40
UniRef90-UPIOOO47914F3 UniRet90-UPIO003735FFF UniRef90_UPIO003800974 UniRef90-A9DK52
UniRef90-V5FYPO
UniRef90-A0Ао3117U3
UniRef90_R7HKY9
UniRef90-A1ZWZO
UniRef90-UPIO003135D79
UniRef90-C4JHY5
UniRef90-B9WHL2
UniRef90-B6HFS8
UniRef90-A0A058ZAC3
UniRef90-G1NIG1
UniRef90-K1L125
UniRef90-R7AFU4
UniRef90_A3XL92
UniRef90_UPIO00248EB99
UniRef90-UPIOO0258E898
UniRef90-W6MK00
UniRef90-UPIO002557B1E
UniRef90-UP10000440EA62
UniRef90_U5EWK1
UniRef90-H1GSM8
UniRef90-L8IGB9
UniRef90-R5YZY2
UniRef90-W4XLFO
UniRef90-QOUVK7
UniRef90-A3WLP9
UniRef90-Q2HF90
UniRef90_R6W1K0
UniRef90-A6L715
UniRef90 K7IXE7
UniRef90-D31AG7
UniRef90-UPIOOO1758241
UniRef90-D5
UniRef90-D5H6DO
UniRef90-C5P334
UniRef90_C5DM95
UniRef90_O29R16
UniRef90_UPI0002886A20

DFATLKKTTLFNTKDFEATSGTVSSYTFDTTEKMMLLIAAN
 NVETNMSTVLIEGKKDESLRA DRYEISPDKEYALESYN DFSTLKKVNTLIDTKNHAELTSDDSYTFNATETQLLIADN
 SFKTGKNVLFDASHTLGESHSRVEGYDPSPDGSRLKVQTQ DFATLKKVDTFIDTKNFPNFPSDDSYTFNKKEDKLLA AN STKSNKQ STLVANSSLGEVKKVENF GVSADKTSVLL QTE DLTTGQAVE TWFEGSDFNIQVSDYQLGSDEAQLLIATN DYASQAKVGTVVNSAKLDNNPYFTSYEFTADESKVLLATE
 NVDNVKTSEIVSNTARESKSNSSFYTLSEDGRFALLXYN DVKTSTATVMVKPEAVAQLGA VGYYKFSHDRKYVLYSFD SFKTGKQTLFDVNNTQGETLKKLNGYLMSPDGQRMLIATN NVKGGNASVFFNKSVVDHFPY LYSTLVSPDHRYVLIRYN SLTDKRERILFSGTVVDYKDSTIEDIVFSDNDKHALVICD


## 

 VNTRNQTELLMKNTTFATFERKASKFAVSDDGQFILIQAN SFATGKDTLLVDVKNERGFRLNWADWKLSSDMRYM LIKSD HAAAGPGERMLDSSABANDTDTDYSFSPDERQULASG NPATQQEETVFDAAQLKFPGTDYESFQWSKDSKNLFFQTN DPETNETKKLLGAESEELLQGFKFDLSADERYLLVARG DYKTLKKVKTLVDSKTLDGIRNFSDYTFSDDETQVLLATN SFKTGKQTLFDVDNTMGEKITSFDGYTMSPDGKKMLIQTE NPKTQKDELIFKAEPDHDKNFEYTSFQWSKDSKYILFQTN SYTKDAPGELDFEWKNDKENRD ADYQFSPDGKLLL DAPVADSRTLMKRFEHGQKGYSVGKVVPSRDLQKVLVATN NAVTGENETFV AAEQVPADYWDYWISSDLTRVLWATN NAENGNSSVFLDNTTFEALGNS ETKTNKAVETIFDGNASDPKINTAEYSFSDKEDKILIQTN DLKTNTTQVLVSLDDKDEHGIPLSWAEWSKDMKYLLVKAD SFRTGKTELFDVNNTMGEKDKEFDGYDMSPDGKRMLIQTQ NVETNTTTLLLENTTFVTF KASRYSVSPDGRFVLLAYD DYSTLEKVATVISTGDLERLEDFSSYSYSEDESKLLLATQ SPKDQKEEVIFDGAQLKFPNSDYGSFQWSKDSKNVLEQSNSYESTLKKG
QSSDVVVPGKFEGYEFSSDERYVLLQTD DYKTLQKVET\|VKASDLSEITQSFSSYSFSDDESKMULATK

SFKTGKQTLFDVKHTMGSTПDSFDGYEDSPDGTKMLIQTA DVKDKYKQVLMEDSALETPGNNGSKYWPSPDLSKVLVATD FAPEKQQEAVVFDGSQLTFPGTYSSFQWSKDSKNILFQAN DAA GKAEVLVAAEKLIPPGAAVHGYDLSKDLDLVLIFTN EAEHKQTRVLMNSSYIHVNGETISPSKVSPDLKSVLVLSD DVARNGRTVLVAARDATGKPVEIQHYAWSADGKRLLILTN DTRSGKRNVLI DAQKLIPSGQSTSNYQWSADKQQLLIFTN EAATGKKTLLIPVDKGAKEPLKVQDFAFSKDLDLALIIFTN NDRNQKSTVLMKRETFKVGARRVSKVWPSPDLKTVLVMSD EDKHDKEKELDGNSTFKYKGHEITDYFASPDLQKVILKTD D DRSSETRVLMKKGYDWFDGEAMLSAWPSPDMNRVLVMTD RFPTVEPEVFLEAASDTNEPLSFFNYWISPDEQFVLLATE KASKYSVSPDLRFVLLAYD EAKNGNRTILVGANELTPAGANVADYQWSEDNSKLLIFTN DAKKDKREVLIPAASFVKPGTSVRSFSFDASRKQVLVYTN ESKSNAQEIFLSAEALTPSGEDIADFSGSNDESKVLIFTN DYLNASKSTTLTSNTSINDPA FDTYQFNKDESKVLLGTK NVVSRKPRKILDSNNNALMSSFDHQLSADRKYLLLATD DTSSSYSQTI FEGSHVTYNNEKIEDUIASDNLKKALLIVSD NFKTNKTTTLLDNSTMDLKS GMAFQVSADKRFGLMAYN NFETLEKAKTUFSTSAFKDUKSGDTYDLSSHQRYLLVARE DEFGHSINDYSVSPDRQYILFEYN AYATGEATLLNGKVSGRPGKAI AGYSFGSKEDRMLVYTD DVAANESTLISNRTMD DEALVRVWVHPNKEYVLSSD SDKDYSQTLMKGNF OSGENVDYFSASPDLLKYLLI RTN D RSGDKFTLMKKGNFMQUGEDISNVWPSADFKKVLVMSE DTRSQDARTLMEKGSFEYGKRVYNAVKVAPDGQRVLVATD SFKTGKQTLFDVNKTПGEKITKFDGYILSPKGDKFLIQTN KAKDNSKEVLIPANMQTGKPISVRNFVFSEDNSKVLIYTN DASSRQSRNVL NDTNSALVASFDHQFSADRKYLLLAFN TLSSNSNASKILLPAKDSILGGNNFEISADKNYLKVAHG NLRTDKQTRVIDGTTLHAGDVGDEDYTFGPAGDKVLIYTD NPGNKADDTIVSSFMVGKRDVRPSKVWPSPDGKTVLVMSD DYDQER DAKTGERSILLEDAQHYVL YEKSADGEFLLLAKN

UniRef90＿UPIO0041DF04E UniRef90－J9GID4
UniRef90 A2TZSO UniRef90－UPIOOO440B502 UniRef90＿UPI0003337C08 UniRef90 UPIO0040FD03C UniRef90－G2PKU8 UniRef90－Q16RL5 UniRef90＿U2NNA1 UniRef90－UPIO00413C4E6 UniRef90－UPIO003B365A9 UniRef90－R5CG79 UniRef90－G3P9X7 UniRef90＿UPIo0040D165B UniRef90＿E6X4E5 UniRef90－H1Q311 UniRef90－Q6PG25 UniRef90－UPI00036C7FD7 UniRef90－E9FZG6 UniRef90－G5GA54 UniRef90－D6WJ57 UniRef90 W1QLF8 UniRef90－E4TNQ6 UniRef90－UPIO0041A11E9 UniRef90－H2SXB4
UniRef90 H2UNZ3 UniRef90－M2RLM4 UniRef90－Z4X1S5 UniRef90－I3YJR8 UniRef90－10K3J6 UniRef90－T1DG95 UniRef90－F6GDA9
UniRef90 $07 P S F 9$ UniRef90－V8C347 UniRef90－M5G6P7 UniRef90－L8JYJ9 UniRef90－R7JIM1 UniRef90－K2SOL3 UniRef90－G5AKB6 UniRef90－14AH32 UniRef90－R5Q3M4 UniRef90－HoZN40 UniRef90－UPI00047914F3 UniRef90－UPI0003735FFF UniRef90＿UPIO003800974 UniRef90－A9DK52 UniRef90－D1VX34 Uniinefon W7HP94 UniRef90－12GTM3 UniRef90－UPIO0016C4A2E UniRef90－V5FYPO UniRef90－A0A03117U3 UniRef90＿R7HKY9 UniRef90－A1ZWZO UniRef90－UPIO003135D79 UniRef90－C4JHY5 UniRef90－B9WHL2 UniRef90－B6HFS8 UniRef90－A0A058ZAC3 UniRef90－G1NIG1 UniRef90－K1L125 UniRef90－R7AFU4 UniRef90－A3XL92 UniRef90－UPI000248EB99 UniRef90－UPIO00258E898 UniRef90＿W6Mk00
UniRef90－UPI0002557B1E UniRef90－UPIOOO440EA62 UniRef90－U5EWK1 UniRef90－H1GSM8 UniRef90 L8IGB9 UniRef90－R5YZY2
UniRef90
W4XLFO UniRef90－GoW800 UniRef90－QOUVK7 UniRef90－A3WLP9 UniRef90 Q2HF90
UniRef90 R6W1K0 UniRef90－A6L715 UniRef90－KIIXE7 UniRef90－D3IAG7 UniRef90－UP10001758241
UniRef90－D5 UniRef90－D5H6DO UniRef90－C5P334 UniRef90－C5DM95 UniRef90＿Q29R16

 TRSIYRRSFTAVYYIYDVANNKFEALSKGGA QQVPKFSP

V
＜カコく○
9 T

## I



 | $V$ | $P$ |
| :--- | :--- |
| $V$ | $Q$ |
| $V$ |  |
| $Y$ |  |
| $T$ | $R$ |
| $S$ |  |
| $S$ |  |
| $S$ |  |

VSA V V

 YAKQWRHSSFGNYYVHDLETQTTFPLTSHPPVTAYATWSP

 YKKQWRHSSFGNYYIHSLKTNSTRALPSDPPVISYVAWSP
 EKSNWRHSSYAAYWI FDVKTQTAEPLVPGEPDAQDAQWSP VS
RQSTYRRSYMAEYYVVNMSDKSVKKLSEKGRSA YATFSP YQKQWRHSSFGNYYVHEFATKVTRPLPSRPPVTAYATWSP TERDYRRSFKAVYYIYTTSSHKLEKLSDGGPQQDPTWSP VKMHWRYSYTASYVIYNIHTWELNPPEVEDSVLQYAAWGV FRPVYRRSGDSDYYVYSVADKSLKLVAK

 SVKVWRQNTRGDYWTFRRSTGKLAKLGGDPSTMLMFAKMSP
$E Q K N W R H S F T G R Y W V F D V E S Q T A Q P L D P S D P N V Q L A S W S P ~$

 SARVWRRNTKRDYWTFRRSTGKLVKLGGDPSSLMMAKLSPB VTS LDWRYSS DA QY WVLDI NNGD DK PVVNEVDKI STAS WS P
 VKQVFHYSYTASYVIYNIHTWELNPPEVEDSVLQYAAWGV TQKVWRYHTRGDYWVLDLQSKQLNQVGKGTSSLMFAKFSP
 $\square K K R Y R R S S S G D Y Y V Y D F N T K K A T V I S D S A D I D S P V F P$ YQKLYRRTYLARYRIVNLETLVDTSLTNDSDSLQLATWAP KKHNWRHSFFANYWIYNVEDRSVQP LYDPNSK A L A A SWAP GDVFY

 Y V K
VEMDYRRSFRAAYYFTSVGSNELQPDSDRFSKQQDAT LSPP EKPIFRSSFEAVYKDYDVAKKSVIKTLLPPNSLRYAAWVP SKKNWRHSSFGTFFI YDKDAEEEKKFHKLGDNI ALAQWSP QQKNWRHSYT GLLYWI FDVETQTGEPLENQSARVQYASFSP TKRSWRTHTLGLDYWVLNRTTGEGEPQLENQSARVQYASFSP VK SNWRHSSYAAYWI FDVKTQTADPLVPGEPDUQLAQWNP


 SKEVWRANTKAGYYYVVNLNNNERTELHVGGNRDLLAVWAP QRKNWRHSYTGNYWI FDVVETQ T GEPLES LD G G IQQLA S WS P


UniRef90_UPIO0041DF04E UniRef90-J9GID4
UniRef90 A2TZSO UniRef90-UPIO00440B502 UniRef90-UPI0003337C08 UniRef90-UPIO0040FD03C UniRef90-G2PKU8
UniRef90-Q16RL5
UniRef90_U2NNA1

UniRef90-UPIO00413C4E6 UniRef90_UPI0003B365A9 UniRef90-R5CG79 UniRef90-G3P9X7 UniRef90_UPIo0040D165B UniRef90-E6X4E5 UniRef90 H1 Q311 UniRef90-C3JCZ5 UniRef90-UPI00036C7FD7 UniRef90-E9FZG6 UniRef90-G5GA54 UniRef90-D6WJ57 UniRef90 W1 QLF 8 UniRef90-E4TNQ6 UniRe90_UPI00041A11E9 UniRef90-H2SXB4 UniRef90-H2UNZ3 UniRef90-M2RLM4 UniRef90_Z4X1S5 \begin{tabular}{l}
UniRef90_13YJR8 <br>
UniRef90-IOK3. <br>
\hline

 UniRef90-100K3J6 UniRef90-F6GDA9 UniReffo-OTPSF9 

UniRef90-V8C347 <br>
UniRef90 <br>
M5G6 <br>
\hline
\end{tabular} UniRef90-L8JY J9 UniRef90-R7JIM1 UniRef90-G2Q5V6 UniRef90-K2SOL3

UniRef90-G5AKB6 UniRef90-14АН32 UniRef90-R7SPE6 UniRef90-R5Q3M4 UniRef90-HoZN40 UniRef90-UPI00047914F3 UniRef90-UPIO003735FFF UniRef90-UPIO003800974 UniRef90-A9DK52
UniRef90-V5FYPO
UniRef90-A0A03117U3
UniRef90_R7HKY9
UniRef90-A1ZWZO
UniRef90-UPI0003135D79
UniRef90-C4JHY5
UniRef90-B9WHL2
UniRef90-B6HFS8
UniRef90-A0A058ZAC3
UniRef90-G1NIG1
UniRef90-K1L125
UniRef90-R7AFU4
UniRef90-A3XL92
UniRef90-UPIO00248EB99
UniRef90-UPIOOO258E898
UniRef90_W6Mk00
UniRet90-UPIO002557B1E
UniRef90 UPIOOO440EA62
UniRef90-U5EWK1
UniRef90-H1GSM8
UniRef90-L8IGB9
UniRef90-R5YZY2
UniRef90-W4XLFO
UniRef90-GOW800
UniRef90-A3WLP9
UniRef90-Q2HF90
UniRef90-R6W1K0
UniRef90-A6L715
UniRef90-K7IXE7
UniRef90-UPIOOOO1758241
UniRef90-D5H6DO
UniRef90-С5Р334
UniRef90_С5DM95
UniRef90-O29R16
UniRef90_UPI0002886A20


 K G Q QL I FIGF ENNI Y Y C A QV G K QVI R V V S T GK E GVI Y N G L S







 D G R M V A F V R R N N I F I



 D S S S I I A F I V D N N V Y Y V
 H GQQMIVY I FENN I YFQS DVQ S S S WRLITSSGQE GII FN GI A


 DGKRVGYERGGNLFVFDFATAKETQLTGDAKPAFY NGRF


 D GTK I GYERD GNLIVVFDFST QKETQLTLDAEEYFY NGRF

 D GSKV AFFRKNNLFYVTLSDMKEVQDTDDGLFNKII NGAG TGDSI A FVVALNDLYVVPSPFDDPVRVTTSGNASLFH GVP D G M Q V A F V R D N N I H V K L L L Y D N A E S E V T K K D G K K N E I I H GQQQL DY I F E N N I Y Y Q P DVVK S S S L R L T S S GK E G I I F N G I T

 D A S K V A F S F E N N I Y I Q D L K T N K VT Q QV T T D GKKK N S I I N G I N $N G K K V A Y V Y E N N I \quad Y$ I K D L L M S G K E T Q I T N D G V K N N K I I K GQQLDFI FENNI YYCAHVGKQA DRVVSTGKEGVI YNGL S | $D$ | $G$ | $K$ | $Q$ | $A$ | $F$ | $V$ | $R$ | $N$ | $N$ | $N$ | $L$ | $H$ | $l$ | $K$ | $L$ | $L$ | $Y$ | $D$ | $N$ | $A$ | $E$ | $S$ | $Q$ | $V$ | $T$ | $K$ | $D$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | D GS K V G Y ER G G DL Y V F DFA T Q K E T Q L T D DAKPA F Y N G R F














 Q S D A V V F TAR D N N L L Y L





 $N S V D I A Y V K E N D L Y V Y S S K K H A T V V R V T D D G S A Q V F N G K P$ VGNA L V I N Y D R N L Y Y K E S A L LA Q E I A L T S D E Q A G L

UniRef90_UPIO0041DF04E UniRef90-J9GID4
UniRef90 A2TZSO UniRef90_UPIO00440B502 UniRef90-UPIO003337C08 UniRef90_UPIO0040FD03C UniRef90-G2PKU8
UniRef90_Q16RL5
UniRef90_U2NNA1
UniRef90_UPI000413C4E6 UniRef90_UPI0003B365A9 UniRef90-R5CG79 UniRef90-G3P9X7 UniRef90_UPIO0040D165B UniRef90_E6X4E5 UniRef90-H1Q311 UniRef90_C3JCZ5 UniRef90-Q6PG25 UniRef90_UPI00036C7FD7 UniRef90-E9FZG6 UniRef90_G5GA54 UniRef90-D6WJ57 UniRef90-W1QLF8 UniRef90-E4TNQ6 UniRef90_UPI00041A11E9 UniRef90-H2SXB4 UniRef90-H2UNZ3 UniRef90-M2RLM4 UniRef90-Z4X1S5 UniRef90-I3YJR8 UniRef90-IOK3J6
UniRef90-T1DG95 UniRef90-F6GDA9 UniRef90-Q7PSF9 UniRef90_V8C347 UniRef90-M5G6P7 UniRef90-L8JYJ9
UniRef90 R7JIM1 UniRef90-R7JIM1
UniRef90-G2Q5V6 UniRef90-K2SOL3 UniRef90-G5AKB6 UniRef90-14AH32 UniRef90_R55Q3M4 UniRef90-HOZN40 UniRef90_UPI00047914F3 UniRef90-UPIO003735FFF UniRef90_UPIO003800974 UniRef90-A9DK52 UniRef90-UPIO0029DBA7C UniRef90-D1VX34 UniRef90-W7HP94 UniRef90-I2GTM3 UniRef90-UPIO0016C4A2E UniRef90-V5FYP0 UniRef90-A0A03117U3 UniRef90_R7HKY9 UniRef90-A1ZWZ0 UniRef90_UPIO003135D79 UniRef90_C4JHY5 UniRef90-B9WHL2 UniRef90-B6HFS8 UniRef90_A0A058ZAC3 UniRef90-G1NIG1 UniRef90_K1L125 UniRef90-R7AFU4 UniRef90-A3XL92 UniRef90-UPIO00248EB99 UniRef90_UPI00025
UniRef90-W6MK00 UniRef90_UPI0002557B1E UniRef90-UPIO00440EA62 UniRef90-U5EWK1 UniRef90-H1GSM8 UniRef90_L8IGB9 UniRef90-R5YZY2
UniRef90- W4XLF0 UniRef90-GOW800 UniRef90-Q0UVK7 UniRef90-A3WLP9 UniRef90_Q2HF90 UniRef90_R6W1K0 UniRef90_A6L715
UniRef90 K7IXE7 UniRef90-D3IAG7 UniRef90-UPIO001758241 UniRef90-D5H6D0 UniRef90-C5P334 UniRef90_C5DM95 UniRef90_Q29R16A11E9


DWV NEEEFTTNCSFDFSADSKMLAWIRYDESKVPVYDMQ


## $D$ $D$ $D$ $D$ $D$ $D$ $D$ 

D

## D

K
$\ll$
$\ll$
$\ll$
$m m$
$m$
$m m m$
$m \rightarrow 1$
正UniRef90_UPI0002886A20

## UniRef90 UPI00041DF04E UniRef90-J9GID4

 UniRef90-A2TZSO UniRef90-UPIO00440B502 UniRef90 UPI0003337C08 UniRef90-UPI00040FD03C UniRef90-G2PKU8UniRef90-Q16RL5
UniRef90- U2NNA1
UniRef90-UPIO00413C4E6 UniRef90_UPI0003B365A9 UniRef90-R5CG79 UniRef90-G3P9X7 UniRef90_UPI00040D165B UniRef90_E6X4E5 UniRef90-H1Q311
UniRef90 C3JCZ5 UniRef90-Q6PG25 UniRef90-UPI00036C7FD7 UniRet90-E9FZG6 UniRef90-G5GA54 UniRet90-R5FLY1 UniRef90-D6WJ57
UniRef90 W1QLF8 UniRef90-E4TNQ6 UniRef90-UPI00041A11E9 UniRef90-H2SXB4 UniRef90-H2UNZ3 UniRef90-M2RLM4 UniRef90_Z4X1S5 UniRef90-I3YJR8
UniRef90-IOK3J6 UniRef90-T1DG95 UniRef90-F6GDA9 UniReffo-OTPSF9 UniRef90-V8C347
UniRef90 M5G6P7 UniRef90-L8JY J9 UniRef90-R7JIM1 UniRef90-G2Q5V6 UniRef90-K2SOL3
UniRef90-G5AKB6 UniRef90_14AH32 UniRef90-R7SPE6 6 UniRef90-R5Q3M4
UniRet90 HOZN40 UniRef90-UPI00047914F3 UniRef90_UPI0003735FFF UniRef90-UPIO003800974 UniRef90-A9DK52 UniRet90-D1VX34 UniRef90-W7HP94 UniRef90 ${ }^{-12 G T M 3}$ UniRef9O-UP100016C4A2E UniRef90-V5FYPO UniRef90-A0A03117U3 UniRef90_R7HKY9 UniRef90-A1ZWZO UniRef90_UPIO003135D79 UniRef90-C4JHY5 UniRef90-B9WHL2 UniRef90 B6HFS8 UniRef90-A0A058ZAC3 UniRef90-G1NIG1 UniRef90-K1L125 UniRef90-R7AFU4 UniRef90-A3XL92 UniRef90-UPIO00248EB99 UniRef90-UP1000258
UniRef90-W6MK00 UniRef90-UPI0002557B1E UniRef90-UPIOOO440EA62 UniRef90-U5EWK1 UniRef90-H1GSM8 UniRef90_L8IGB9 UniRef90-R5YZY2
UniRef90
W4XLFO UniRef90-GoW800 UniRef90-QOUVK7 UniRef90-A3WLP9 UniRef90-O2HF90 UniRet90_R6W1K0 UniRef90-A6L715
UniRef90 K 71 IET UniRef90-D31AG7 UniRef90-UP10001758241 UniRef90-D5H6DO UniRef90-C5P334 UniRef90-C5DM95 UniRef90_Q29R16
 MFMGDYEEYPGNYSYKYPVAGAKNSDVSVLTFDIKNRVTR MFMGDYEEYPGNYSYKYPVAGAKNSDVSVLTFDIKNRVTR VVGDGLYPNQQVREKYPKAGEKNADVTLHMYTLANK TYTGSVYP TVKPYHYPKAGCENPSISLHVIGLNGPT VYGKELYPSQEV FKYPKAGEKNAEI SHHVYDVATNTTQ VYGKDLYPYQ HEFKYPKAGEKNSIVTHHMYDVASGNTA IYGPPGHPEFQYPHEHYPKAGTPNPSVNLYQVNLMNPS MFEGSHPTRSELYTYKYPKAGEVNAKVSAWAYDIQSHKTN VYAKTLYPNQQV FKYPKAGEKNAVVSGHLFNVKTGRTR
 HFLGGLYPYSNVLFPYPKAGSSDPSVSLFVVNLYGPAHT
 $\checkmark Y$ GTE PELSSDFDVYP F TFTNDYEILYPGQYTYKYPKAGEVNSNVAVYSFDIKSAVTR VYGEPQDQYPDTNADRYPKPGRPNPKVAVWSDDLQKDESA MFKGAQPEHKESYTYKYPKAGQVNSTVTAWSYDIKSHRTQ TYGVPSSQYPKEVT $\mathrm{I}^{\prime}$ YYPKVGTKNPDVKTYVVNLESSEEK YFVHKDDVYPELRELKYPKAGYPNPQVDFVVYDNKNDKLA
 RFTGMLYPRGKEYAPYPKMAQDNPTVRLYVVTLDGTSQT HF LGGIYP TNMVFSYPKAGSNIPSVTLFVVNLYGP VYNHAVVPYPGHVTMKYPKPGYNNPLVTLHVFDLEEYDKD MYG TSQYPTSYTYKYPKAGTPNSRVSLHIYNVVDRSRK MMRFDGKDYNQAYSFKYPKAGERNSTVEVWVCDLATGAKE DYRGFRETYDSL PYPRVGDRNPSVRIGAVEISNGK DYGPPGHPDFQYPHEHYPKAGTVNPEVTMFQVDLENPTMK VYGNNLYQTQTV GKYPKAGEKNALVSGHGYTGENNKAE LFKKEFAEYPGLYSYKYPKAGTDNSVVTAWSYDIKSHKAN VYNHTVEPYTDFTTMKYPKPGYANPNVSAMLEDLSQYDAD DYS GQHAEYVNVPYPKVGDTNPTVKIGVIDVAARHNQ MMRYDGKGYNEAYSFKYPKAGDANSVVDLYVYDLKTGETE YYMDNTQSYPRELELRYPKVDATNPTVAFNDLDVASAEIT PSYRDTRTGEENIIFDWVYEGAVNPTVKFFVVNTDTLSSL YWADKSQLYP臬DYKFKYPKAGEDNSTLKVFVYNDDSKDKK VYNHTVVPYPGHVVMKYPKPGYANPLVSVHVFRLDSYTEF YFKGSNPTFGEDYTYKYPKAGHDNSIVSVWSYEIKTHKTR RFTGGLYP KGKQYPYPKAGQTNPSVKLFVVNLYGPTH
 DYHNNRYP KEERYKYPKAGQDNSVVTLHVFDTKNNSTT VYGTKLYPQQHV FKYPKAGEKNALVSLHLHSLKSGKTS TYTGSIYP TVKPYHYPKAGSENPSISLHVIGLNGPT LFKGSHPTQMQLYTYKYPKAGQDNAQVSVWSFDVKSHQTR DYK GFDEKYDSLPYPRVGDENPTVRI GVIDVGTKTKQ DNTTAVYPVLKT SAYPKTGERNSACRVGVAPAAG YFMSRPSGYPEVRH1KYPKAGSPNPVVSLQFYDVEKGEVF DTNTVGQYSRPDPLQYPKVGTTNSAVRVGTVDVASGATH
KRSSCDEKPEYKYYKYPVAGEVNSKVKVISYDVETRADK MINNTDSVYSQLVPVQYPKVGETPSACRVGVIDLNG
 FYAQSTHQYPEVVKIKYPKAGYPNPVVDLLTYDLNTKNLH RYGNTDYPSHTPV KYPKVGYPNPIVQMSTMDVDSGTVA RFTGGLYP KAKQYPYPKAGQTNPTVKLFVVNLYGP WN NDDSMYSQPMPMPYPKVGEMLSSVKVGVVSSKGGDTR MINTTDSVYAKPIPLQYPKVGYDPSSTKVGIVNTKTKETT LYKNGKYP EPETFKYPKAGEANSKLSVHLYSTSAAKNT FYGYPGSQYTSADSMHYPKSGTTNPAVKLFYVDLEKVVQN YFVQSEDQYPDLREDKYPKAGFPNPKVDVVVYDFAEGQVR E YAD SNVL SQRYPAAKP VYGGGDYPSNVLLLYYYYKYTGTKNPEVKDFQVDTPATVTL
 FYSDESLQYPKTVKDPYPKAGAVNPTIKFFVVNLSSLSPN MFCSSSGEYDDPQEFKYPVAGADNSKVSFRVWKEDAGNDE C YENKVYSELKFDNYPKPGFPNPTIKRYVMSVED YYVQPDDIVPEMRPIKYPKSGTPNPTVDLWIYNLVDQSSH YFVSRPSGYPEVREIKYPKAGAPNPIVTLQFYDIEKSEMF MDNNTDSDYPTLKQFPYPKVGETNAAMRLGVMPADGGDTT MFKGKHPTRNEEYSYKYPKAGEDNSVVSAWSFDIKSRQTK NNVDSDYP KDQRFPYPKAGTANSAVKVGYVSADGGNTT YYGFPTFQYPSAlPDHYPKSGTQNPTVKLFYVDGEQVVKG MFKGSHPTFNSLDSYKYPKAGFDNADVSLWSFDIKSKRTQ

UniRef90_UPI0002886A20

UniRef90_UPI00041DF04E
UniRef90-J9GID4
UniRef90-A2TZSO
UniRef90- UPIO00440B502
UniRef90_UPIO003337C08 UniRef90_UPIO0040FD03C UniRef90-G2PKU8
UniRef90-Q16RL5
UniRef90-U2NNA1
UniRef90-UPIO00413C4E6 UniRef90-UPI0003B365A9
UniRef90-R5CG79
UniRef90-G3P9X7
UniRef90_UPI00040D165B
UniRef90_E6X4E5
UniRef90-H1Q311
UniRef90-C3JCZ5
UniRef90-UPI00036C7FD7
UniRef90-E9FZG6
UniRef90-G5GA54
UniRef90-R5FLY1
UniRet90-D6WJ57
UniRef90-W1OLF8
UniRef90-E4TNQ6
UniRef90 UPI00041A11E9
UniRef90-H2SXB4
UniRef90-H2UNZ3
UniRef90-M2RLM4
UniRef90_Z4X1S5
UniRef90-I3YJR8
UniRef90-10K3J6
UniRef90-T1DG95
UniRet90-F6GDA9
UniReffo-OTPSF9
UniRef90-M5G6P7
UniRef90-L8JYM9
UniRef90-R7JIM1
UniRef90_G2Q5V6
UniRef90-K2SOL3
UniRef90
G5AKB6
UniRef90-I4AH32
UniRef90-R7SPE6
UniRef90-R5Q3M4
UniRef90-HoZN40
UniRef90-UPIO0047914F3 UniRef90_UPIo003735FFF UniRef90_UPIO003800974 UniRef90-A9DK52

270
 $K M Q V P L D A D G Y I P R D K F T$ K 1

LH T $\square E M K R P E D Q R \square G E$

N D A NVLSARVLNR
S D A E KL A I V T L NRH

 $N \square$
$N L K$ Q Y N D F Y $\square A R L K W S$ DVDLN DP Y Y $\square P \frac{L}{R}$ I K WM H
V K I E I K P P S A L V T P E N D H $\square$ I T S VG W A $R L Q \vee P L D E D G Y M P R \square K S T K$ Q V N V G K I NL D K EYEY $\quad$ PR R $\quad$ Q WT N D S N V I V FTMNRH YNNDFY I PRIKWTN KM DLP LDDADGY $\square P R \square K M T$
 RA K I G N E T D I Y $\square P R$ RVQ WT K D A N L L A I R K LDD R L $N$ VA L P S S K Y DLP LTTNDMYVPRワKTTAQA NRIILYTMNRH

 QTGSHFS $\square$ P $\square P E E F R Q K D H Y F T T V A W A T D D E V M M A W L N R H$ TMAVP VDSDGY DPR DQR T $Q L Q \vee T L P A D G Y M P R I L P$ S D P D RLA $\operatorname{L}$ V VT L NR H V V P L R I R A DP E S WH Q N D D Y VLTY DMVWV T N DEFA V I Y S N RV SLLDPSDAFYNDKDVSNDERLITEVVKWVGDSNF LL KIITNRE $W M Q V P D E D G Y \square P R I Y$ W
$D K \square L Q Y$ QL P L A A D G Y $\square P R \square K T S T K D N Q V I V Y T M N R H$
ELLRP P D S F E K S E Y Y I T M V K K WV G P E S L S V R WV N R A
A H T L L M MLP P D S F R A R D S Y I S M V T W WI S S T R L A V R W W L N R V EDEEDEHLTWDGRQPADNS II A EVA WVGNSTLLI KEVTRA

 $\square A F M Q V E G Q Q G Y \square P R \ Y W T S Q E G Q L A V V H L N R K$
TEDT P $P$ PA LTTTPAK DHUIT SVGGWANNNQVVISIWKNRV

 F PA DT TS V V T P S TMMDIG DRVIQEVVWVGNTSLIFVKEVNRA

SVDTS G GFADD DRLITEVVWA

 E VDLLGED KD DY V P RL E F TH H AKQATVELDDWDGRQARDNSVVAEVAWVSGSALLVKEVNRAA
 TL E L M P P DS F K S R E Y Y $\square T M V K W D S N T K A V V R W L N R A$ $K \ D \backslash G$

DA Y Y $\square P R \square K W M N H K E S G S V Q T L N R H$ WMNVDLGDGY $\quad$ PPR $\square Y$ WT
 E I NLGEEYT D F Y I P R I K WT

 $T V D$ WMKVELGSNAEPAGYDPRDYWTSQGEGQLALLHLNRK

 EMNV

 S $\square E M E$ D DLL P D H D R LI I E V

 A H T L E L M P P D S F K S R E Y Y I TMMVNWVSN TKAVVVRWLN R P WFDFPGDPRNNYLARMDF\P





CRDSY i S




 RLNVPSDNDSYMPRIKMT W L A P GDARNHY $\quad$ PR MEF $\square P G C$
 $K$ M Q L P L S A D S Y I P RLLKA T $K Y V N V H P Y D T E S S S Y N F R P \square L T T V S W A T D N D V S A D I M M N R V$
 AVAAGNESSLITTE


UniRef90_UPIO0041DF04E UniRef90-J9GID4
UniRef90-A2TZSO UniRef90-A2TZSO
UniRef90-UPI000440B502 UniRef90-UPI0003337C08 UniRef90_UPIO0040FD03C UniRef90-G2PKU8
UniRef90_Q16RL5
UniRef90_U2NNA1
UniRef90_UPI000413C4E6 UniRef90_UPI0003B365A9 UniRef90-R5CG79 UniRef90-G3P9X7
UniRef90_UPIO0040D165B UniRef90_E6X4E5 UniRef90-H1 Q311 UniRef90_C3JCZ5
UniRef90 ${ }^{\text {Q6PG25 }}$ UniRef90-UPI00036C7FD7 UniRef90-E9FZG6 UniRef90_G5GA54 UniRef90-R5FLY1 UniRef90-D6WJ57 UniRef90-W1QLF8 UniRef90-E4TNQ6 UniRef90_UPI00041A11E9 UniRef90-H2SXB4 UniRef90-H2UNZ3 UniRef90-M2RLM4 UniRef90-Z4X1S5 UniRef90-I3YJR8 UniRef90-IOK3J6 UniRef90-T1DG95 UniRef90-F6GDA9 UniRef90-Q7PSF9 UniRef90-V8C347
UniRef90 ${ }^{-}$M5G6P7 UniRef90_L8JYJ9
UniRef90_R7JIM1
UniRef90-G2Q5V6
UniRef90_K2SOL3
UniRef90_G5AKB6
UniRef90-14AH32
UniRef90-R7SPE6 UniRef90-R5Q3M4
UniRef90-HOZN40
UniRef90-UPIO0047914F3 UniRef90_UPI0003735FFF UniRef90_UPI0003800974 UniRef90-A9DK52
UniRef90 UPI00029DBA7C UniRef90-D1VX34
UniRef90-W7HP94
UniRef90-I2GTM3 UniRef90-UPIO0016C4A2E UniRef90-V5FYP0 UniRef90-A0A03117U3 UniRef90-R7HKY9 UniRef90-A1ZWZ0 UniRef90_UPIO003135D79 UniRef90_C4JHY5 UniRef90_B9WHL2 UniRef90-B6HFS8 UniRef90_A0A058ZAC3 UniRef90_G1NIG1 UniRef90-K1L125 UniRef90_R7AFU4 UniRef90-A3XL92 UniRef90_UPI000248EB99 UniRef90_UPI000258E898 UniRef90_W6MK00
UniRef90-UPI0002557B1E UniRef90_UPIO00440EA62 UniRef90-U5EWK1 UniRef90-H1GSM8 UniRef90_L8IGB9 UniRef90-R5YZY2 UniRef90-W4XLFO UniRef90-G0U8K7 UniRef90_A3WLP9 UniRef90-Q2HF90 UniRef90-R6W1K0 UniRef90-A6L715 UniRef90-K7IXE7 UniRef90_D3IAG7 UniRef90-UPIO001758241 UniRef90-D5H6D0 UniRef90-C5P334 UniRef90-C5DM95 UniRef90_Q29R16 UniRef90_UPIO002886A20
 QNNL $\quad$ D
QNHAKVTTCDQNNSCGEIQDIETDE RADGGWDEAYVD QDVLN LYYANPRTTLSQLLTKEKADKYVKEESMEQVQI

 QNQSVLCCVCEATTGACSEKK




Q

VARLKD
RAQTN M
QDELLN
QNMSL
QNQSVLSCVCSVVTGICTSKKV
ADNGSIVFFDLNSEDADLGRIVRKLGAEKMAMDIMQNRRQ
QNHLLRLFYV QNKTLLPKLILEDKSKTYVDSH
 QNHAIVVSCD SRNVCVE\|HEDKVNGGWDELF
QNELDLWS IDTETNEAYLIVEEKDKAYI DVTDN
QNHAIIKSCLPESGQC QSELN QNHLKKLFFNDVKSGQGK $V$ LIVMEEQSEA WDDVFDFFAGDIV
 $R V Q D S E K V V N V D V N S G S T S V V R E R S E D E G W L D N N D A D T Y V$ QNYSVMDI CDYDKSNDGWNCSLAHEHTEMSTTGWVGRFRP
 QNHL QVYMANVRTGDARQUMEETSNTWVD DFDFFAGDN Y D I S SKKVNK LIFTETNKAWIETDNDTVEFLADNS
QNELDLIMYNAASNQAK VVLKETDKAYDD TVDNDTFDADN QNTSILTLCDA

 SDULKVIVIDTASRTGRVVRSDDDASGDWVEPTQSTRYIP
 QN TVRVWVASDGGGAPQNDLTETDAAWVETN QNNLS ULSINTKNKKVKKLYTETDAA




QNYSUMDICDYDRSTGRWISSVGRQHDEDSTTGWVGRFRP

 $R K Q D V N R V Y L S D \square S N G R S Q K L L S E T T D S W A E V T H$
$S D V M R V V L V D V A A R S G K T V R T T D V K A D D W F E D T H Q T K H T P$
 QNQAYFHMCNVDDRNCSTALLAYKERN QDELLC LYSVNPRSTVAQLLIKKETSPKYDKEEAGGNEQF QNNAFIVTYTI TPDSYQLETCPQDRNLNQPSGWLELF RNQNVLDLLYGHPETGRTEPVLQDTQDTYIDVT
SDRVSVVLIDAAKRAGKVVRSRNFSSDDWVEPSQTTHFDP $S D D L S V V L A D A R V E G K H E V S R D E S S E D S W W E D T H D T M H L P$
$Q N A A Y V V T F D$
Q


UniRef90_UPIO0041DF04E UniRef90-J9GID4
UniRef90 A2TZSO UniRef90_UPI000440B502 UniRef90_UPI0003337C08 UniRef90 UPIOOO40FD03C UniRef90-G2PKU8 UniRef90-Q16RL5 UniRef90_U2NNA1 UniRef90_UPI000413C4E6 UniRef90_UPI0003B365A9 UniRef90-R5CG79 UniRef90-G3P9X7 UniRef90_UPIO0040D165B UniRef90-E6X4E5 UniRef90-H1Q311 UniRef90_C3JCZ5 UniRef90-Q6PG25 UniRef90_UPI00036C7FD7 UniRef90-E9FZG6 UniRef90_G5GA54 UniRef90-D6WJ57 UniRef90-W1QLF8 UniRef90-E4TNQ6 UniRef90_UPI00041A11E9 UniRet90-H2SXB4
UniRef90-H2UNZ3 UniRef90-M2RLM4 UniRef90-Z4X1S5 UniRef90-I3YJR8 UniRef90-10K3J6 UniRef90-T1DG95 UniRef90-F6GDA9
UniRef90 Q7PSF9 UniRef90_-V8C347 UniRef90-M5G6P7 UniRef90-L8JYJ9 UniRef90-R7JIM1 UniRef90-G2Q5V6 UniRef90_K2SOL3
UniRef90_G5AKB6 UniRef90-14AH32 UniRef90-R7SPE6 UniRef90-R5Q3M4 UniRef90-HOZN40 UniRef90_UPI00047914F3 UniRef90_UPI0003735FFF UniRef90-UPIO003800974 UniRef90-A9DK52 UniRef90-D1VX34 UniRef90-W7HP94 UniRef90_-I2GTM3 UniRef90-UPIO0016C4A2E UniRef90-V5FYP0 UniRef90-A0A03117U3 UniRef90_R7HKY9 UniRef90-A1ZWZ0 UniRef90_UPIOO03135D79 UniRef90_C4JHY5 UniRef90-B9WHL2 UniRef90-B6HFS8 UniRef90_A0A058ZAC3 UniRef90-G1NIG1 UniRef90-K1L125 UniRef90-R7AFU4 UniRef90-A3XL92 UniRef90-UPIO00248EB99 UniRef90_UPI00025
UniRef90-W6MK00 UniRef90_UPI0002557B1E UniRef90-UPIO00440EA62 UniRef90-U5EWK1 UniRef90-H1GSM8 UniRef90_L8IGB9 UniRef90_R5YZY2
UniRef90 W4XLFO UniRef90-GOW800 UniRef90-Q0UVK7 UniRef90-A3WLP9 UniRef90_Q2HF90 UniRef90_R6W1K0 UniRef90-A6L715 UniRef90-K7IXE7 UniRef90-UPIO001758241 UniRef90-D5H6D0 UniRef90-C5P334 UniRef90_C5DM95 UniRef90_Q29R16

GNWEVVTSYYGFDEKSNTVVFYQSTENGS\|INRAVVSI\|ALSGK GDFEVTDFYGYDEKTGKFYYASREESPLRKAVYVADKKGK GDWEVTNYYGFNPTKKT\YYQSVENGSUNRGVYSQGLDGK
 GNWEVTMYYGFDEKNGQUYYQSVENGSINRQVYKMK LVEG GPWEVTRYYGYDEKHDRIFYQSVENGSVNRGVYSVSTKGK GDFDITEVVYGFDEKTGDVYYQAASDNSHDRQVFVAHKNGK G NWEVTSYYGLNEATKTIFYQSVENGSINRDVYSISLNGK TNYEVTDVYGYDERTGNVYYQAAGKNPMNREVYVTYKNGK GSWDVDSLSALDEKAGKI YF LASAEESRQSRHLYSVDLDGV GNWEVTEELLGUDEEDSTLYFLSTEVVSPLERHFYRMQUDGK GNYDVTAMYGFDEKTGRTYFQA GEWDIIDTALYGVDKEGNAYY GDYEVSSFLGWSAKDNTFYYESN GRWEVTSFLGWSAKDNGYYESNEGNPTETTGYKI DAKNG GRWEVTE I L GWDEPNH LDAYF DGTADKPAVRHMYKVSTGAV GEYDITDVYGYDEKTGDVYYQAADPTPQDRQIFVSHRNGK GPFYVTAVDGWDEANNNI YFSGTGENQPSQLHAYVVNDET GEWEVVDAAAFDAVLNKVYFDSTEKSSVERHLYSIDDDGS GDWEVVYVHAVDSKKKKIYYSSTEDSSPLERQLYVVNFNGR GSWEVSQLLAYDEESDNSVYFQSTEESSTQRHLYVRVSSRGEP GEWEVTGGLAVDTNRSLVYFQA GHYDVTNFYGADASGNLYY QAADE GDWEVTXDVAGTDGKRVWYLSTETS GKYVVVQEI LIRWEPESNIDFYAANTEASPMERQLYVIDVTGK GNWEVTSYYGYNPKNDRIYYQSVENGSINRDVYSILKNGT
 GD WEVTGQVDSQRRVVYFQGAGPGAASTQRYI Y SVRLPSA

 GEWEVRS LLKVDTERSLVYYTSTEHHSTESHLYSVSYKTF
 GEWEVTSI LAVDNNRSLVYFQAANPSSTQRHIYSVPLPKG RNHDITAAYGYDESTGDVYYQSAADNAHDRQVYVAHKNGK GNWEVIKI LAYDENTQKI YF LDSTEESPRGRQLHSVSTVGS
 GDWEVTNYYGYNPANKTVYYQSNSNNSTERQQS SVMSLDGK GNWEVTKYYGYDEDEDRVFYQSVENGSIINRDIYAIKI NGK GKYDITAFYGYDEKTGDVYYQAAALNPHDRQGFVAHRNGK

 $G K F D V V S L L R V D A A Q N A A W F D A S P D N P T Q R Y L Y R A T L T G A$
$G D W E V T D F Y G Y D P A T M R Y Y Y Q S T Q T G A L N R V V A S V D A K G V$ GNFDVVNVLEDDPKGGYCYF DASPDNPTQRYLYRASLYKK
 GNWEVT GGVAFDFTSNTVYFTATVKSPVERHI HA R N DVGS

 GDFDVERUSHDDPQTGYVYYUASPENFTQRYYYRSPGMQR GDYDVAAFYTATNKEVFFSASPED PAARYLASTSLKGK GNWDVTEFYGIDDAAEKTVYYQCTEGST\|ERQLIGSVQI NGK


|  |  |
| :---: | :---: |
| UniRef90-J9GID4 | NK VKKL |
| UniRef90-A2TZSO | QLLSNKDGQNSAA |
| UniRef90-UPIO00440B | FNRRCLSC NSDGCGYVSSSFSHDM |
| UniRef90-UPIooo3: | FNRQCLSCD LIENCTYFSA |
| UniRef90-UPIO0040FD03C | GKMRLTSKT GTNKATFSP |
| UniRet90-G2PK | RKKALSTEE |
| UniRef90_Q16RL5 | AKPMCLTCTVGSPKQSYFNAQMSKKGKYVVLEAKGPGVPW |
| UniRef90 UPIOOO413C4E6 | NK KLISRKYGTNNAAFSKNKNYFINTFSDANTPR |
| UniRef90-UP10003B365A9 | NKKRLSSKT |
| UniRef90-R5C | NEGWNSAV |
| UniRe | FQRRCTSCNR】DGCR FFKAEFSPDQSYFIL |
| UniRef90-UP100040D165B | NKEKLTS MAGFHEVNMSQDFSYY LN |
| UniRefoto-E6X4E5 | NKRKLA |
| UniRef90 H1Q3 |  |
| UniRef90 O6PG25 | SN |
| UniRef90-UPIOOO36C71 | KHT पTSKKG $\square$ NTAVFSGDMSYFMNKYSSFKEPD |
| UniRef90-E9F2 | GDVVCVTCGTLNKECTYNTIEFSTDMGYYVHGCDGPNAPR |
| 砍 |  |
| UniRet90-65FLY |  |
| UniRet90_D6WJ57 |  |
| UniRet90 W10LF8 | SAV |
|  | GRHNIDMAPEATYFVDRYSDV |
| UniRef90-H2SXB4 | FQKECLSCSLFRSKCSFYDSTFSPDLQHVVLH |
| UniRef90 H2UNZ3 | FQRQCLSC NLIEGCRFFKAEFSPNQTHFTLYCLGPG\\|PK |
| $\begin{aligned} & \text { UniRef90-M2RLM4 } \\ & \text { UniRef90-Z4X1S5 } \end{aligned}$ | ASAEMVEPTALTESEGYYEADFSPEAGYYVLSYYLGPDPITPW |
| UniRef90-13YJR8 | QKRRLTTGE GFYT APSADMKYYISTFSNAA |
| UniRef90_10K3, | GRHAINMSRN |
| UniRet90-T1DG95 | ATPMCLTCVGSIVPQQSYFNAQMSGKGNFVVLIEAKGPGVPW |
| UniRef90-F6GDA9 UniRef90 O7PSF9 | DKKRLTTATEVSAKQSNNADFSADFTYFVNTFSNASTPP |
| UniRef90-V8C347 | DQEGWNTAVISGDYRYLINTWSDYNTPY |
| UniRef90-M5G6P7 | TPFEAPTPMDDGSKPGYWSASFSSQGGYYSLSYEGPEVPW |
| UniRet90-8JY/9 | N |
| UniRet90_R7JIM |  |
| UniRet90_G2Q5 | EGYYAASFSUGGGYVLLTYEGPGPD W |
| UniRef90-K2SOL3 | LVDDTVAGYWSASFSSGGSYYSLSYQGPDVPY |
| UniRef90-G5AKB6 | PQRCQYYSVESSKEKKYYLKCWGPGLP |
| UniRef90 R7SPE6 | DVPGYYDASFSPGGAFYLLSYRGPHPPW |
| UniRef90-R5Q3M4 | EQEGWNSADFSADFKYFI NTWSDYNTPY |
| UniRef90_H0ZN40 | EQCTYFSAKFSPMNRHFLLHCKGPGVPV |
| UniRet90-UPIO004 | KR K K Liva AGVNSASFSANFTYFINNYSSATTPP |
| UniRef90_UP1000 | KNAGRNAVNFSPNGQYF:DKYSNS |
| UniRef90-A9DK52 | KKKRLSTKE |
| UniRef90-UP100029DBA7C | FNRQCLSCD VENCTYFSASFSHSMDFFL |
| UniRef90-D1VX34 |  |
| UniRef90 W7 | ALTNVTSEGMYDASFSSKAGYALLSYNGPGDPW |
|  |  |
| UniRef90-UPIO0016C4A2E | QPGWHDYDLAPGGALLAV |
| UniRet90-V5FYP | VervkPlo |
| UniRef90-A0AO31703 | VERVP |
| UniRef90-A1ZWZO | GKATRLTPS NQPGTHNYNVAPGGKYAIHTYSTAN |
| UniRef90-UPIOOO3135D79 | GEPERLTP ADQTGWNDYQVRPDND |
| UniRef90-C4J | APAYYTISLSTGAGYALLKYEGPEIPW |
| UniRef90_B9WHL2 | LPYUKDTTKEGWYDSSFSSGARFLFLSELGPGIPT |
| UniRef90-B6HFS8 | V |
| UniRee900 A0A058ZAC3 | A |
| UniRef90-G1NG1 | CTYFSAKFSPMNRHFLLHCTGPGVPV |
| UniRef90-R7AFLU4 | GEVKRLSPL KEQGQHKYDISPDGKYAVHTFSNAVTPP |
| UniRef90-A3XL9 | GTPKRLTPE EFEGПNTYQ\AP |
| UniRef90-UPIO00248EB99 | NKKQLTTTK MREGNHDANFSADYSLFIDTESNT |
|  | KFPCLT |
| UniRef90 UPI0002557B | GKIDEVSSR AGMHQFFAGDASGY |
| UniRef90-UPIO00440EA62 | FHRQCLTCS DFERCTFFRADFSPNQTHFTLYCLGPGV |
| UniRef90-U5EW | SKS |
|  | EKLIGTNAIFSPNFE |
|  | DRCQYYSVSFSQAKYYQLRCSGPGLPL |
| UniRef90-W4XLFO | EK TCTTCDMVEG CSYYSANFNDKSTRYILQCHGPDV |
| UniRef90-G0W800 | QEIIQVS DVKNGGVYSASFSSGSKFALLTYRGPRL |
| UniRet90_Q0UVK7 |  |
| UniRef90_A3WLP9 | HSYSVSQDAKYAEHTYSDVNVPV |
| UniRef90 O2F | EGYYAASFSIIGGGYALLTYQGPGIPW |
| UniRet90 A6L | GEVKRLSPVR DQSGQHRYMMSPSGKWA |
| UniRef90-K71XE7 |  |
| f90'D31 |  |
| UniRef90-UP10001758241 | YNVAEFSKDASH |
| UniRef90-D5H6DO | D |
|  | GYYSISLSAGAGY |
| C5DM95 | SKEGLIFSVSFSSMRFALL |
| Ref90_Q29R16 | QSPKCLTCKSGDVQQTYFSATFN DNNHIVITSLGPGIP |
| UnRef90_UPIO002886A20 | NKKQLTSS NGVHNADFSADYSILFIDTFSNTTTPY |

UniRef90 UPI00041DF04E UniRef90-J9GID4
UniRef90 A2TZS0 UniRef90_UPI000440B502 UniRef90 UPI0003337C08 UniRef90_UPI00040FD03C UniRef90_G2PKU8 UniRef90-Q16RL5 UniRef90 U2NNA1 UniRef90_UPI000413C4E6 UniRef90_UPI0003B365A9 UniRef90_R5CG79 UniRef90_G3P9X7 UniRef90_UPIO0040D165B UniRef90_E6X4E5 UniRef90-H1Q311
UniRef90 C3JCZ5 UniRef90_Q6PG25 UniRef90-UPI00036C7FD7 UniRef90_E9FZG6 UniRef90_G5GA54 UniRef90 - D6WJ57 UniRef90_W1QLF8 UniRef90_E4TNQ6 UniRef90-UPI00041A11E9 UniRef90_H2SXB4 UniRef90-H2UNZ3 UniRef90 Z4X1S5 UniRef90_I3YJR8 UniRef90-IOK3J6 UniRef90_T1DG95 UniRef90_F6GDA9 UniRef90_Q7PSF9
UniRef90 V8C347 UniRef90-M5G6P7 UniRef90_L8JYJ9
UniRef90_R7JIM1 UniRef90-G2Q5V6 UniRef90_K2S0L3 UniRef90_G5AKB6 UniRef90_I4AH32 UniRef90_R7SPE6 UniRef90-R5Q3M4
UniRef90 H0ZN40 UniRef90_UPI00047914F3 UniRef90_UPI0003735FFF UniRef90_UPI0003800974 UniRef90_A9DK52 UniRef90 UPI00029DBA7C UniRef90_D1VX34 UniRef90_W7HP94 UniRef90-UPI00016C4A2E UniRef90_V5FYP0 UniRef90_A0A031I7U3 UniRef90_R7HKY9 UniRef90_A1ZWZ0 UniRef90_UPI0003135D79 UniRef90_C4JHY5 UniRef90_B9WHL2 UniRef90_B6HFS8 UniRef90_A0A058ZAC3
UniRef90_G1NIG1 UniRef90-K1L125 UniRef90_R7AFU4 UniRef90-UPI000248EB99 UniRef90_UPI000258E898 UniRef90_W6MK00 UniRef90_UPI0002557B1E UniRef90_UPI000440EA62 UniRef90_U5EWK1 UniRef90_H1GSM8
UniRef90 L8IGB9 UniRef90_R5YZY2 UniRef90-W4XLF0 UniRef90-Q0UVK7 UniRef90_A3WLP9 UniRef90_Q2HF90 UniRef90 R6W1K0 UniRef90_A6L715 UniRef90_K7IXE7 UniRef90_D3IAG7 UniRef90_UPIO001758241 UniRef90_D5H6D0 UniRef90_C5P334 UniRef90_C5DM95 UniRef90_Q29R16 UniRef90_UPI0002886A20

Y T L N E A K S G K Q|L QVI IE D N K AlL A S S LK S Y VT T L C D N N GK QL A MMVD NAELKEKV I Y S L Y S A E GE MLL KVVVKDNAELLKE E L A D Y K V A I Y S T Q D T Q KL I DI E L N L N L WR TV N S M Q V TVHST ID NKKLFDLETNEHVQKAI NDRQ



 V Y S T Y DNDGK KL A S L DDNN QL K Q K L A A YK V T V V H S T K D P P S R Y V I L E E D N S P L S K A L E D


ETTLKDNRGTTLHTLVDNAKLKKELANY SVI K E A A T D R EVV F L V T N N DVLLR D R L A Q VT TLLR D G N GK T L S T L L D N K E L K K K V A S $V$ Y T TARNN G G K V VI A T N NV D N A E L L K E K T K K K
 K I E L L R D A S G K L V
 QQIVQVDDEDFDYVLTENPRLNDTLS QYE VTAVYAT GNKP LRVLEDNQKL QQRL GEYR RVVE C D GE G NPVVRLLAA D S K A L R D E L A QV E L R D V S G K L I K T L E D N A R V R D F V S K A EMWS F A N GKPVVK TLE N S ELQTR L E G T H V
 Q V E L W W S K G Q M L K K F E E N K A V
 QKVVSTPSNPREYVVEENQDLLAERAKKHE

 QRVIHVVGDHTF DYVVSENPQLVDTLATYE
 Y T L H I S L L S G K K V K Dil LD N T A L S Q K L E G Y E QVELRDTKGQLI KALETNKRVWDYIAN $\square S$ LV E S K S G K DL G VI V E N T QL K E K L YTLHLAK N GKLVKEI KNNASVKAKLANYK VTV HNT T DK K K MF DL ETNE HVKK A I N DR Q



 Q A V K S TP S N E M S Y TII E E N K G L A Q MV K D V T M I D L T T Q A P V R V L A R N A A L A A D E V A | $T$ | $S$ | $L$ | $F$ | $T$ | $S$ | $K$ | $G$ | $K$ | $E$ | $V$ | $R$ | $E$ | $E$ | $A$ | $N$ | $R$ | $E$ | $Y$ | $A$ | $D$ | $R$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |



 VSVHSTSSDTGKFYI LENNAVLKEAV I SLIS LP K HE S I RVLE A NEILCYNK I E MV A L P S H K T L S V I E D N E K K L A Q Y Q

 QKLLDDLKT GS E QLLLES S QKLAANTL QVSLH AVDDGKRVTWLQENK
V T I H S T K D P S R Y T VVVE D N S L L A
1 D L WN T T N N K H L L MV WE S N S D L
 Y TLHNSNNDK
$V \mathrm{~V}$ ALLNDVKRKRVRVLEDNA
QTAGLNSIDDSVNYTVLVVNSGVKEALABE


 $V$ IMV S F P A HK Sil R L I T D N A K A K E Q Y K A L I T I HN R N S T KVYA W ESSN DAVVA E LIIA E V F T $\quad$ R D N Q G K V L S T P $\square$ N N E K L K N KI S N Y




## UniRef90 B4RH88

 UniRef90 R9XFT1 UniRef90-W5LH02 UniRef90-C7M434 UniRef90_UPI000362DF33 UniRef90_V2WHP2 UniRef90-E3QKD2 UniRef90-UPI0004407CF5 UniRef90_UPI0003B50161 UniRef90-W0T6U8 UniRef90_L8G0Y6 UniRef90 J6IG17 UniRef90-A0A023EZT7 UniRef90_E3L279 UniRef90-Q6CNM1 UniRef90-UPI000363CE67 UniRef90-X8IYP2 UniRef90-J4KMI8 UniRef90-A0A023XY14 UniRef90_Q4S5X0 UniRef90-F7NW69 UniRef90-UPIO0040D6522 UniRef90- T1PEM9 UniRef90_UPIO00370EA02 UniRef90-B2A951 UniRef90-B0T5W4 UniRef90-Q16EL4 UniRef90_UPI000329D38B UniRef90-UPI0004545AB4 UniRef90_G9N897 UniRef90_G6D1G6 UniRef90_E1SV19 UniRef90-F2IGT9 UniRef90-UPIO003EDB6C9 UniRef90-W0RLW3 UniRef90-UPI00030908FC UniRef90-R7UD07 UniRef90-U1K3E1 UniRef90_UPI0004652F6A UniRef90-H2AVD4 UniRef90_G3NPX4 UniRef90-C7YYG9 UniRef90_UPI0003722D0F UniRef90_D6WS52 UniRef90-I1DV35 UniRef90-Q2M169 UniRef90-S6F2W4 UniRef90_E9ED72UniRef90_UPI0003A27819 UniRef90_UPI0004790FE4 UniRef90-B8MTH6 UniRef90-CONUQ8 UniRef90-LOFTZ3 UniRef90_UPIO0034AF0C3 UniRef90_Q6FPV7 UniRef90-Q487B7 UniRef90_UPI0004763C87 UniRef90_G8BC32 UniRef90-B4LF51 UniRef90_UPI0003891625 UniRef90-D2UGG6 UniRef90-G2XJH4
UniRef90_UPIO003634DC4
UniRef90-Q4S309
UniRef90-H1 XZM7
UniRef90-A0A023NX81
UniRef90_UPI0003B480FD
UniRef90-K2PSG4
UniRef90-H2Y8A0
UniRef90_UPI000299E9CF
UniRef90-B4NM27
UniRef90-E6ZS40
UniRef90-Q6F317
UniRef90_F8Q4L4
UniRef90_UPI0003A61BD8
UniRef90-UPIO002247153
UniRef90_UPI00047D3057
UniRef90_UP1000472ACF9
UniRef90_UPI00045EC58A
UniRef90_S2IU36
UniRef90-K7JAQ2
UniRef90-11BIIO
UniRef90-UPI00042C681A
UniRef90-J2D810
UniRef90_UPI0003C369B0
UniRef90-B2WC36
UniRef90_UPI0003FBF991
UniRef90_UPIO0035FA48F
UniRef90-A7UT73
UniRef90-UPI0003B3B8A4
UniRef90-T1ERH7
UniRef90_E2ND19




K
K K LI I T L K Q
K Q




KALTVERIFEPSLSGHSPDFEWSADGQQLAYRERSLWAM


$R S L S F S P D G S R V T Y L K G D L W Q Y$ $K$ LTLEALLSG PS LVKPK DSPDGTRVTFLRGDLWAY KKPWSLTEALSASGA DRSSNVTWITDNE LYYTSTDRIHKF K QVTLDQVMGSYWRAESHSIASWIEDGLRLIGKDKDFLVAVA $K L T P E R V F D P S L S P T A K G V A L S P D G K R V T Y N V Q D L W A A$ KVPWELSSEALSAS GRLRGFNGSWUNEXEEVYRNQGDYVKYY


#### Abstract

K PVTLE QLYDRYWSAKHKSПSWDADGLLLERGKDYLVVQ KTFTLEELLQHEFFPDRVAVQWISDDTEYI DAEPDSVNKY  QKLSVESUWSGEFYAKR $I$ GFTALSDGQSFTKIVEELKKF 


K LTLEADTGSKSGPTLMKPKVAPDGSRVTFLRGDLWEY K RVTLDQVQSGFWRPTSHTFSWIPGPEQEARGKDFLVVE KLTLA RVFSPDLSS QPRGVRLSPDGTLLTKERTDLWAR

 KKKVTVEDLESEDFKIHDPEAKWISDKEFIYREQGSVILQ QE K L T L L E R V F S P D L A G P L P R V K L S P D G K L V T K E R L D L W K K
 RRMKLDEFLQKD ITP QRLPSVWINNQK FVFQDDGGL AVF Q Q P L L $\quad$ L E A V F G G S P S L

UniRef90 B4RH88 UniRef90_R9XFT1
UniRef90_W5LH02 UniRef90-C7M434 UniRef90-UPIO00362DF33 UniRef90-V2WHP2 UniRef90-E3QKD2 UniRef90_UPI0004407CF5 UniRef90-UPI0003B50161 UniRef90-W0T6U8 UniRef90-L8GOY6 UniRef90-J6IG17 UniRef90-A0A023EZT7 UniRef90-E3L279 UniRef90-Q6CNM1 UniRef90-UPIO00363CE67 UniRef90-X8IYP2

## UniRef90-J4KMI8

UniRef90_A0A023XY14 UniRef90-Q4S5X0 UniRef90-F7NW69 UniRef90-UPI00040D6522 UniRef90-T1PEM9 UniRef90-UPIO00370EA02 UniRef90-B2A951
UniRef90-B0T5W4
UniRef90-Q16EL4
UniRef90_UPI000329D38B UniRef90_UPIO004545AB4 UniRef90_G9N897 UniRef90-G6D1G6 UniRef90-E1SV19 UniRef90 F2IGT9 UniRef90-UPIO003EDB6C9 UniRef90-W0RLW3 UniRef90_UPIO0030908FC UniRef90_R7UD07 UniRef90_U1K3E1 UniRef90_UPI0004652F6A UniRef90-H2AVD4 UniRef90-G3NPX4 UniRef90-C7YYG9 UniRef90-UPIO003722DOF UniRef90_D6WS52 UniRef90_I1DV35
UniRef90_Q2M169 UniRef90-S6F2W4 UniRef90-E9ED72
UniRef90_UPI0003A27819 UniRef90_UPIO004790FE4 UniRef90-B8MTH6 UniRef90_CONUQ8
UniRef90 LOFTZ3 UniRef90_LOFTZ3
UniRef90_UPIO003 UniRef90_Q6FPV7
UniRef90 Q487B7
UniRef90_Q487B7
UniRef90_UPI0004763C87
UniRef90-G8BC32
UniRef90-B4LF51
UniRef90_B4LF51
UniRef90_UP10003891625
UniRef90-D2UGG6
UniRef90-G2XJH4
UniRef90_UPIOO03634DC4
UniRef90-Q4S309
UniRef90-H1XZM7
UniRef90-A0A023NX81
UniRef90_UPIO003B480FD
UniRef90_K2PSG4
UniRef90-H2Y8A0
UniRef90-UP1000299E9CF
UniRef90-B4NM27
UniRef90-E6ZS40
UniRef90-Q6F317
UniRef90-F8Q4L4
UniRef90_UPI0003A61BD8
UniRef90_UPIO002247153
UniRef90_UPI00047D3057
UniRef90_UPI000472ACF9
UniRef90_UP1000472ACF9
UniRef90_UPI00045EC58A
UniRef90-S2lU36
UniRef90_K7JAQ2
UniRef90-I1BIIO
UniRef90_UPI00042C681A
UniRef90-J2D810
UniRef90_UPIO003C369B0
UniRef90-B2WC36
UniRef90_UPIO003FBF991
UniRef90_UPIO0035FA48F
UniRef90-A7UT73
UniRef90_UPIO003B3B8A4
UniRef90-T1ERH7
UniRef90-E2ND19
 DFDESYTRELFRGNTHEGVGYVVDAFEAAPDLSHGLVRTN



 DVASGQTRLLVDSKQRTAALSGTVAYQWSADGHTLLEPLGG
 NFATLQKEKTLIDTKNYPQUQRINSYTFNQQEDKILIATN NARTNKSR\|ILSSDVEEDLKASHYELSADHRYLMLAHN



 Q $\square$ DTGKHSLLVDSERLRLFASGIVKYQVSADKRFILLAYN D I A S GTNKRLVDADDVLPALSGUVDYQWSPDGRSLLEPLG NAATGEDSIFVTSD FLE ITYKTGSSFTLSPDNTKILVRYG




DVRSAKSRTLMKDANFEYAGQTYTPQWLSPDQKRVLIGVS DAIT DTHSTI LDKKELLNM SQFSVSSFSNDQKYVLLVLS HIGDNAHRLLVDADTLHQYGSGDMEYRWSDDGQALLEFLIA QFKDGTTLVNLSDDQFEGKTDEFDDVNLSKSGKWLLDQSN
 $D A V T G Q T T V L V E A R A A D R R P D A D E E D E L S P D E R K A L D F H N$
$D V A S G Q T R M L V D S S V V L P S D S G U V D Y Q W S P D G K A L L E P L D G$ NADQKSVQLI MDNSTFRELNS LL YF YSPDGKYiLLA YD NLKDNTNRLLVDSERQRIFGRGULEYKWSKDGKALLEPRN H A S GQTRLLVDSSVVLPGEEGIVVYQWAPDARTLLFPLG K SVTDQAEVLFHGRTHDGKNFTVDEIIPSPDVKQLLIRTQ NAETNDASLYLSNSTFAQV DATDYMLSGDYRYI AFESN
 HASNLSVRTLMSNQTFLRLNPA H $\square K D G K H S L L V D R E R L R L G A S G \square I S Y S W S K N S D A L L E P D N$ R F QLS A DQRY LLLA QN
 NSDDGYEVRSVFDKDYKNANYSVDSLVASPNLEKLL RTK
 RPKDNSTRMLVDSRKLEPQGEQLSDYQWSPDGKQLLEPI G QNETDDGGILMESGTVEANGKYLSETWPSPNFKSVLVAVD
 NLKDNSNRMLVDSERQRDFGRGILEYTWSKDGQALLEFPLDN




D $\$ A S G Q T RLLVDSKLVLPGAETLS DYQWAPDARALLFPDG

DTRDASKQTLVVSSAMDTPQGGVRRFAFSGDGKKILINTN QLKDNKTRLLVDSKKWEPNGHGIVSYQWSPDGKQLLFPDG
 A SKNNNKSTFLSSQALTPIGADVEAFSLSDDQSKVLI FTN

 DVTGGKS LMMVEGKNVVDGRGKMLTSFKFSPDVRWVLFFTT DI A S GQTRLLVDSSVVLPALSGIVDYQWSPDGKALLFPDG DLKTNTTTATLVTMKDVKDENGQYSSWKDSADMKYMLIKAD NLKNKSTHRLVDSKTLVPADKGVLNYSWSPDGKQLLVPGA

 DVTTKQSEDTAKDELFDDV NVESFELSHDAQYLLLKTN
DVTTKQSEDIAKDEDFDDV
SI EDGKSQVFVKAK
NVETNTSTVLI EGKK DES $\square$ RA VRYE $\quad$ VSPDREYALFSYN DTSTGAERMLVDSKKTGSGAEGDTSYDWSPDGKTVLVPYND NVKTKTKTTLMMDEAQQYVL DI RNKKKTKLMQKSGFNVNGYFVRPVEVWPSKDF ELPAF DKTVIASKEKLTPAGESIRNFFFSNDNTQVLIYNN
 DTATNSVATLVTNHTMRQDNGVKGYHCSHDLKYVLFKHN

 UniRef90_UPI0004407CF5 UniRef90-WOT6U8 UniRef90-L8G0Y6 UniRef90 J6IG17 UniRef90_A0A023EZT7 UniRef90-E3L279 UniRef90-Q6CNM1 UniRef90_UPI000363CE67 UniRef90-X8IYP2 UniRef90_J4KMI8
UniRef90-A0A023XY14
UniRef90-Q4S5X0
UniRef90-F7NW69
UniRef90-UPI00040D6522
UniRef90- T1PEM9
UniRef90_UPIO00370EA02
UniRef90-B2A951
UniRef90-B0T5W4
UniRef90-Q16EL4
UniRef90_UPI000329D38B
UniRef90-UPI0004545AB4
UniRef90-G9N897
UniRef90_G6D1G6
UniRef90_E1SV19
UniRef90_F2IGT9
UniRef90_UPIO003EDB6C9
UniRef90_W0RLW3
UniRef90_UPI00030908FC
UniRef90-R7UD07
UniRef90_U1K3E1
UniRef90_UPI0004652F6A
UniRef90-H2AVD4
UniRef90-G3NPX4
UniRef90-C7YYG9
UniRef90_UPIO003722D0F
UniRef90_D6WS52
UniRef90-I1DV35
UniRef90-Q2M169
UniRef90-S6F2W4
UniRef90_E9ED72
UniRef90-E9ED72
UniRef90_UPIO003A27819
UniRef90_UPIO004790FE4
UniRef90-B8MTH6
UniRef90-CONUQ8
UniRef90_LOFTZ3
UniRef90_UPIO0034AF0C3
UniRef90-Q6FPV7
UniRef90-Q487B7
UniRef90_UPI0004763C87
UniRef90-G8BC32
UniRef90-B4LF51
UniRef90-UPIO003891625
UniRef90_D2UGG6
UniRef90-G2XJH4
UniRef90_UPIOO03634DC4
UniRef90-Q4S309
UniRef90_H1XZM7
UniRef90_A0A023NX81
UniRef90_UPIO003B480FD
UniRef90-K2PSG4
UniRef90-H2Y8A0
UniRef90-UPIO00299E9CF
UniRef90-B4NM27
UniRef90-E6ZS40
UniRef90_Q6F317
UniRef90-G8Q4L4
UniRef90_UPI0003A61BD8
UniRef90-UPI0002247153
UniRef90_UPIO0047D3057
UniRef90_UPIO00472ACF9
UniRef90_UP1000472ACF9
UniRef90_UP100045EC58A
UniRef90_S2IU36
UniRef90-K7JAQ2
UniRef90-I1BIIO
UniRef90_UPI00042C681A
UniRef90-J2D810
UniRef90_UPIO003C369B0
UniRef90-B2WC36
UniRef90_UPI0003FBF991
UniRef90_UPI00035FA48F
UniRef90-UPIO0035FA48F
UniRef90-A7UT73
UniRef90_UPIO003B3B8A4
UniRef90-T1ERH7
UniRef90_E2ND19V VD Y E WD S Q ${ }^{90}$

90

100

110


TEKNWRHSSF VK S NWR HS SFA TYFVYD DGKFYEDGEQ KES IFRHSFYARYWI KES FRRRSFSAD F Y VF DLKK K QE LDS K L T D

 TEKGWRHSTFGTYFVYENDSFH K DGDSEI S I A K WS P
 KEKNWRHSYTAVYY I LDDVET QAVVEPDIDFEDDDQLAT WS P
$\qquad$
 V E E I F R H S Y $\square$ Y DLSK SGK LE A N WR H S F Y A GDLVFDIATRTSISSIHNGE KLQYCAWS P A S Y WV
 S K
A K HGEGF ATDAK LDS P

QESVWRHSFTA\|Y F




 SVRVWRSNTRGVYHVVDFDTKMVRPDAVDPDLQMFAKFSP GELYL Y Y DLAREGREAVRKLTSGEGFAT DPKLSP VE Y I Y R H S F L A K Y LL Y N K D A K N P K QED WD GK K L Q F A GWA K | $G B$ | $Y$ | $Y$ |
| :--- | :--- | :--- |
| $G E$ | $Y$ | $Y$ | Y E DA S G K S K K L T E T E A F E T D A R F S P

 FTKKWRHSYTASYSIVYRENSTFVFPSTLPTVVQYFSTAP RKKNWRHSSFSAD IV F V LDDVKTQEAAEPDVVPDQVVDI QQLAS WS P
 GDLLYY


 AVSNWRYSFTATYWLFDVKTQTA QPLDPDAPKIQLASWSP KKQNWRHSFTGKYWLEDVDTQTGQPLLDPQDQRIQLA S WS P SSRVVWRANTKGDYWULDLETEEGRQVVRPASSLMMFAKFSA GDLYY
 G D I Y Y S Q KVWR S K S R G D Y WL F D F S T N K L S QL GVA D S QLM FAK F S P
 YKKNFRYSFLAAQYDIVYNLSSNSIKMLTNEPAYLSMVQWSP

GELY L
$Y D L S K T G S A$
$A \mathrm{~A}$ K QRNWRHSFTALY WVFDVESQSAEPLDHPEERVQLATWNA G DLY L A TLD G K VRRLLTATP G GELDNPIISP T RK WR HS FTATYWLY DMHSKKFLDNSD@P PEVQYFSWAP TRKVWRYDTRGDYWVYDLAAKTLKQVNRPESSLMFAKLSP EAPARFKP GK L Y V Y S L A T P DVA P KLD T GDNVIDP K I S P



 GELY F HLK QWRWSSFGNYYVHNLETKT TYPM DPPPPVTAYATWSP VKPVFRHTFTAHYTVVDVTNDHHTPLRIQQTRLQHAAWLG QGDYWVLDLQTKELKQAGKPESSLLRFAK LLG TRRRVWRYDTRGGY WV A DLLQ GK TLLM QL G K P E S S L M M A A K F S P TK RVWRLDT Q G D Y WVLDDMESK KLLQQI GKPESSSLRFAKLSP


 VE P IV Q H S Y T GYYV L S K I P P H Q S L D D P P E V V S N A K L Q Q Y A G WG P

 VK K H H RLS F T A L Y TVVYDVD H HMPVVRLKESPKRLQHA S WA G

UniRef90_B4RH88 UniRef90_R9XFT1
UniRef90_W5LH02 UniRef90-C7M434 UniRef90-UPIO00362DF33 UniRef90_V2WHP2
UniRef90- E3QKD2 UniRef90_E3QKD2
UniRef90_UPIO004407CF5 UniRef90-UPIO003B50161 UniRef90-W0T6U8 UniRef90-L8GOY6 UniRef90-J6IG17 UniRef90-A0A023EZT7 UniRef90-E3L279 UniRef90-Q6CNM1 UniRef90_UPI000363CE67 UniRef90_X8IYP2

## UniRef90_J4KMI8

UniRef90_A0A023XY14 UniRef90_Q4S5X0 UniRef90_F7NW69 UniRef90_UPI00040D6522 UniRef90-T1PEM9 UniRef90_UPI000370EA02 UniRef90_B2A951
UniRef90_B0T5W4
UniRef90_Q16EL4
UniRef90_UPIO00329D38B UniRef90_UPI0004545AB4 UniRef90_G9N897 UniRef90_G6D1G6 UniRef90_E1SV19 UniRef90_F2IGT9

## K

 UniRef90_UPI0003EDB6C9 UniRef90_W0RLW3 UniRef90_UPIO0030908FC UniRef90_R7UD07UniRef90_U1K3E1
UniRef90_UPI0004652F6A UniRef90_H2AVD4 UniRef90_G3NPX4 UniRef90_C7YYG9 UniRef90_UPIO003722D0F UniRef90_D6WS52 UniRef90_I1DV35
UniRef90_Q2M169 UniRef90-S6F2W4 UniRef90_E9ED72
UniRef90_UPI0003A27819 UniRef90_UPI0004790FE4 UniRef90-B8MTH6 UniRef90_CONUQ8
UniRef90 LOFTZ3 UniRef90_UPI00034AF0C3 UniRef90_Q6FPV7 UniRef90_Q487B7
UniRef90_UPIO004763C87
UniRef90_G8BC32
UniRef90-B4LF51
UniRef90_UPI0003891625
UniRef90_D2UGG6
UniRef90_G2XJH4
UniRef90_UPIO003634DC4
UniRef90_Q4S309
UniRef90_H1XZM7
UniRef90-A0A023NX81
UniRef90_UPIO003B480FD
UniRef90_K2PSG4
UniRef90_H2Y8A0
UniRef90_UPI000299E9CF
UniRef90_B4NM27
UniRef90_E6ZS40
UniRef90_Q6F3I7
UniRef90_F8Q4L4
UniRef90_UPI0003A61BD8
UniRef90_UPI0002247153
UniRef90_UPI00047D3057
UniRef90_UPI000472ACF9
UniRef90_UP1000472ACF9
UniRef90_S2IU36
UniRef90_K7JAQ2
UniRef90_I1BIIO
UniRef90_UPI00042C681A
UniRef90-J2D8I0
UniRef90_UPIO003C369B0
UniRef90_B2WC36
UniRef90_UPI0003FBF991
UniRef90_UPIO0035FA48F
UniRef90_A7UT73
UniRef90_UPI0003B3B8A4
UniRef90-T1ERH7

UniRef90_E2ND19




160





 K G GFVVSFVRERNLWVDDLAS GKETQLTKDAS A TIIANGVA N S K DIV V Y V K K H D I Y L Y S CE S F K T V




 Q S D A I A FTRDNNMYI RHDK GSKQIVQQITKDGGPEYFY GI P K G GFVSFVRARNLWVIDLASGRQIQLTRDGSDTMGNGVA

 DK D R L G Y V Y N N N V F I M H Y D D S DE


 S K N R L A Y I Y E N NVVHV H Y EN D E E L Q L T S D GVVT G V I Y N G DP Q G Q QL L Y I F E N NI Y Y Q P D DK S S S L R L T S S GK E G I V F N Gi A
D K G GYV S F V R D Q NLYVVD LAS GEERALTRDGG GAI KNGMA


K $\begin{array}{ll}\text { K S A V S } & F \\ \text { D } \\ \text { D A }\end{array}$










 K H N I Y I F E N N I Y Y Q P DVVK S S S L R L T S S G K E GI I F N G I A $K G G Y V S F V R G R N L W V I D L A S G Q Q Y P L T H D G S \quad Q T I G N G V A$ QSDAIVFTRSNNLFLRKLADDKVIPITTDGGPEYFY GIP






 K G G F V S F I R D R N L WA I D L A S G K EVV QL T R D G S D T I G N GV A

 D A S QI A Y V S E F NL FVVENLAN GQDT QLT KDGNR KLDNGTF


 $K$ G Q Q L I F I F E N N I Y Y C A HVVGK Q A I R V V V S T G K E G V I Y N G L







UniRef90_B4RH88 UniRef90_R9XFT1
UniRef90_W5LH02 UniRef90-C7M434 UniRef90_UPI000362DF33 UniRef90-V2WHP2 UniRef90-E3QKD2 UniRef90_UPI0004407CF5 UniRef90-UPI0003B50161 UniRef90-W0T6U8 UniRef90_L8G0Y6 UniRef90-J6IG17 UniRef90-A0A023EZT7 UniRef90_E3L279 UniRef90-Q6CNM1 UniRef90_UPI000363CE67 UniRef90-X8IYP2

## UniRef90-J4KMI8

UniRef90-A0A023XY14 UniRef90_Q4S5X0 UniRef90-F7NW69 UniRef90_UPI00040D6522 UniRef90-T1PEM9 UniRef90_UPI000370EA02 UniRef90-B2A951 UniRef90_B0T5W4 UniRef90_Q16EL4 UniRef90_UPI000329D38B UniRef90-UPI0004545AB4 UniRef90-G9N897 UniRef90_G6D1G6 UniRef90-E1SV19 UniRef90-F2IGT9 UniRef90-UPIO003EDB6C9 UniRef90-W0RLW3 UniRef90_UPIO0030908FC UniRef90_R7UD07 UniRef90_U1K3E1 UniRef90_UPI0004652F6A UniRef90-H2AVD4 UniRef90-G3NPX4 UniRef90-C7YYG9 UniRef90_UPIO003722D0F UniRef90_D6WS52 UniRef90_I1DV35
UniRef90_Q2M169 UniRef90-S6F2W4 UniRef90-E9ED72 UniRef90_UPI0003A27819 UniRef90_UPIO004790FE4 UniRef90-B8MTH6 UniRef90_CONUQ8
UniRef90 LOFTZ3 UniRef90_LOFTZ3 UniRef90_UPIO0034AF0C3 UniRef90_Q6FPV7
UniRef90 Q487B7 UniRef90_UPI0004763C87 UniRef90-G8BC32 UniRef90-B4LF51 UniRef90_UPI0003891625 UniRef90-D2UGG6 UniRef90-G2XJH4 UniRef90_UPIO003634DC4 UniRef90-Q4S309 UniRef90-H1XZM7 UniRef90-A0A023NX81 UniRef90_UPIO003B480FD UniRef90_K2PSG4 UniRef90-H2Y8A0 UniRef90_UPI000299E9CF UniRef90-B4NM27 UniRef90_E6ZS40 UniRef90_Q6F317 UniRef90_F8Q4L4 UniRef90_UPI0003A61BD8 UniRef90-UPI0002247153 UniRef90_UPIO0047D3057 UniRef90_UPIO0045EC58A UniRef90-S2IU36 UniRef90_K7JAQ2 UniRef90-I1BIIO UniRef90_UPI00042C681A UniRef90-J2D810 UniRef90_UPI0003C369B0 UniRef90-B2WC36 UniRef90_UPI0003FBF991 UniRef90_UPIO0035FA48F UniRef90-A7UT73 UniRef90_UPI0003B3B8A4 UniRef90-T1ERH7

Uniog

UniRef90_B4RH88 UniRef90_R9XFT1
UniRef90_W5LH02 UniRef90-C7M434 UniRef90-UPI000362DF33 UniRef90-V2WHP2
UniRef90-E3QKD2 UniRef90_UPI0004407CF5 UniRef90_UPI0003B50161 UniRef90-W0T6U8 UniRef90_L8G0Y6 UniRef90-J6IG17 UniRef90-A0AO23EZT7 UniRef90_E3L279 UniRef90-Q6CNM1 UniRef90-UPIO00363CE67 UniRef90-X8IYP2 UniRef90-J4KMI8
UniRef90-A0A023XY14
UniRef90_Q4S5X0
UniRef90-F7NW69
UniRef90-UPI00040D6522
UniRef90- T1PEM9
UniRef90_UPI000370EA02
UniRef90-B2A951
UniRef90-B0T5W4
UniRef90_Q16EL4
UniRef90_UPI000329D38B
UniRef90_UPI0004545AB4
UniRef90- G9N897
UniRef90_G6D1G6
UniRef90_E1SV19
UniRef90-F2IGT9
UniRef90-UPIO003EDB6C9
UniRef90-W0RLW3
UniRef90_UPI00030908FC
UniRef90-R7UD07
UniRef90_U1K3E1
UniRef90_UPIO004652F6A
UniRef90-H2AVD4
UniRef90_G3NPX4
UniRef90_C7YYG9
UniRef90_UPIO003722D0F
UniRef90_D6WS52
UniRef90-I1DV35
UniRef90-Q2M169
UniRef90-S6F2W4
UniRef90-E9ED72
UniRef90_UPI0003A27819
UniRef90_UPIO004790FE4
UniRef90-B8MTH6
UniRef90-CONUQ8
UniRef90_LOFTZ3
UniRef90_UPIO0034AF0C3
UniRef90_Q6FPV7
UniRef90_Q487B7
UniRef90_UPI0004763C87
UniRef90-G8BC32
UniRef90-B4LF51
UniRef90_UPIOOO3891625
UniRef90-D2UGG6
UniRef90-G2XJH4
UniRef90_UPIO003634DC4
UniRef90_Q4S309
UniRef90-H1 XZM7
UniRef90-A0A023NX81
UniRef90_UPIO003B480FD
UniRef90_K2PSG4
UniRef90-H2Y8A0
UniRef90-UPI000299E9CF
UniRef90-B4NM27
UniRef90-E6ZS40
UniRef90_Q6F317
UniRef90-F8Q4L4
UniRef90_UPI0003A61BD8
UniRef90_UPIO002247153
UniRef90_UPI00047D3057
UniRef90_UPI000472ACF9
UniRef90_UPI000472ACF9
UniRef90_ UPI00045EC58A
UniRef90-S2IU36
UniRef90_K7JAQ2
UniRef90-I1BIIO
UniRef90_UPI00042C681A
UniRef90-J2D810
UniRef90_UPI0003C369B0
UniRef90-B2WC36
UniRef90_UPIO003FBF991
UniRef90_UPI00035FA48F
UniRef90-A7UT73
UniRef90_UPI0003B3B8A4
UniRef90-T1ERH7
UniRef90_E2ND19

 LVNTGDTSATVYTQTNTTKEYYDTMVKWATSTKLAVNWLNRA $\bar{E} \mathrm{~V}$ D G PLKAYY DRDQWTNDPHKLTVQTLNRH

 VTEHLSRDTWSSRRSVNDSVIMDVAWDGADDLLVKEVNRG

 $D V K T T D E F A D D T R D I T E V I W A \quad G S T G K A I V K E T N R E$


 QDSRMDTGGDSDVYVPRVRWMPDSKHLALE RMS VQNATTVLAWDKQGKPEDQIISEVAWVGNETVVVREVGRE APKADAAPRWVNRGADPDLVAARVDWRDPDKLVKKTNRV AHTLEMLPPDSFRTRDSYISMVTWDSSTRLAARWLNRD WLDLGKEQD P Q C A RVNW SKTASLLTYQWQS $P R W D D L G N D D D Y$ D VNPTYVT $\square K A P V N V V S N D H I L Q N V A W T H D G K V L I T W L N R R$

 FELPAPEAIVTDDHILGTVNWI GNDLGAI WMNRR $P V N \square T A P V$ V $T L E L M P P D I F K S R E Y Y I T M V K W V S N T R T V V R W L N R P$ SVTTGDEFPDDDR:INSLIWA WLDLGKQ G A MLGDF EYLPRFQWSPTKNEVFVSTLNR
$W \square A V G \quad P D T G Q Y \square A R M E W V D V D S V A V Q R L V R K$ A GARPRWDD LGKEQD DY LDPRVDWR DPQRLTFQRQS RGAHKELLPPTDEDGEQDFYLNTVT WQDNDHVLVDWSNRP WIDDGG DDKD IY I ARANWLKDNKTSYQWQNRS
 $T$ TVVAPASVASGDHMLCSVTWVTDQRVAAQWVTRK
 KI KTVIPPVALANVEYYFTSVSWDS DTEDSVVWLNRP WIP LG GDFITTMPVPPALNTETDYYVTVVSWVDDAHVLSDWMNRD SISAPDEFPDKDRITSNVLWA GNKVLLKQSNRV
 WVDLGKD GGFADDDYLVRVNWLTDGKHLS YQRMP SVNVS GGGFADDDRLIGEVVWASETKVLVKEFNRE SVVD WVPDP

 DDSTYPGNISSHHESDSTLITEVTWDSESSLVTKFSDRS
 GNSEELLVQHLN N E F L T S M P V P S A L


 WLKVP WIDLGKD T D $\quad$ Y $\quad$ TT RVK TTWADLSDCVPSEEHYLA $G D P A Q Q W A P D G S G L V Q Y \square P R D$ $W \square P \square P \quad G D P V Q H Y L P G M Q W V S E D L L L I Q Q M N R K$

 TRSGASARPRWQYTLHNPMSSKTEVKWVSDDELLVRETBRY


 WMDIP WLN I P

GDPQNTYLPRMEWSGKPDELVVQQLNRK TYAN $\square M E S S N T N D F A E D D R L I D D V T W A T D S H T Q F K Q T N R \|$ DVI

QVDLGA D $K$ K VVYLARVDWSKDGKTVLVVQRES
 SVE IVED DFRDNNRLITE IVWA GKTKQVLVRETNRE A NTKWMNDPTDPVLQSYVPRMEWAANSHELIVQHLNRK
 R K WE V I R P A A L E G QE H Y LI SA S WV G NLLN E HVVSVVVWMT R S $Q \mathrm{~V} D \mathrm{~L}$ A D $K D \ Y L A R V N W S P D A Q T L Y V Q R Q N$ Y L N A G D P T D R Y F T N 1 S WA L

|  |  |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |


320 A QVLTVALVNTDENKPFTTPRVESANGGWWEVGRTVMYDP QNNS ILTGLCEA Q ADDGRVVYFDFSSRNGVQEVQGKVTRLEDQDDRYWIDSNSW SD@MRVVLVDVVARTGKTVNTMDVGELDWFE ISHTTQF IDP ADDGVVVIHFDMEDLSIDAEVVRHLGRNGEEGDGGWDESRQS
 SDILRVVLVDVLSRSGKTVRTVNVAEDDWFEVSQKTRYIP QNEAA VQCSTDNNNCQEVLSLSERSGWV ATREKTGYFDLSQLASTQGRVVMDLDFVKFDGGWSEPGHF
 AREGHVVLFDVSKAGKVAKVRIVGENGEEGDKGWDESEQN QKHLLALVLQDVALASGKQHTLVTETSTTW
QNQSVL CVCEATTGACSEKHKVAMD DMQNRRQESFYDTYP RDQQHL ELRSVELPS GLTKVLLKEQSST WLNLDN RDQRTLEEDETDLAAGKQRTLATEHSKTW
 SDVLDRVVLVDVAARTGKAVRELDVKAIDWFEDTHKTKY IDP RDQKTLELI A YDPSTGQGKTILTETDAHWDE QNDATYQRCNVQTQACSEIVGVNE PNGWY LLYTP QNLATLQECTLEGVCREVTRLQESDGWDMMSTPKCESTYC
UniRef90_B4RH88 UniRef90_W5LH02 UniRef90_C7M434 UniRef90_UPI000362DF33 UniRef90_V2WHP2
UniRef90 E3QKD2 UniRef90-E3QKD2 UniRef90_UPI0004407CF5 UniRef90_UPI0003B50161 UniRef90-W0T6U8 UniRef90_L8GOY6 UniRef90_J6IG17 UniRef90-A0A023EZT7 UniRef90_E3L279 UniRef90_Q6CNM1 UniRef90_UPI000363CE67 UniRef90_X8IYP2

## UniRef90_J4KMI8

UniRef90_A0A023XY14 UniRef90_Q4S5X0 UniRef90_F7NW69 UniRef90_UPI00040D6522 UniRef90_T1PEM9 UniRef90_UPI000370EA02 UniRef90_B2A951
UniRef90_B0T5W4 UniRef90_Q16EL4 UniRef90_UPIO00329D38B UniRef90_UPI0004545AB4 UniRef90_G9N897 UniRef90_G6D1G6 UniRef90-E1SV19 UniRef90-F2IGT9 UniRef90_UPI0003EDB6C9 UniRef90_W0RLW3 UniRef90_UPIO0030908FC UniRef90_R7UD07 UniRef90_U1K3E1 UniRef90_UPI0004652F6A UniRef90-H2AVD4 UniRef90_G3NPX4 UniRef90_C7YYG9 UniRef90_UPI0003722D0F UniRef90_D6WS52 UniRef90_I1DV35
UniRef90_Q2M169 UniRef90-S6F2W4 UniRef90_E9ED72
UniRef90_UPI0003A27819 UniRef90_UPI0004790FE4 UniRef90_B8MTH6 UniRef90_CONUQ8 UniRef90_LOFTZ3 UniRef90_UPI00034AF0C3 UniRef90_Q6FPV7 UniRef90_Q487B7 UniRef90_UPI0004763C87 UniRef90_G8BC32 UniRef90_B4LF51 UniRef90_UPI0003891625 UniRef90_D2UGG6 UniRef90_G2XJH4 UniRef90_UPIO003634DC4 UniRef90_Q4S309
UniRef90_H1XZM7 UniRef90-A0A023NX81 UniRef90_UPI0003B480FD UniRef90_K2PSG4 UniRef90-H2Y8A0 UniRef90_UPIO00299E9CF UniRef90_B4NM27
UniRef90_E6ZS40 UniRef90_Q6F3I7 UniRef90-F8Q4L4 UniRef90_UPI0003A61BD8 UniRef90_UPI0002247153 UniRef90_UPI00047D3057
UniRef90_UPI000472ACF9 UniRef90_UPI00045EC58A UniRef90_S2IU36 UniRef90_K7JAQ2 UniRef90_I1BIIO

330
340
350
 RNDTNDRANDGYVDVIPVNGYNHLAYFSPPSASTPTILTS
 D N
V
VLQLAFTNDGA
$S F \square Y$
S E Q D IHPIPSLNA YLDVLPTKQGFNHIALVSPPSGEPKWM
 VYP T L G L D G T A Y L D L V N N S Q G Y THi A LiF S P D S S E P L F V T LHSNLNFLDANGDFLWSSARS GFEHLYLYGRDGQAKKQLTS K DKKN GRPMN GY I DLVVP DKGYNHLLVYFT



 EGPYF FRDGHRFL WSSERSGYRHLYLYD DEGRE I RQLT

 F F WV F K Q DV P L F TAAD G S L F Y T F H H I A A L S A Q T V P P R F L T S LHDALRRFLKDGSFLWSSER MCDQEESNSCLDFAYWI

 TFTYWDD D W WLQVWRLDLAT GKNLDWET R E EPVFSSRDGSKFFMTVPVKQEFHHIAMFKSEQDTVRHLTS A DPENGRPEDGYVDTVIYDGYEHDGYFTPGNNSEPDMLTS


 LE FLKDKKHFVMAESGHGRGWVSLFGRPGLKSFVTG

 L P L F F A E D K L S F Y K V M S D T R G Y K HI H L V K D L M Q R L V R S S


 GSRLAVVLLPHNNYKHLQQLSSSVSSA EQQQLEP L T E
 LSNNFRPLK DGS FLDWWSEKS GH GHL Y HVV R GSS WTA L T G ADPANGRPD DGY LDVVVHRDGYDHWGYFTPVNNSLKAPV S Q A DPSNGRPEDGY I DTVI HE GRDQLAYFTPLDNPEPLIL T K


 KNKTAGRQHDGYVDTVVENGFNHLAYFSPPDSSEYQLLTK

 ADAKNGRPHDGYVDTVIDNDGDHLAYYTPMDNPKPVYITE LS D DYRVLK D G SLLIWRSERD GYGHLY LRRSPAGGKWTQLTK A E P V F D P D G S S Y Y L V M S D A S G Y K H L H R V $\quad$ V K G K S E A V T S

 AHLTSSEPGDFFSILPSNHGSFRHLAMINYTAVCDFFFTB WLNNNQEFTITSDKDGWNHLYRI SRDGKKQTEVTK TAPFKNRNATR LAFVLPHNNYKHLQLLNANVQQLEPL TD

 FEDLRFLAKGKGFVWSSERTGRKHLYLYDMNGKLLHPIS DGDSFLLLGA VQEGAQEHFTHIVHITLTQQRIAVLS RHEFKWLNDKKEFLWFSEKD GWRHVYKI GLDGGKETLLTP VGWD W I A GGK E F L WV S E K D G WR H TY R V S R D GK K E T L I T K TYRHRFPWVSKEFVWLSEKD GWRHVYRMGLDGKEQ LVVTR


LS N N F T P L S D GSF LWWWSEK T GHGHLYHV R DGKWT A LT S KNRDGSRLALI LPQT QVDGGDYRHLCLTSSGSNKPEAI T K A DPANGRKDDGY ID T I I HEGYDH\|GYFTPGDNDKP\|VLSQ G GWDW LN NGKEFLWASEKD GWRHLYRVSRDGQKETLVTK ENDLLLVNDNAAFLDRMTETNGWRHVYEVSDEDGK QTLLSP $\square$ FS P D G D S F L FMA G $\square$ Q E H F T H I K H IT T T Q Q R M A V I S H $L S G N F R A L R D G S L L W S S E R T G F N H L Y R W K$ G $\operatorname{L}$ G GKWT QL T S


 GK Y V V T S I L H WD S S DVI F Y T A NTE Q N P E Y L H V Y A I RAA T G





UniRef90_E2ND19

## UniRef90_B4RH88 UniRef90_R9XFT1 UniRef90_W5LH02 UniRef90_C7M434 UniRef90-UPIO00362DF33 UniRef90_V2WHP2 UniRef90-E3QKD2 UniRef90_UPI0004407CF5

 UniRef90-UPIO003B50161 UniRef90-W0T6U8
## UniRef90-L8G0Y6

 UniRef90-J6IG17 UniRef90-A0A023EZT7 UniRef90-E3L279 UniRef90-Q6CNM1 UniRef90_UPI000363CE67 UniRef90-X8IYP2 UniRef90-J4KMI8UniRef90_A0A023XY14
UniRef90-Q4S5X0
UniRef90-F7NW69
UniRef90-UPI00040D6522
UniRef90-T1PEM9
UniRef90_UPI000370EA02
UniRef90-B2A951
UniRef90-B0T5W4
UniRef90_Q16EL4
UniRef90_UPI000329D38B
UniRef90_UPI0004545AB4
UniRef90-G9N897
UniRef90_G6D1G6
UniRef90-E1SV19
UniRef90 F2IGT9
UniRef90-UPIO003EDB6C9
UniRef90-W0RLW3
UniRef90_UPI00030908FC
UniRef90-R7UD07
UniRef90_U1K3E1
UniRef90_UPIO004652F6A
UniRef90-H2AVD4
UniRef90-G3NPX4
UniRef90-C7YYG9
UniRef90_UPIO003722DOF
UniRef90_D6WS52
UniRef90-I1DV35
UniRef90 Q2M169
UniRef90-Q2M169
UniRef90_S6F2W4
UniRef90-E9ED72
UniRef90_UPI0003A27819
UniRef90_UPIO004790FE4
UniRef90-B8MTH6
UniRef90-CONUQ8
UniRef90-LOFTZ3
UniRef90_UPIO0034AF0C3
UniRef90_Q6FPV7
UniRef90_Q487B7
UniRef90_UPIO004763C87
UniRef90-G8BC32
UniRef90-B4LF51
UniRef90-UPIO003891625
UniRef90_D2UGG6
UniRef90_G2XJH4
UniRef90_UPIO003634DC4
UniRef90-Q4S309
UniRef90 H1 XZM7
UniRef90_A0A023NX811
UniRef90_UPI0003B480FD
UniRef90-K2PSG4
UniRef90-H2Y8A0
UniRef90-UPIO00299E9CF
UniRef90-B4NM27
UniRef90-E6ZS40
UniRef90_Q6F317
UniRef90-G8Q4L4
UniRef90-UPI0003A61BD8
UniRef90-UPIO002247153
UniRef90_UPIO0047D3057
UniRef90_UPIO00472ACF9
UniRef90_UP1000472ACF9
UniRef90_UP100045EC58A
UniRef90_S2IU36
UniRef90-K7JAQ2
UniRef90-I1BIIIO
UniRef90_UPI00042C681A
UniRef90-J2D810
UniRef90_UPIO003C369B0
UniRef90-B2WC36
UniRef90_UPI0003FBF991
UniRef90_UPIO0035FA48F
UniRef90-A7UT73
UniRef90_UPI0003B3B8A4
UniRef90_T1ERH7
UniRef90_E2ND19
AEPRALTTP
410
420

AEPRALTP 410 A GGWWS AEVVARAGGAFVVGTFEAPQTPP ${ }^{430}$
440

##  aPRALLS

## T R

 DRDTELTAGT EVRKLTQTQ L K V H AVS

TDLKA L T $T \mathrm{D} \mathrm{V}$

VHSD
GMHNAVF

DKQALA
APHECV
SCO
SKEGYYGGSFSSGAGYVLLGYDGPAIPW ASCOWDKTECHYSGAVFSQKYSYYMQTCAGPVVPE
 GKVYAVTDERL N NGYYSASFSAGARFLLLNYLGPDVPY PKPAEPVALTDDSTLAWYSASFSPQGGYYVLNYDGPAVPW
E
LKPKTDVSEEAYYSVSFSSGAGYAL L SNRGPKVP T E FQRQCDSCNN
EAKRLTAAD
ALDEK $R L S Q A P G$
$N L I D G C H$ GMHSASF
$\qquad$ SHAVVM
CDLKDTEGELCKSAF
GKPKALT A F A G G WWT ASFAKNAS
AK K S
N
GKPNALT
TCS LLKDK
 GSEGYYD\SFSA


 G K G FNRQCLSCDLISEATGYHDAEFAPGFNYF QTSSSANTVP SCRRVTTVPMESVGTHAFTVSPNAKYAVDKCERRGRPA KTPECLTC YLAPQC GDAKRITEK E GEIVEVT ERCHVSDDPVRKTYKRVNTCKSDP
 GFTKLTK K E EAYYDASFSKGAGFVFLSYRGPKVPT RPPVCLTCTPTEPSCLYHNAIFSPNSKYYVLECLGPGDPY

## E ${ }^{\text {Q }}$ QRLTEPGFD

QNAKCLTCKLDDVEQTYF HALVLAKDGSSFI DNFSNVSTPN

 TAN APVR $\square$ SKGDGSHLAEFAPNAAFYLDTYSSADTPP DFQAMT DTSKAGYYDVSFS $\square$ GGGYALLSYEGPHIPW TALDPVTNVSESSYYDVSFSDGAGYALLNFQGPKVPW
 KEVHQVT DDSKRGVYTASFSSKTRFALDSYDGPDVPY SPEN WRQRDTKRNGFHSDNFSQTSESYY DSFSNTKTPK
 RKQKCLTCKLMDVEQNYYTADFNDNNQ IVI T SLGPGIPK
 TDMK PFTDTTHESYYDVSFSSGAGFGLDSYQGPKVPW $\begin{array}{ll}D V L T R \\ K & T \\ K & T \\ T\end{array}$
 NAK TPVRDSQGAGTHLDAEFAHDASFYVDNFSSDDTPA GKLRRLAPAELCDTPGRHAADFSADAAHF: HVHSSLNMPA
 SGRRC CDPAQCLDYFDAEFGSSSDWFLLNCLGPGVPY
 QHKKEPVA LTDVSKPGTYDASFDPKGAYYVLHYQGPDVPY F $\square P A E P T P \square T D T S S P S S Y S A S F S P E A G F Y L D S Y Q G P N V P W$ TADK PTRDTQGDGWHDSNFAGNGEVFVDTYSDPNTPP D D P R R LEPLCVTCNCTHFGASVNPELGYYVLYCEGPGLPL
 $G Q P V R V$
$G E A E M$ KPA MWEGTHDYQUSPAGKYAALYHKSNAKTPM KPKTCLTCPSDPEEHAYYSASFSPKSGYY LDOYGPGDPN


GP DK A LTAK
GWWNDAVMDGAASRVIVTRQNADQPK QTAKCLTCKLH GTSEVVE
 EEVRRTEPTC $\square$ W GEVERLT HSKGR EAGWWNGASMDGKARAMLVTRSSPTOPS


| UniRef90-B4RH88 | Q T All |
| :--- | :--- |
| Un R A D G |  |

UniRef90 R7TV60 UniRef90 M1VTT5 UniRef90－W3VSC9 UniRef90＿V5GOL2 UniRef90－B8M4E4 UniRef90－E6RG44 UniRef90 V4PGU2 UniRef90 Q088C2 UniRef90－H8L1D5 UniRet90 M7WL54 niRef90 S3BYM3 UniRef90－UPIO001FFDF77 UniRef90－M7XVT3 UniRet90 T1KU08 UniRef90－V4RDA0 UniRef90－B9TDC0 UniRef90 Q5K721 UniRef90 K4KH95 UniRef90－13м337 UniRef90－R5AS40 UniRef90 K3YQ50 UniRef90－F4S2H3 UniRef90－F4CCM9 UniRef90－R9AL51 UniRef90 QOHMI7 UniRef90－UPI0003B6E41F UniRef90－K0QZL1 UniRef90＿UPIO0037BDE31 UniRef90 UPI000197AC1E UniRef90－R9GNQ2 UniRef90＿B8CT86 UniRef90 F6SZT6 UniRef90－UPIO004041869 UniRef90－Q7UXNO UniRef90 UPIO0026319EE UniRef90 UPI00032AC1C0 UniRef90－U2HUGO UniRef90－UPIO0035D9019 UniRef90＿18XX95 UniRef90 H9JZE UniRef90－I6ZXE3 UniRet90－HOWYH5 UniRef90 D6WJ59 UniRef90－A8FRF2 UniRet90＿W8AJG8 UniRef90 UPI000361A362 UniRef90－K3WER2 UniRef90－R9CLZ8 UniRet90＿M5SWT9 UniRet90 K3Y1A7 UniRef90－B4LRW2 UniRef90＿UPI00036BCA9B UniRef90＿G8TK11 UniRef90 UPI0003B30D25 UniRef90＿UPIo002E2582E UniRef90＿J9FH44
UniRe90 19L9C2 UniRef90－R5KVJ2 UniRef90－Q02BT UniRef90－UPIO00300AF19 UniRef90 EOVHA4 UniRef90－X5E1Q2 UniRef90－G7UUDO UniRef90 B4Q429 UniRef90－UPI0003B7427E UniRef90－W9S2K8 UniRef90＿A9S856 UniRef90 WoFow2 UniRef90 ${ }^{-}$W6MRV9 UniRef90＿UPI00037201AA UniRef90 UPI0004688152 UniRef90 A0A059EG43 UniRef90－B4MUJ8 UniRef90－UPIO0044105B2 UniRef90 L8GJ18 UniRef90－UPIO004749283 UniRef90－UPIO00422EF4E UniRef90－UPI00037E22CB UniRef90 F3ZQG3 UniRef90－T1CJD4 UniRef90－E9HP64 UniRef90＿MORID UniRef90－W0RCR7 UniRef90－E7RNL2 UniRef90 UPI00042AF1EC UniRef90 A0A0220D77 UniRef90－B4HXU5 UniRef90－UPI0003B6141B UniRef90 W2CHF7 UniRef90

VYPGNKTVSVAAPEY【ADSDVMVRMSDD【SV
KTSFTFQDTVSGПYNAERKS $T$ SWGGGVYSDTTAHGПEDH FAQPGVKTQWTPDGNGYYEISDGLEVK QQPFTLDK $\square$ FDETFESFTSD SWWNDGDGVYTRTDED ELV KLSPDGQRVTYLA GRKDNQNFYDLWQM
$\square S \square D S \square F G G K$ YAESFSPRWWASGSCYTSPKRDLVWH
PSPRSVKFSPDGSKLTRQRLDLWAY
QLSPDGQRVTFDRAKQTDTNRFD LWEY KPDTDERMYSPADAGTSPG苗LSPDGKRVTYLAGDLWQM KNKFSYKSVNPRWVSDHMYI IQAANDI ILK
LStrRLFKSDFRSKSRTLTWDNNEDIRWERQSGLNQL QPLTLQRLFSPSGGPAPRAVQLSPDGKYLTRERYDLWAM SISFTPDDSLISYLFSKIFTF QKPLTDDRTFSPSLSPTPRGVKWTEDGNYYDFSKEGLVIV KTPTLEDLTPGRYAENDYGLQWWGDECDKPGDDTLFVI


RMQFDEFLQGELTPKRपPSSWTSHHFVYQDDGSLAL KLSPDGKRVTYLA GRQDNQHFYDLWQM QRपK【QD\｜VDGLFDPQRSNGTWUNGEEFDYQDWGR｜VLL

QWTPDGNYYSFSKNGTDVV
 SFSPDDRRIAFSPDGTL HRSVFI F KTPWELVEADYGSSGLRSFNGTWITGYGUIVNANGFLIVF

TPNWIKDDRFWYRQGSEFI LV QPLTLERVYSPALNPRPRVLKLSPDDGRLATLLKNDLWGF KKSFTLEDVMPGLLPQNRYGLQWWGDGCMDAD DDAVKTL PSPRELKVSPDGRFLTKDRYDLWAF QKEFTLEDLNFGNMTPKNRYLTWWGDEQLVRLDVEECSLV

$$
\square K D V F N G K V F P N \quad W W D K G S R F W Y Q K D Q F V L M
$$ KLIS FDNIVQNKYKPRFFNGSWUSEGEMVYRDYGNVKML $K$ QMS KTAWELTEALYGTSGLRSFNGTWITGGYHLEHHP

LF


QKLQWSPDGSFYTFSEKGПSST QKMTDDDER $\square G K F Y$ VFSDUNQLPDEGYY $\square Q R M G A E F V A$ KK LT LDDLTPGRYAENLYALQWWGDECTKPGПDTTYT LTLDRLFSPSLTGQTLGIKYSPDAARVTQQRHDLWQY QRKKQDVDGLYMPQRANGSWIDDAEEFLYQDHGRICLL HLTVDDLFLKEFQVHTPEAQW

SSAFAQWGQETYWS $\square D G K \square M A V E S G N D V E R$ MPGYEQYQKMAPQI Y KELTTERTYSPSLNPSPTGVKYSPDGTRVTSSRYDLWQF KQPTLENLMPGLFTENDYGLNWWGDT CLKPGMSELKA
RFSLEDVLGDKFQPLKFNGSWLKNDQLLITDNDNLQUL
 QKQFTDEDपFGGTFDPENCYTTWWGDELIRGDAEECSII

QR $\square K \square Q D \square V D G \square F V P Q H S N G S W D D G E E F \square Y Q D H G R \square C L L$
NPMWIA GNRFWYRDHGTYVLV KK L F T LEDLFGGTMTPQNRS IVWWGEEAVRTDADFCALI
UniRef90 R7TV60 UniRef90-M1VTT5
UniRef90 W WVSC9 UniRef90-W3VSC9
UniRef90 V5G0L2 UniRef90_W4WW39 UniRef90 B8M4E4
UniRef90 E6RG44 UniRef90-V4PGU2 UniRef90_Q088C2 UniReffo-H8L1D5 UniRef90-M7WL54
UniRef90 S3BYM3 UniRef90-UPIO001FFDF77 UniRet90-M7XVT3 UniRef90-T1KU08 UniRef90-V4RDAO UniRef90-B9TDC0 UniRef90-Q5K721 UniRef90-K4KH95 UniRef90-13M337
UniRef90 R5AS40 UniRef90-R5AS40
UniRef90_K3YQ50 UniRef90 F4S2H3 UniRef90- F4CCM9 UniRef90-R9AL51 UniRef90-Q0HM17 UniRef90-UPIO003B6E41F UniRef90-K0QZL1 UniRef90-UPIO0037BDE31 UniRet90_UPI000197AC1E UniRet90-R9GNQ2 UniRef90-B8CT86 UniRef90-F6SZT6 UniRef90_UPIOO04041869 UniRef90-Q7UXNO UniRef90-UPIO0026319EE UniRef90-UPIOOO32AC1C0 UniRef90-U2HUGO UniRef90_UP100035D9019 UniRef90_18XX95 UniRef90-H9JZE1 UniRef90-16ZXE3 UniRef90-HOWYH5 UniRef90-D6WJ59 UniRef90-A8FRF2 UniRef90_W8AJG8 UniRee90-UPIOO0361A362 UniRef90-K3WER2 UniRef90-R9CLZ8
UniRef90 UniRef90 ${ }^{-}$K 3 Y 1 A 7 UniRef90-B4LRW2 UniRef90-UP100036BCA9B UniRef90- G8TKI1 UniRee90 ${ }^{-}$UPI0003B30D25 UniRef90_UPIO002E2582E UniRef90-J9FH44
UniRef90-19L9C2
UniRef90-R5KVJ2
UniRef90-Q02BT7
UniRee90-UPIO00300AF19 UniRet90-EOVHA4 UniRef90-X5E1Q2
UniRef90 G7UUDO
UniRef90-B4Q429 UniRef90-UPIO003B7427E UniRef90-W9S2K8 UniRef90-A9S856 UniRef90_WOFOW2 UniRef90_W6MRV9
UniRef90_UP100037201AA UniRef90-UPIOO04688152 UniRef90-A0A059EG43 UniRef90-B4MUJ8 UniRef90-UPI00044105B2 UniRef90 L8GJ18 UniRef90_UPIOO04749283 UniRef90-UPIO00422EF4E UniRef90-UPI00037E22CB UniRef90-F3ZQG3 UniRef90-T1CJD4 UniRef90-MORID1 UniRef90-WORCR7 UniRef90-E7RNL2 UniRef90-UPIO0042AF1EC UniRef90-A0A022QD77 UniRet90-B4HXU5 UniRef90-UP10003B6141B UniRef90-W2CHF7 UniRef90-K4BIA9
UniRefon UPIIOOO


#### Abstract

50 60 70 80 DAATQEEF $\|$ LVJHSMFAETRASY YFLLAEDHSFVVIFASF DVRANKSRTLMKSKDFTHNGTSMTPDWWSPDLKKVLLADH DVTHGGKVLVVEGKNVLDANGRMTSFKLSPDLRWVLFFTE NMENSTSKLLLDST DNVLLTAFDYHLSGDGLYLLVAYN NVKTKETKQIFNGTNDPVSYKFNTATISADKQYILFGYN DLRSSNSYNLMKSSHIDDKLTEDNEALPSPDLKKILLLTH TVRNMTTDTLLVNASPDGNQLLHWGWALSADMQYVLFKTD PVKGGEPFLLVDRERMRVSARGVVAYEWSENSQSILLPGD DIATGKRSILINADQLDAYGQGI MEYFWSEDSQHILIPAA APNTGKSSVLVAADQRTADLRGUVDYQWSPDGKALLFPLD DLNANSSRILVENDVRDPRGRKLDQFKLSADGKVVLFNTD DVRSDSKTRLVKKAFDEYGGTIGTAAPSDDMKVLGSVN DPAAGTRRDLVDHDRLAAALSEASGHAVDGDGDRVLFSAF TLPSQAREDIVGEKDLTPAGQDVRDFTFSQDNKKVLTYTN DTKGGEPYLLIDRERMRVSARGVVDYNWSGDSKSILVPLD NMKDKTTHRLVDSKARTASLSGLLSYSWSPDGKQLLVPA TVRNMTTDTLLVNASLVLDDEGNTGWADSADMQYVLFRTD



DLKSKTTKLLLSQSDTRTPNGNYKSFTVSSDLRYVMLKSD LLDPNHPVVFLDGSALTPQDSSVKQFSISADRRKVLLFTN Y L N D N T T K K T L V V K A G D D D G N P L NLKIGESSLLVNRERQRDYGEGLMEYFWADDSKALLISAS
 DVTDGDATLLVDSKLLEPDDFELSEEEKADRERKRIAGTK NIKEQRSRLLFDRERMRLSGSGIVSYKWSADGKALLEPLA DVKDPSKQITVLNNTGSDPDQVRRFQFSKDENKILIHTN DVATGKQSLLLDRERQRDYGQGUMEYFWADDSQAMLI PAS CAMDQHEFLI MPGAMYTDKGA RSYQVSASQNFVLLDTD TVPSRQEKVIVAQDLLKKADGSVRSYTMSQAGDKVLIVTN DTANGQWRMLVDSKKGGSGAKGI DSYDWAPDGRSILVPDD DLKTNKQELLFS PPDGGLDESNTSPEEKRGLGVTR DLQANKREVFLAAKDLTPTGQEVQSFQLSPDKKTLLLFAN DTKTGAERMLVDSKKIGTGAKGIVDYAWAPDGKSILVPDD HVSSKNDTSYSLMSNETFRTLNPAKFSLSPDRNYLLLAHN NVENNEREVYLDYSQDGPEGFNLDEAVINND
DTSHNTVSILVTNHT乌RQLL VKGYQCSKDपKYVLEQHD NVESGKQSILLDRERQRDYGQGLMEYFWSDDSQAILTPAS NASSLDERVLMSNVTYKTF APYTFSLSADKRYLLLAQN DPVHPENKVFMTGRELTPAGTSVQSFTVSPDGNRILLFAN NLISDKNQNFLRRERQRQMGVGITSYSFSPGSKRLLYPDQ SVPEGKETVAVSADQFHLDSGSI DDYSWSHDHRYLVVLSN DIADGRRELLFTRERAREHGLGVTYYEWSPDGUVVPLPSG DFERNS QLPSFQKTVVLDTVK IPKGQNVRSFSFSGNEKKI LIFTN DRKTGKWSMLVDSRQRIGDLKGIVSYDWASDSKTVLVPLD DTATGQSRMLVDSEKLSSGAKGITTDYAWAPDARRLLVPVE HPTSGKETTLITGDEVNELLAADKLGKLUH FRSAL FPYA DKKTGKEKPLVTVDDNKWAGTTADSAKDYHGFYASFPYP DPAKGTRAPAFEHAKVAAALSSASGDEFSSDGLSDSFQAG CVENFTTKSLITNTTFELVNAGVDYKVSADLNYILLITN

 DAGKGTRERAFDHKTYKPYDLPFTSFKFSDDGHSLVF

DPVNANNKMFMTVQDLTPGASVQSFTVAPNGKLLLLFAN DSKFSKRILKNQDFKYNGAKYSVSDUVLGPLLETALVVAN GKAAREYNGQSIHPQWLPDGKL
QPQTGKETMLVAREQTNKVLEANKLGKLSH पYSVSFPWA DVETGVPSLLVDSLLLEPEDIVLSEEEI ALRERKRIIAGRT NAGNRSERVLMSNVTFKTGAPATFY ASPDKRYLLABCN NQTAFVAAAPDNAWASS円GSYY!SPAGGDII FAVN NA DDPSKTSVIVAKEDDGKNDNVVRFAFANGNQKVL DNSN TAVKSGA SAKWNAEGTSFEYAQDGK $G$ FRYD DVETGEQSMLVDSTLLEPEEVELSEEEKALRERKRIAGRK NPSTGKEEVFLKDEDVNA LSSNKMAELT NLYQVEFPWD DAPSGT DQPLLYNESDPVPPGALKYSLSPDNRFLLLTTD DVVSGRQELAFSRERSRERGLGVTTYYWKARSPSSSFFSP DLASKTRSTLAGDAAATPAGPPP NKVTGKESMLFTLADVNKWLGTDTANKV HS

NAANRSERVLMSNVTFKTD SPFTFTDSADKRYLLLAQN
 NKTTGRETR TFTDTDNQWGGAKDDNHVKS
UniRef90 R7TV60 UniRef90 M1VTTS UniRefefo-W3VSC9 UniRef90_V5GOL2
UniRef90-W4WW39 UniRef90-B8M4E4 UniRef90-E6RG44 UniRef90_V4PGU2 UniRef90_O088C2 UniRef90-H8L1D5 UniRef90-M7WL54
UniRef90 $\mathrm{S3BYM3}$ UniRef90_UPIO001FFDF77 UniRef90-M7XVT3 UniRef90-T1KU08 UniRef90-V4RDAO UniRef90-B9TDCO UniRef90-O5K721 UniRef90_K4KH95
UniRef90_l3M337 UniRef90_R5AS40 UniRef90-K3YQ50 UniRef90-F4S2H3 UniRef90-F4CCM9 UniRef90-R9AL51 UniRef90-Q0HM17 UniRef90-UPIO003B6E41F UniRef90-K0QZL1 UniRef90-UPI00037BDE31 UniRef90 UPI000197AC1E UniRet90-R9GNQ2 UniRef90-B8CT86 UniRef90 F6SZT6 UniRef90_UPIO004041869 UniRef90-Q7UXNO UniRef90-UPIO0026319EE
UniRef90-UPI00032AC1C0
UniRef90-U2HUGO
UniRef90_UP100035D9019
UniRef90_18XX95
UniRef90-H9JZE1
UniRef90-I6ZXE3
UniRef90-HOWYH5
UniRef90-D6WJ59
UniRef90-A8FRF2
UniRef90-W8AJG8
UniRef90-UPIO00361A362
UniRef90-K3WER2
UniRef90-R9CLZ8
UniRef90 M5SWT9
UniRef90 K 3 Y 1 A 7
UniRef90-B4LRW2
UniRef90-UP100036BCA9B
UniRef90- G8TKI1
UniRef90-UPIO003B30D25
UniRef90_UPIO002E2582E
UniRef90-J9FH44
UniRef90_19L9C2
UniRef90-R5KVJ2
UniRef90-Q02BT7
UniRef90_UPIo00300AF19
UniRef90_EOVHA4
UniRef90-X5E1Q2
UniRef90-G7UUDO
UniRef90-B4Q429
UniRef90-UPIIO003B7427E
UniRef90-W9S2K8
UniRef90-A9S856
UniRef90 WoFOW2
UniRef90-W6MRV9
UniRef90 UPIO0037201AA
UniRef90_UPI0004688152
UniRef90-A0A059EG43
UniRef90-B4MUJ8
UniRee90-UPI00044105B2
UniRef90-L8GJ18
UniRef90_UPI0004749283
UniRef90 UPIIOOO422EF4E
UniRef90-F3ZQG3
UniRef90-T1CJD4
UniRef90-E9HP64
UniRef90 MoRID1
UniRe990-W0RCR7
UniRef90-UPIO0042AF1EC
UniRef90-A0A022QD77
UniRef90-B4HXU5
UniRef90-UP10003B6141B
UniRef90-W2CHF7
UniRef90-K4B1A9

UniRef90_UPI00029B2D12

SEQVWRSSFTATYSIIGVLTGSPSIVTPFPNGDRLQYARFGP 120 REKNWRYSFTATYFIFHVDSGDAEPLVPNNDGVQLANWSP ETDQWRYSKKSHLWLHDIAAKKTTQLPKAPPKVTYAAWAP YQKQYRHSFKAQYQI DDI NTGSKYDLMASNQSVQLVAWAP TRRMFRHSTDKNYVVYDIQYGTFEEIANETF I SLTLWSP KRKNWRHSFTGRYWIFDVATQSTQPLDPNDDEIQWASWSP HLKQWRHSSFGNYW HRRHDSFTVVPPTSPPTVAKCTWSP GDLYLVDRASRKVSRLTETAGDEVDAKLSP WTKVWRHSTLSNFHLFPLTSSSPRALPSYPPKTFTAHFSP SKSNWRHSKVASYFILDVASQTAEPLVPGEPDDQLAQWSP DARWSWSGETGDCVRVDGEADGGRPAGPGEHSS TKRVWRLDTQGDYWVLDLVSKELK Q GKPESSLRFAKLSP DKKVFQYSF DGEYKIYNUSNEQLFTLEVPGDQLEYAKWGP GDTYMVDRATKAVKRITETEGDEVDAKLSP


YELANKKARQLTATDAFETDPQ
QEP $\square Y$ RNSVKARYWVYDTHSR LLRPLVDDANRQRAP $\ F S P$ L K K S S PTSP IIDPPLLSP 1 IK Q WRYSTFANYWDFDTHTKTIQLHPNHTNVSLATWSP TKRVWRYHTRGDYWVYDDNKKELKQLGKPASSLMFAK LSP TLQQFRHSSYANYHIHSIESNSTHPLHDSPPSISDAKWSP GNLYY FSLADNSVSQLPDGEGFATDARLSP VVSYDWDETDGDVFYVDVNTGEAERLMQTEAFETDARVSP SQKVWRKKTRGDYWVLDI TARDLRQLGGPPSSLMFATFSP GUVSYDWDTKGEQULIPI GGPEVKQLTATDAFEYNAEDSP GDAFY YRLGDKKAQRLDATPEFETDDKFSP TKKVWRYDTRGDYWVYDRTAKTLKKLSRPESSLMFAKFSP GQLYY YVKGWRHSYNGTY IVYDVNQDMIRDDITFPSDVQY ITWSP TKRVWRYQTRGDYWVFDVAGKTLKQLGKPASSLMFAKFSP TRRVWRQHTRGDYWLRDLSWRKI GGEDAPDAKTMFATFAP GELFRARL

TGEI DKLDAAAGPK】NAAISP
 TKRVWRENTRGDYWLYNLNNKALTQLGKPESSLMFAKFSP DKEQMLDKLPGDKYUVYDLDGS VVRRLTDTPQSEDDAHVSA VKK LDF RYSYLA QYTI YDVKTRETIADTPHPEKEDHPYWTP SYTKF $\square$ FERDND LYY $\quad$ SVVEDNLFKKLTDDKAEEKNPKFSP

VKSVFRQSFTATYT $\square Y$ DVSKDHQDPLKAEPETEQYVSWLG GVLYY YYSLSDNKVTLLPTGDGFATDARLSP VVKLFRHSFDAQYTGFDUQTSESIKLKDDSHSDEWPYLHY TRRVWRENTRGDYWVFDRAAKKLVQLGQGLPSLMFAKFSP GDLYIQEQPGAEDRLLDKNGDKTTMGVAGGVDDPQFSP SVRVWRTNTRGDYWLLDMLSKSWRKLGGDDQSLMFATFSP VYFQDFRGSEPEDKLQSAPTSPGI DPHDSP LTEKFRHSYVAQYDVYD DATNTAIKDHKGE K LQYCGWSP
 GK W W KCDLYA GLDGKVRKAAGTTGGGELNDARLGP DQWML VKTPGDHWVAGLDGN VGRRLTQTPETETDAQLSP GDLFLAGLDGE VRRDTDSPEDELNAALSP DKTLVLVNRKGERLLIDDKAKKTVWRQNTE GETHEEWNP GRWQCDVQGTKCSAL ESAATPGGGRGGRGGGGRGGRGGGP
$D E K A I D Q E V D E S T W I C D L T K Y Q C K Q I G R K K D P A H E L P S ~$ A $\square R \square W K Y S F R A K Y Y V Y E \square A T E E Y F P L S D D F P F L E S A T W A P$ GQTDLLISSDAKKYWLVDSNTKNVKYKDEDPENAADNASFSE GALYL LTEKFRHSYDAQYDVFDIETNTTVQIHKGE K LDQYCGWSP
 TRRVWRQNTRGDYWDYNTETKKLVQLGKGLPESSFAKFSP HESQWRHSGDAHYFLYD $\square$ AKNVYTALTVYVPKLSFAEFSP
 GILDYSWGTATTILVPDGGTDGLVTDTESGPQVRDARISP V V K Li F R H S Y L A Q Y Th Y
 TKKVWRYDTRGDFWVYNLKDHSLKQUDKPESSLMFAKFSA IK SKSVTEVGDAPKPEPRRRTGPARGRQDSTESP



 $D P Q Q S L D P P E V S N A A$ LQQYA GWG P KPQLKDPSVACSPIDDPHVSP VVK $\square F R H S Y \square A Q Y T D Y D \square Q T S E S I K L R H S P H Q D E W P R F T P$ QGHFSCRLEKAYTCVSTDKADAKQSAHRSRRGQTSPAVSP $K Q S L V L V E N \square T E R M L V D W K A H R V V W R Q A S A L Q E$ HTPDAP


D T T S L LMVYNNDTYFRQSPDETETRDT FSGRPEVIYNGDP KGKYVSFVRDQNLFVLTLKDMSLVEMTTDGGGGAIKNAMA ASNALVLVYNYDIYYCPRSTNHVYRDTRDAVPGDVYNGDP DGRKVAYVSKHNIY IEDLQTHNHTAITQDGTDARIDNGTF $D G R W I A F V Q D K E V Y V I S S E G S Q D A V Q L T$ NGDAVAYVSDRNLYLENSATGQI EAI AASENPNLIH GTF CGSMI AFVRDDELYTLDFFDGVIRQLTFGARESGKTHGHA
 DGSRAAFI KDYNLWVRNVKTGQQTQLTTDGDKDFGYATDN QGDTLAFVRDRRLWI APADGKAPPRITPEESAETVHWGEA

 ASRAVAFVKDDNLYVTDAEGKTRQLTTDGSHDTVYG
DKKHAAFIRRDSNLWVRDVATNKESPLTTD GVKDFGYATDN DGRWAAFIKGYNLFVRSLETGQIDQLTHDGKRYYDYGTQL



 DGKKVAYVSKHNIFI ENLADNHRTQVTKDGTD RMDNGTF KGNYITYYVFENNVYLCDLNDNMETLQLTDDGSNTIYNGKP DGKKAVF K K WNL WVKD IATGTEKPLTTDGVKDFGYATDN ASGKVAYTIGNNLYVNDQAVTDEPEGIVCG KGTYASFIRDGALWI IDDATGDEKRASPPADPSKSLSYGV TGNALIWVYNYDIYYRQEVTANVYRDSHDADPGVVYNGIPB
 DATKVAYVSGHNIYVEDLNSGGTKALTTDGT LRLINGTF DGSLKAFTKDRNMYLSNPDGTNVIALTSDDGEENQVKYGDA GGNFVSFVRDGAVFVIEDATGEERQITPDAEPGNADSYGV K ANQI A YTIDEDLWVNNKK DT QNLE GVVAGET
KGRYVSFDREQNLWVYDLQRGTLREETNDDGSDH DGEA K GRGALVYCHQNDI YYIPDITTDQTERITSSDGSFNSISNGEAB D G SMLA YVGDDELHVLSLSPGEPNQLTFGARANGKTHGLA DGKLLA A YRDRNVYVCDAAGANEVAVTTDGSEKTRKYGTA A SKALAYVKDNQLMVKTQDDGDSTQLTTDGSRCIVYG $K G Q Q L D F I F E N N I Y Y C A H V G K Q A \square R V V S T G K E G V V Y N G L S$ DGTTLAYVRDNELHVLNLLFNTSKQLTLGANENAITHGLA A GNALVWVQSYDVYYREEVSASVHRMTHEANVENVVYNGUAB D GTKEAFLRDWNLWVCDDAT GAETQLTEDGVKDFGYATDN ASRATAYVRDHNLFVIDGEGRVRQISTDGSREMVYGVTA

UniRef90 R7TV60 UniRef90_M1VTT5
UniRef90_W3VSC9 UniRef90-V5G0L2 UniRef90-W4WW39 UniRef90_B8M4E4
UniRef90-E6RG44 UniRef90-V4PGU2 UniRef90-Q088C2 UniRef90-H8L1D5 UniRef90-S3BYM3 UniRef90-UPI0001FFDF77 UniRef90-M7XVT3 UniRef90-T1KU08 UniRef90-V4RDA0 UniRef90-B9TDC0 UniRef90_Q5K721 UniRef90-K4KH95 UniRef90-I3M337
UniRef90-R5AS40 UniRef90-K3YQ50 UniRef90-F4S2H3 UniRef90-F4CCM9 UniRef90-R9ALL51 UniRef90_Q0HMI7 UniRef90-UPIO003B6E41F UniRef90-K0QZL1 UniRef90_UPI00037BDE31 UniRef90_UPI000197AC1E UniRef90_R9GNQ2 UniRef90-B8CT86 UniRef90- F6SZT6 UniRef90_UPIO004041869 UniRef90-Q7UXN0 UniRef90_UPIO0026319EE UniRef90_UPI00032AC1C0 UniRef90-U2HUGO UniRef90_UPIO0035D9019 UniRef90_-I8XX95 UniRef90-H9JZE1 UniRef90-I6ZXE3
UniRef90 HOWYH5 UniRef90-D6WJ59 UniRef90-A8FRF2 UniRef90-W8AJG8 UniRef90-UPIO00361A362 UniRef90-K3WER2 UniRef90-R9CLZ8
UniRef90 M5SWT9 UniRef90-K3Y1A7 UniRef90-B4LRW2 UniRef90_UPI00036BCA9B UniRef90_G8TKI1 UniRef90_UPIO003B30D25 UniRef90_UPIO002E2582E UniRef90-J9FH44 UniRef90_19L9C2 UniRef90-R5KVJ2 UniRef90_Q02BT7 UniRef90_UPI000300AF19 UniRef90-EOVHA4 UniRef90-X5E1Q2
UniRef90 G7UUD0 UniRef90_B4Q429 UniRef90-UPIO003B7427E UniRef90-W9S2K8 UniRef90-A9S856 UniRef90_WOFOW2 UniRef90_W6MRV9
UniRef90_UPIO0037201AA UniRef90_UPI0004688152 UniRef90_A0A059EG43 UniRef90-B4MUJ8 UniRef90_UPI00044105B2 UniRef90_L8GJ18 UniRef90_UPIO004749283 UniRef90-UP1000422EF4E UniRef90-F3ZQG3 UniRef90-T1CJD4 UniRef90-E9HP64 UniRef90 M0RID1 UniRef90-E7RNL2 UniRef90_UPI00042AF1EC UniRef90-A0A022QD77 UniRef90-B4HXU5 UniRef90_UPIO003B6141B UniRef90-W2CHF7 UniRef90-K4BIA9
UniRef90_UPI00029B2D12D WNYEGMMS S
$\qquad$ PF QRMS $\square H Q \mid L$
DWVYE EEVFSGRSATWWSSDGKYLAFLWTNETAVPEYA IDE

D
$2 \quad \frac{D}{F}$

## Oா

D
WVVY E EVV D WV Y E E E LI LM G GA I WWWS


## UniRef90_R7TV60 UniRef90-M1VTT5 UniRet90_W3VSC9 UniRef90-V5G0L2 UniRef90-W4WW39 UniRef90 B8M4E4 UniRef90-E6RG44 UniRef90 ${ }^{-}$V4PGU2 UniRef90_O088C2 UniRef90-H8L1D5 UniRef90 M7WL54 UniRef90-S3BYM3

 UniRef90-UPI0001FFDF77 UniRef90-M7XVT3 UniRef90-T1KU08 UniRef90-V4RDAOUniRef90-B9TDC0 UniRef90-Q5K721 UniRef90-K4KH95 UniRef90-13M337
UniRef90 R5AS40 UniRef90-K3YQ50 UniRef90 F4S2H3 UniRef90-F4CCM9 UniRefefo RgALL51 UniRef90-Q0HM17 UniRef90-UPIOO03B6E41F UniRef90-K0QZL1 UniRef90-UPIO0037BDE31 UniRef90_UPI000197AC1E UniRef90-R9GNQ2 UniRef90-B8CT86 UniRef90-F6SZT6 UniRef90-UPIO004041869 UniRef90_Q7UXNO UniRef90-UPI00026319EE UniRef90- UPIOOO32AC1C0 UniRef90-U2HUGO UniRef90_UPIOOO35D9019 UniRef90_18XX95 UniRef90-H9JZE1 UniRef90-I6ZXE3 UniRef90-D6WJ59 UniRet90_A8FRF2
UniRef90_W8AJG8 UniRet90 UPIO00361A362 UniRef90-K3WER2 UniRef90-M5SWT9 UniRet90-K3Y1A7 UniRef90-B4LRW2
UniRef90 UPIOOO36BCA9B UniRef90 ${ }^{-}$G8TK11 UniRef90_UPI0003B30D25 UniRef90_UPIO002E2582E UniRef90-J9FH44
UniRef90-19L9C2
UniRefofornkVJ2

## UniRef90_O22BT7

 UniRet90_UPI000300AF19 UniRef90-EOVHA4 UniRef90-G7UUDO UniRef90-B4Q429 UniRef90-UPIOOO3B7427E UniRef90-W9S2K8 UniRef90-A9S856 UniRef90 WoFOW2 UniRef90_W6MRV9UniRef90_UP100037201AA UniRef90_UPIOOO4688152 UniRef90-A0A059EG43 UniRef90-B4MUJ8 UniRef90_UPIOOO44105B2 UniRef90-L8GJ18 UniRef90_UPI0004749283 UniRef90 UPIIOOO422EF4E UniRef90-UPIO0037E22CB UniRef90-F3ZQG3 UniRef90-T1CJD4
UniRef90 E9HP64 UniRef90-MORID1 UniRef90-WoRCR7 UniRef90-E7RNL2 UniRef90-B4HXU5 UniRef90-UPIIOOO3B6141B
UniRef90- W2CHF7 UniRef90 W2CHF7 UniRef90_K4BIA9
UniRef90-UPIOOO पDTTGRRQPGDLIRENGEDDEVGPNSKSELYY ${ }^{220}$ VHTDTPSGT YYVQRPSGYPDIRKDKYPKPGAHNPVVNVQYYDVSKGEVF

 EDGGEGV K K I D QRYPFAGKPNAVVELYVKTLGGGDVK TRNEIYAEGIKLTEQRYPYAGKANVEVALGVVGLKDRSVS VYNSNPNEVGGEEYPPYPKAGYPNPLVSLHIFSLTHYLSL ESAPGEENO VRQKM
 ETGGEEV EIFADRT
 ETDGD SFKVYDQRYPRTGTNNVLNRVGVISLKGKA TYTGSAYPYTVKPYHYPKAGSENPSISLHVIGLNGPTH LYNEDYSGYPGSFRYKYPVAGMKNSKVSVHAYDVERATK SFSGNTEPYPTRKPMKYPKPGFPNPLPGLKVFDLRKFDSD MLNTTDSTYSFTMPVEYPKAGQNPSACFIYVVDVKTKENK ElYAD

G। TAEGV
LI NNTDHL EAANDVAT
 DSTYSFTTPVEYPKAGEDPSACRLAVVDVNTGKST R Y Y MTNTTDSDYSFNVPVEYPKVGETPSPYKIGVVDIATAQTK MI DNTSERYAKAIEFAYPKVGQTNSAAKVGVWDRTSKKTV A $\backslash G A E G T$ S $V V Q Q Y P K A G T P N A L V E L V L E P T G Q K R V$ $H Q G K S S V G T D A E D H P Y P F A G A S N V K V R L G V V S V A G G S D T$ MINNTDSLYSFDIPVEYPKVGLKPSATSIWVYDLNNSTNK A GADGT RTATFDQRYPAAGTPNVIASLSVMSADGSHRV WFGEGNALYPDVRSLRYPKPGTPNPVVRLYVADLADPKNL

 EVYAD SYGGUKLTEQRYPYAGKNNVKISLGUVKLTSKKVS MINNTDSLYPFTIPVEYPKVGQNPSSCTIWFYDLRSKATH HSGSDTVGDVAQEDHRYPFAGGVNPLRRLGVVSVRTSATQ DNTSERYPSTK RFAYPKVGQTNSAARIGVFDFGSKTTT HQGKDYVDPTAQEDHPYPFAGKANAKVRLGVVPSHGGETT
 A $\Pi$ GA
A\| GADGTRLFT VNTFTRAT A GAEGT VNVDTDAKFAQRYPAAGTPNAVSLYMKPDGSARV VDTKVGHPTLQAWKYPLPGDEVVTIGRVVVDLDGPRVV SVPSEDAKPPVVHSYHYPLVGDKHPLAQFVI CDDIEQQSMI QYGTTKYGEDKTIN YPRTGTENPKVKLTVVNMTYPKI DF MARQAE LTPDKYPMAGMASHHVTLGVYNDESGVTT EVHPDRT
LYGDTFYQYPHEEQLKYPKSGSKNPVVSLRVYDVSDNDMH VSTNVGHPKGQAWKYPGPEDKDFRI HRVVDHLDGPRLV HQGKSSVGSDAQEDHAYPFSGASNVKVR GVV VSSAGGP MIDNTDSGYSFTIPVVEYPKVGQNPSSCTIWLYDLAS PYANTGSGYPEAGKVRYPTPGTANPIASLVNFSIKNSTMN VRTKVGAPELEQWKYPGPDSANIKIHRLVIDVEADTRF DTT TRVG DIAAEKV

## R

VYDGDAYP
MINNTDSHY
 TVPVEYPVVGEDPSACKVGVVAVATAKTA SLEDEAYPKVGEPNLPVDLMVYDLETKKDT

|  | T TRDA |
| :---: | :---: |

DIYYDHT DYPDSFEDYTE HQGKNSVGSDAQEDHAYPFAGAANVKVR RVVDASGGEVT Q NETKLQTTL DTFHRTALY DVEAYPKPGVPNPVVELYVYDVATKQSR TVKPYHYPKAGSENPSISLHVTGLSGPT HQGKDSVGSDAQEDHAYPFAGASNVKVRLGVVSASG WYGTTGPLYPERRSLRYPKPGTQNPTVTLRVADLKDPLKV PVTN
HQGKSSVGPEAQADEAYPGAGGPNVKVRLGVVSANGGQTT


UniRef90_R7TV60 UniRef90-M1VTT5
UniRef90- W3VSC9 UniRef90-V5G0L2 UniRef90_W4WW39 UniRef90_B8M4E4
UniRef90-E6RG44 UniRef90-V4PGU2 UniRef90_Q088C2 UniRef90_H8L1D5 UniRef90-S3BYM3 UniRef90_UPI0001FFDF77 UniRef90-M7XVT3 UniRef90-T1KU08 UniRef90-V4RDA0 UniRef90-B9TDC0 UniRef90-Q5K721
UniRef90 K4KH95 UniRef90-I3M337 UniRef90_R5AS40 UniRef90-K3YQ50 UniRef90 F4S2H3 UniRef90-F4CCM9 UniRef90-R9AL51 UniRef90_Q0HMI7 UniRef90_UPIO003B6E41F UniRef90-K0QZL1 UniRef90_UPI00037BDE31 UniRef90-UPI000197AC1E UniRef90-R9GNQ2 UniRef90-B8CT86 UniRef90-F6SZT6 UniRef90_UPI0004041869 UniRef90-Q7UXN0 UniRef90_UPIO0026319EE UniRef90-UPI00032AC1C0 UniRef90-U2HUG0 UniRef90_UPI00035D9019 UniRef90-_I8XX95 UniRef90-H9JZE1 UniRef90-16ZXE3 UniRef90-D6WJ59 UniRef90-A8FRF2 UniRef90-W8AJG8 UniRef90-UPI000361A362 UniRef90-K3WER2 UniRef90-R9CLZ8
UniRef90 M5SWT9 UniRef90 K3Y1A7 UniRef90-B4LRW2 UniRef90_UPI00036BCA9B UniRef90-G8TKI1 UniRef90-UPI0003B30D25 UniRef90_UPI0002E2582E UniRef90-J9FH44 UniRef90-I9L9C2 UniRef90-R5KVJ2 UniRef90-Q02BT7 UniRef90_UPI000300AF19 UniRef90_EOVHA4 UniRef90-X5E1Q2 UniRef90-G7UUD0 UniRef90-B4Q429 UniRef90_UPI0003B7427E UniRef90-W9S2K8 UniRef90_A9S856 UniRef90_WOFOW2 UniRef90_W6MRV9
UniRef90_UPIO0037201AA UniRef90_UPI0004688152 UniRef90_A0A059EG43 UniRef90-B4MUJ8 UniRef90_UPI00044105B2 UniRef90 L8GJ18 UniRef90_UPIO004749283 UniRef90-UP1000422EF4E UniRef90_UPI00037E22CB UniRef90-F3ZQG3 UniRef90-T1CJD4
UniRef90 E9HP64 UniRef90-M0RID1 UniRef90-W0RCR7 UniRef90-E7RNL2 UniRef90_UPI00042AF1EC UniRef90-A0A022QD77 UniRef90-B4HXU5 UniRef90_UPI0003B6141B UniRef90-W2CHF7 UniRef90-K4BIA9

290
300
310
YEREEANGWDEAP ${ }^{320}$


QNQSQMTM YN DQGDAKLVLSDEETEGWLQPNFP FEVVQTIIDDLENRSCETVRVDDMLSLDGGWPAQSMVFVP ARDGNVVLFQFQHDEGKSKTMEGQKDGEEGDDGWDDHGQN RDQHTLDLLQVDPVTGVSKVILSDTSGTWVE DQQTLDLRIAAASQPTQAKTVI TETSEERSKAWVNLNND
 SDVMRVVVVDVGARS GQAVRTVNVGKDDWFEDSTTTKYVP RDGRSLELRRMDPATGESTTLVSETGRTRRDP MPQYTFG
QNHSKIVALNVVQNTSRLVFEEQDEAWIDDVLSSWENVYT Y QNHSKI LALDNVVQNTSRLVFEEQDEA WVDVLSSWENVYTY RDQKRLDLLKFDPATGAATTVLTDTSDTWVE RDQKRLDLVAVDAATLAAQRPLLTETSKTWVS ARDGNVVLFQFDHEAKVEGEVVVRRDGKDGEEGDDGWDDH G QSELNAALKANVRNGKSSTLLTETHAAWDNGNDHTRF QNVSILTMCDA
 GSREKTGYFDDDFVKRDGGWAEPDRSUVSVIDVNSHRDPTN

 RDQQTLTLNTFSLSKQATKTLLVETERSNTWVNLHD
 QQSUDLRVVNDDDIKRNKDLV QNESTLLY



RDQNHAKLCQYNAETGE LMMATLFEETHPKYVEPQQP QNDSVVTMENCKSPDWHCQEDQRIIA EDRGWVDTPQP
 QNLSII SACLABRPNWTCVE HAERAAE RAWLD DQ
 QQN DSRMLLVDAAAATSKQIYRETDAAWIDDKSRWNDND
 QNQSKIIIVNADSGAGKNLHTETDNTWIVDKSTWNDGDPPD RTHTKLKLLKFNDATGKRELLLEEKH NVWVTVHDCFTP
 RDHKQEKVCTANASTGEVHNVFEETVTTQFESGAS RAQTRLDMLAVDPATGASHVLFTEQAREKSWUNLSSNYRF RDQQRLDVLAVDPATGASRVLASETAKTW $V$ VN
 RDQTDMELVSYDANTGEKLSTLYKEHHDK

 RDQQTLELIEHTLATGSQRTLLTETSPTW QNLSSUQSCSYQGDCVEVKRLEEPH GWVDDSTP
 QTK L




 QNASKMIIMLNVADNASKTI YTEIEKKA WVDVKAE QNI LELRAANPETGKSRTIIHEEWFPSWVE
GD SIL WF QTVNRDQTE I RYNRAEGA PWQVS SPLTENQDKWI
 $R D Q K K L E L V K V N A A T L A Q T T L L T E T S K T W V D V N S D L R F D K$

$Q N V S L I S F C D A G P W H C Q T V S T I E S G L E G W L D V G A D M L F H P$ RSHSKLK KFKFD DQTGKKKVLFVEEHETWUNLHDCFTPGD QNVLELAACSADAATGACRAI NREHEEWPTGWLENH | $R D Q N D C R$ |
| :--- | :--- |
| $Q N V S U L$ |

 RDHRQEWLRVADAETGDVREVMTETAPKFFESGA QNEMSLD AYDAVTGDKRATLYTERHEKY ITTSY Q

## UniRef90_R7TV60

 UniRef90-M1VTT5 UniRef90-W3VSC9 UniRef90_W4WW39 UniRef90-B8M4E4 UniRef90-E6RG44 UniRef90_O088C2 UniRef90-H8L1D5 UniRef90-M7WL54UniRef90 S3BYM3 UniRef90-UPI0001FFDF77 UniRet90-M7XVT3 UniRef90-T1KU08 UniRef90-V4RDAO UniRef90-B9TDC0 UniRef90-K4KH95 UniRef90-ı3м337 UniRefefo-M5AS40 UniRef90-F4S2H3 UniRef90-F4CCM9 UniRef90-R9AL51 UniRef90-UPIOOO3B6E41F UniRef90-K0QZL1 UniRef90-UPIO0037BDE31 UniRef90-UPI000197AC1E UniRef90-R9GNQ2 UniRef90-B8CT86 UniRef90-F6SZT6 UniRef90-UPIOOOC4041869 UniRef90-Q7UXN0 UniRef90-UPIO0026319EE UniRef90-UPI00032AC1C0 UniRef90-U2HUGO UniRef90_UPIOO035D9019 UniRef90_18XX95 UniRef90-H9JZE1 UniRef90-16ZXE3 UniRef90-HOWYH5
UniRef90 D6WJ59 UniRef90-A8FRF2
UniRef90-W8AJG8 UniRef90-UPIOO0361A362 UniRet90-K3WER2 UniRef90-R9CLZ8
UniRef90 UniRef90-K3Y1A7 UniRef90-B4LRW2 UniRef90-UP100036BCA9B UniRef90-G8TKI1 UniRef90-UPI0003B30D25 UniRef90-UPIO002E2582E UniRef90-J9FH44
UniRef90_19L9C2
UniRef90-R5KVJ2
UniRef90-Q02BT7
UniRet90-UPIO00300AF19
UniRef90_EOVHA4 UniRef90-X5E1Q2
UniRef90 G7UUDO
UniRef90-B4Q429 UniRef90-UPIOOO3B7427E UniRef90-W9S2K8 UniRef90-A9S856 UniRef90_WoFow2 UniRef90_W6MRV9
UniRef90_UP100037201AA UniRef90-UPIOO04688152 UniRef90-A0A059EG43 UniRef90-B4MUJ8 UniRef90_UPIOOO44105B2 UniRef90_L8GJ18 UniRef90_UPIO004749283 UniRef90 UPIIOOO422EF4E UniRef90-F3ZQG3 UniRef90-T1CJD4 UniRef90-E9HP64 UniRef90_W0RCR7 UniRef90-E7RNL2 UniRef90-UPIO0042AF1EC UniRet90_A0A022QD77 UniRet90-B4HXU5 UniRef90-UPIIOOO3B6141B UniRef90 W2CHF UniRef90_K4BIA9

330
 ADPSRGRPQDGYVDTVIHEGYEHIGYFTPLDNPKPIMLTS SHHNLSVGSTAYLDIVVSPQGFRHLYYDSATSDQPVFLTD

YTY ILLLRRESSGTSAGRFRH ADPNNNRPYNGYVDIVVHNGFKHLGYFTPLTNPNPVFLTS ADPVKGSVRGYLDIVPNGQYNHIALLFTPNASKPLWITA LH FLKQQAALI WGSERDGFNHLYLFDLQGKQLKQLTQ LNDDLHFLADGRFVWGSERSGFHQLYLYGPQGRLLHAISA IVPPIPPYPPGYLDIVPSPSGYNHIAYFSPDAEEPVFLTD ADAARGRPDDGYIDTIVHNDGDHLAYFTPPENPEPIMLTE EPPMVRVLEGGEILWWSQRDGWGHLY LYPADGADPVQLTS RHTFQWINDGKEFLWDSEKGWRHLYRIGDGKETLVTA LHNDFKLLSDGSFI WSSERDGNKHFYYYGSDGKLIRQVTH HDDLRFLARQKAFI WASERSGRKHLYLYDDAGHLLHPISS QNVIPVKGPVQGYLDVVPNQGYNHIALFTPNASKPRWITA LIKDNKHFIWGAERGDTLQLYLYSTDGKAVRQITQ EEPVFSKDGRKFFFVRADPQKFYHITVSSSQPRSVAPHGQ EGLVFTPD FFVVSSGRSGFTQLYQYGYSGALERTLTN LDKGVNSKHPGGFI WASEKTGFRHLYVHDKNGVCLGPLTQ PTGWEWIDDGKAFLWVSDKDGYRHVAYFSPPNSEPIFLTS TEGDE L GLEGSAYLDIVPNEQGYNHIFYTSSNASLPUFLTG LTNDT ESSGDR RAEDGGRFFLWLSS
 LT FLKEQNAFLWSTEESGFRHIT PT GWE W
$\begin{aligned} & \text { Q } \\ & Y \text { WDPVF }\end{aligned}$
 WD WNDAS WGQSAEEYFVV FKNDASDNS
KGVT
KFSGSLL WWS
KVT KFSGGFI WASEKSGFRHLYLHDANGTCDGPITE PSGWDWMDGGKAFI WLSEKSGWRQUYKIDDLQG KETLLSK胃 NNPGF EEPVFSKDGRKFFFVRA EHPIFSADGDSFLMLAAVPQKFYITVPNSSNDNIQSITS LH F F LKQQESFIWASERNGFNHLYLINLDGEVKKQLTS SVPLFAENATSYVAISPERDYFRHIVHVHVSKKRVLPLTH PSGWDWINKEG
SENKQTF RF WGS
 LYKGGNDKYPDCFI WASE KCLANGLNCTFAYYI TGWEWINNGKEFLWVSE A $\stackrel{L}{\mathrm{~L}} \mathrm{H}$ VHNS DGSLI WWS पS DN NPITFRFLKDGSLVWWSERDGFGHLYRFK NGQWHPLT RVNWRFLPESKEFIWFSERDNWGHLYGYDDTGEQLNQUTS GINVQWLSHDNSFIWHSERDGWSHLYLYDRTGRLKNRITS FDNNGTWFLADLPLQGSNGGRFQELCQVDSASRKFDYLT LHDADRFLDDGRLLWASEA KCFSTGKNCTFGYFI MVNWHVLPESNEVI WFSQR RVIGKFP PTGWDWINDKGDF WASEK PTGDWINKGDFLSKGGWRQIYKLNLEG KESLITR VPPTEGHKDYGYIDIVVNEGYDHLGYFSSVYASDPQMLTQ MANWKEMPETNEAI WYSERSGWGHLYZYDKTGAVKQQATK P ${ }^{\text {OTFLDPWDSKFIYQSQKDGFNHLYLYNTEGKLLKQLTK }}$ LSSDFVSLGATGVVLTEESRGYRQ|SLLPPSTTHPGQLIG EEPVFSQDGTTFFMTLP $\mathbb{Z} K H G S H S F H H D T M M S E Q H M V$ ETDGSILYFVDLLANAKSYPQALHLHDPPRHNAA
ATGWNWIEKGNKFVWLSEKSGWRHIYTTDLNG KQTLLTP
 NLSND FPWNNKGVLUQSEKTGYRHLA APKGSNELRFLTS GKP NGNSFLHDAPVQIDHTQD YFTNI IMVDAVKRHSWPVTQ KGVNCSS GGFIWASEKTGFRHLYHHDNNGVCLGPLTQ PTMRFLADSNRFI WESERTGFKNYYLYDDDGRLLKTLTR S GFLHLYLGNEDGSTLSALTS DNWHQV WNLDLLETGLNSWQS R RTGFRHLYLHDLNGNDLGAIT E
$\qquad$ E KIPNKSR GGFVWASEKTGFRHLYLYDLDGVCLGPI T RVNWHYLWDTDEVLWFSERSGWGQMYLYDKTGKLKNQITE TSVAFLPWDADKFI LQSQKDGYNHLYLFNTKGEMLRQLTS $\begin{array}{lllll}K G L N R T & N G A F & \text { WAS E K } \\ S I N W R F L P K S E E I: W Y S E R\end{array}$

| INVRFL |  |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |

## UniRef90_R7TV60

 UniRef90-M1VTT5 UniRef90-W3VSC9 UniRef90_W4WW39 UniRef90-B8M4E4 UniRet90-E6RG44 UniRef90_V4PGU2 UniRef90_O088C2 UniRef90-H8L1D5UniRef90 M7WL54 UniRef90-S3BYM3 UniRef90-UP10001FFDF77 UniRef90-M7XVT3 UniRet90-T1KU08 UniRef90-V4RDAO
UniRef90-B9TDC0 UniRef90-Q5K721 UniRef90-K4KH95 UniRef90-13м337 UniRefefo-M5AS40 UniRef90 F4S2H3 UniRef90-F4CCM9 UniRef90-R9AL51 UniRef90-Q0HM17 UniRef90-UPIO003B6E41F UniRef90-K0QZL1 UniRef90-UPIO0037BDE31 UniRef90-UPI000197AC1E UniRef90-R9GNQ2 UniRef90-B8CT86 UniRef90-F6SZT6 UniRef90-UPIOOO4041869 UniRef90-Q7UXNO UniRef90-UPIO0026319EE UniRef90-UPIOOO32AC1C0 UniRef90-U2HUGO UniRef90_UPIOOO35D9019 UniRef90-18XX95 UniRef90-H9JZE1 UniRef90-I6ZXE3 UniRef90-HOWYH5 UniRet90_D6WJ59 UniRef90-A8FRF2
UniRef90 W8AJG8 UniRef90_UPI000361A362 UniRef90-K3WER2 UniRef90-R9CLZ8
UniRef90 UniRef90-K3Y1A7 UniRef90-B4LRW2 UniRef90-UP100036BCA9B UniRef90-G8TKI1 UniRef90_UPI0003B30D25 UniRef90-UP10002E2582E UniRef90-J9FH44
UniRef90-19L9C2
UniRef90-R5KVJ2
UniRef90-Q02BT7
UniRet90-UPIO00300AF19 UniRef90_EOVHA4 UniRef90-X5E1Q2
UniRef90 G7UUDO
UniRef90-B4Q429
UniRef90-UPIO003B7427E
UniRef90-W9S2K8
UniRef90-A9S856 UniRef90 WoFow2 UniRef90-W6MRV9 UniRef9O-UP100037201AA
UniRefgo-UPIOOO468152 UniRef90-A0A059EG43 UniRef90-B4MUJ8 UniRef90-UPIOOO44105B2 UniRef90-L8GJ18 UniRef90_UPI0004749283 UniRef90 UPIIOOO422EF4E UniRef90-F3ZQG3 UniRef90-TICJD4 UniRef90-E9HP64 UniRet90-MORID1 UniRef90-WORCRT
UniRef90_E7RNL2 UniRef90_UPIO0042AF1EC UniRef90_A0A022QD77 UniRef90-B4HXU5 UniRef90-UPIOOO3B6141B UniRef90-W2CHF7 UniRef90-K4BIA9
Uniref90_UPIO0029B2D12

370
380
390
400
GES|VV|T G\|\|A GVVE Q N N R|VVYHSTDGDPTERH|L|FS|V|D|I|SEG


GPSEVHALLAADSPRGKVYY LATPGEPSQRNLYSVPLDGS GQWEVVNTPTFDPNANMVYFVANREALTQRHVYGVRLHGS GEWEVTETSGVDTEKGLVYFTAATPSMDHMYSNDNNDQ GDWAVDTLEFVDEATGWVYFSGRKDSVVERHLYRVNDNGG GPWAIDELLAVNEAHGKVYFSSNRDAVPDRQUYSLPLDGS GGWEVVDPSGVDLERNLVYFVATIAGPSQRHVYSVNLLDG GPWLVTR LLGVDEERRRVFFLAVGDDPYVRQLCRVDLDGT GDFDVDNLLRFNEKENVVYFHASPYNATQKYLYKTRLDGK GDWAADKLSDLNEKTGELFEASIDATPGEGLYKVSYKTP GEWGVDNVLAVDEQAGKVYDASNKDAVIDKQTYVLNLDGS GNGVVKDLVGINEAEGLVYFTANYDNPLETHLFSATLFGD SVTDVTAPLLGSLKSGSSQDHKWRGGSRQRHPVSANTVGN GNCDVTAYYGYSTAERAHYYQCASGTR RNRVICRDDAKGV WE GDYDVDGVNLIDQRNEKIYFSASPANATQKYLYQUSSKGG GNWAVDELEYYDETAGWVYFTGRKDTP PKKHLYRVSDAGG GEWVVEYFAGLSEDGETVYFEGWMTSPLERHLYAVPGDGG
 GNFDMIN PVRDNEKNNVYYFTASPDNAT QTY LYYKISLDGA
 GE WMVEQI A GVNEATGLVYFTATLDS PLESNLYCAKLLVD







 GEFTV L N VVYGYDEANDKLYY QATPGDPA QY HVY SNNDCLS GN Y DI M S V D G I D E K N G MV Y F T A S P N N A T Q K Y L Y K DA L N G N $G D W V V T D L V G V D Q K T G R V Y F A G T R D D V L A G Q V Y A D S L T A P$




 G E WEVV
 $G N W N V L Q V R R V D R K N G I L Y F T G C G R E P G D P Q Y F Y S D R M D G$
 GNYDVIQFDFYDAPTGTI YYTASPENATQTYLYKI NLSGG G N WQV LD S Q F K Y S P E Q DVV Y Y L S G G D Y G DD S L L H S V S L N G GD FVVV TTKMLEEVDTMKK R QL L F E A K G K E P G E N P Y F S H Y Y K T D
 GP Y EVVNRLLDHWD QVDNWLYF LGTPERPS QQHLYRVSARPA $S T V D P$
TWEVTRDNQWLPATRTLVYTSTEVSVNERHVYAQSIEGT D N F DVIS L N LI DEKN GLI YFMASPDN AT QS YL YKVVSI A G G HPFEV AN V VKVDEKNQTLYY LAARSGDNHMKMQLHRVVKD G
 GE WLV Q S I V G F N E K Q K E I I L T T T T Y S P P L Q S N L I A V S V V S G



 GPYEVNRLLHWDQLDNWI YFPGNSG
GE GNV T QVLSVDDA SARMLYFKEKERDPYFQHYYS ITHFDGS GNFVVYDLLGFDKARKRAI I LSAESSPDQSNLYAVDIATG


UniRef90 R7TV60 UniRef90_M1VTT5
UniRef90_W3VSC9 UniRef90-V5G0L2 UniRef90-W4WW339 UniRef90_B8M4E4
UniRef90-E6RG44 UniRef90-V4PGU2 UniRef90-Q088C2 UniRef90-H8L1D5 UniRef90-M7WL54 UniRef90_UPI0001FFDF77 UniRef90-M7XVT3 UniRef90-T1KU08 UniRef90_V4RDA0 UniRef90-B9TDC0 UniRef90-Q5K721
UniRef90 K4KH95 UniRef90-I3М337 UniRef90_R5AS40 UniRef90-K3YQ50 UniRef90_F4S2H3 UniRef90- F4CCM9
UniRef90 R9AL51 UniRef90_Q0HMI7 UniRef90_UPIO003B6E41F UniRef90_K0QZL1 UniRef90-UPIO0037BDE31 UniRef90_UPI000197AC1E UniRef90-R9GNQ2 UniRef90-B8CT86 UniRef90-F6SZT6 UniRef90-UPIO004041869 UniRef90-Q7UXNO UniRef90_UPIO0026319EE UniRef90_UPI00032AC1C0 UniRef90-U2HUG0 UniRef90_UPIO0035D9019 UniRef90_18XX95 UniRef90-H9JZE1 UniRef90-16ZXE3 UniRef90-D6WJ59 UniRef90-A8FRF2 UniRef90-W8AJG8 UniRef90_UPIO00361A362 UniRef90-K3WER2 UniRef90-R9CLZ8
UniRef90 M5SWT9 UniRef90-K3Y1A7 UniRef90-B4LRW2 UniRef90_UPI00036BCA9B UniRef90-G8TKI1 UniRef90_UPIO003B30D25 UniRef90_UPIO002E2582E UniRef90-J9FH44
UniRef90_19L9C2
UniRef90-R5KVJ2
UniRef90_Q02BT7
UniRef90-UPI000300AF19 UniRef90_EOVHA4 UniRef90-X5E1Q2
UniRef90 G7UUD0
UniRef90-B4Q429 UniRef90-UPIO003B7427E UniRef90-W9S2K8 UniRef90-W0FOW2 UniRef90-W6MRV9 UniRef90_UPI00037201AA UniRef90_UPI0004688152 UniRef90-B4MUJ8 UniRef90_UPI00044105B2 UniRef90 L8GJ18 UniRef90_UPIO004749283 UniRef90-UPIO00422EF4E UniRef90-F3ZQG3 UniRef90-T1CJD4 UniRef90-E9HP64 UniRef90-WORCR7 UniRef90-E7RNL2 UniRef90_UPI00042AF1EC UniRef90-A0A022QD77 UniRef90-B4HXU5 UniRef90_UPIO003B6141B UniRef90-W2CHF7 UniRef90-K4BIA9

TS SRQ HIDQDGC[DYSSASFSPSGQDYLDSCDGPDV|P T H LTP LT T T S S E AYYGVSFSSNAGFALLSYKGPKI PY QTLKE PVPLTDVSKPGSYDVRFDPKGAYYVLDYQGPDVPY


GEPVALTP AGGWWATTVSGGGKAFDGNYSDPATPP NASK PVRDTKQDGWHEDVFARNGKVFVDTFSDPNTPP ASMSSMAALTDTTSPGYFEASFSPKAGYYVDGYKGPEVPW TPV VVKKDTQRAGNHA DT LSRSATSYLDNFSSASQPT F NRQCLSCDELVENCTYFSASFSHSSDFFLLKCEGPGVPT WDLPLQPPKRLTHGTGRHSVILEHQLLRFDDVYDSIKSPP TELTQ
 K VEVVSEAGMHNPVFADSQSVYLDYFNSDSQPP
 KQEGSDDERDTELGGMWS 1 KATRDSPASQ SGTHKYDVSPNGKISAHSFSNTSMST
 GKAERITP A ANQSGTHSYEISPGGKFARHQFSNAKTPLL LS GQLAT T PERDSPDGTFSYSVSPTADYALESWSDFNAPQ GTQPLQAPARDTHSKGKHIVVLDHHMQSFVDIHDSCCPPR KAKRITPAEL KGTNSYTISPNGKLAI FT
 S L HPAFCVTCTEMSDGY
$K V V K L T$ K FNRQCLSCDLLENCTYFSASFSHSADFFLLKCEGPGVPK


KATRVTPDDL
 KADRVTPAEY SAEGMHSVVMDSACRTFVVVYSNGSTPP APVAVPARRFSPTQNGTNTYRIDSPNGKLAVVFSNSSVDSRS QSLPLQTPQRLTHGTGWHSVILDHQLLRFIDVHSSKSPPV
 KKTTLLTP AEGTHQUVLSPSENYFDDTYSKPNVPA DK $\square A R L T D \square A F D \quad N K A S M D G K G Q A L I V T R S A D A Q P P$
 G TPER $\square T E \square G W V N S A I A S R D G G T L V D A R S S T A Q P S$

 E TERLSKEDGVHGGTLSPDAAYVLDRWSGTEVPG PPRQLSRTPGMHAASFSADARVYVDSWSSTSVPQ
 GNQPLQAPMRLTRRKGKHVVVLDHHMRNFVDVHDSMESPP KGERVTPA ALS GVNDYTISTNGKDALLNHSSAEDAY
 INQPFDTCKESQ
 RQGQALHKPDCMTCPA FHRECLTCFLFKPHCSFYDAS $\square$ SPDSQTVLLHCAGPGVPK GSSKVSPS AGWWSASYS NLFTLNFGGNNVPT

 KRRSL DNKEGVHRPNLSTSGKYLI DNYSSPNTPR TADAP $\square R \square S R R A G T H V A S F A P D G S F Y V D T F N S P E Q P P$ KTVECDTCSHSNSTCRYSNAILSPSLEYYVHECLGPTDPY WNLP LQQPVRLTQGRGRHAVVLDHQMQRFVDVHDSLNSPP GDRRLTDAAFA F NRQCLSCDGVENCTYFSASFSHSMDYF LLKC ASHSLQAPSRLTNGKGKHVVVLDHMLQRFIDIHDSLSSPP
$G \quad L K L L T P E N E D H S V T P S P D G R Y F V D V A S T A T Q P Q$ KRTLLDNGRGVHANDGFHDRALSPDGGWDI DNYAEPTVPR


|  |  |
| :---: | :---: |
| UniRef90_R7TV60 | Y T L Y S T P T G S PlV\|EVLIEDNAEFA A NLI |
| UniRef90-M1VTT5 | Q QVIS TPSTTHARTIEDNAVLIA D R A E H E |
| UniRef90-W3VSC9 | QKVVGVDDASFELMMLE E NVLLRQMSS Q Y |
| UniRef90_V5G0L2 |  |
| UniRef90_W4WW39 | $\square \mathrm{V}$ T $\square$ N D N N H Q TVLI WN T N Q M M R T L L S R R |
| UniRef90-B8M4E4 | QKIMATPDNQYTEVVETNEQLKEMVK |
| UniRef90-E6RG44 |  |
| UniRef90_V4PGU2 | QSALYDGT GKRLRWI E ENK |
| UniRef90-Q088C2 | Q I S H N D S G K Q A WV E Q N D |
| UniRef90_H8L1D5 | QVSLR R P D G H L L NWL E A N |
| UniRef90-M7WL54 | QKLFKA D D A S F SLT L T D N A ALS S LDA Q Y Q |
| UniRef90-S3BYM3 | QKVLSTASSEFQLTLLEDNTQLAERVRK |
| UniRef90_UPI0001FFDF77 | $R S R V L D A D G R V L V E L E D A D E L A$ |
| UniRef90-M7XVT3 | S E WLS LP K H Q PL DK SED |
| UniRef90_T1KU08 |  |
| UniRef90_V4RDA0 | Q T A L Y D G T G K R L R W $\square$ E E N A |
| UniRef90_B9TDC0 |  |
| UniRef90_Q5K721 |  |
| UniRef90_K4KH95 | QTSFHT@S GER\TWL E Q N A |
| UniRef90-13M337 | VTVVH A T D R K K L F D L E T N E HVQ K A $\square$ S D R Q |
| UniRef90_R5AS40 | RYTFHTAAPKSL R TVVEDNAEVAS RYSD |
| UniRef90_K3YQ50 | V I L L S L L C G V I M PLFE Q P T V P S L K K F Q |
| UniRef90-F4S2H3 | QKLSDI DSNVEDEKFEANKYLKHRLKSM |
| UniRef90-F4CCM9 | TEIVSLPNHQE |
| UniRef90-R9AL51 |  |
| UniRef90_Q0HMI7 | Q $\triangle$ SLH GDK G Q HL A WVEE Q Q |
| UniRef90_UPI0003B6E41F |  |
| UniRef90_K0QZL1 | $\square \mathrm{D}$ IV R L P D H K TVVAVLA D N K E L R D R L |
| UniRef90_UPI00037BDE31 | QT ALYKADGERI A WVEE E |
| UniRef90_UPI000197AC1E | Q T GLYRA D G S FI T WL D E N A |
| UniRef90_R9GNQ2 | TAVVSLPEHREL L S G T T T S T NLAKTE |
| UniRef90_B8CT86 | QVSLHSES G K RLA WVE Q N E |
| UniRef90-F6SZT6 | Y I |
| UniRef90-UPI0004041869 | Q EWIS LP K H |
| UniRef90_Q7UXN0 | QRLVVLLD P Y K R L K T F D D N E L H E N LE K L |
| UniRef90_UPIO0026319EE | QVYLA DA D G K RIA WVQENA |
| UniRef90_UPI00032AC1C0 | VLLCS LED G S I I T PLY E Q Q P I P K F K K L Q |
| UniRef90_U2HUG0 |  |
| UniRef90_UPI00035D9019 | QVYLA D A T G K R L S W |
| UniRef90-18XX95 | $\square D \ 1$ D T Q G K S V NLL T |
| UniRef90_H9JZE1 |  |
| UniRef90-I6ZXE3 | A LLLYEANGE LI R E I G N S K |
| UniRef90_H0WYH5 | VTVHS T A D K R KI F DLE T N E HVQ K A $\square$ N D R Q |
| UniRef90_D6WJ59 |  |
| UniRef90-A8FRF2 | QVSLH GDK G Q HL A WVE Q N K |
| UniRef90 W8AJG8 |  |
| UniRef90_UPI000361A362 |  |
| UniRef90_K3WER2 | T A R V V N |
| UniRef90_R9CLZ8 | A A IVSLP D HKELL |
| UniRef90-M5SWT9 |  |
| UniRef90_K3Y1A7 | 1 S L C S L F D G SVM |
| UniRef90-B4LRW2 | TEI LETAAHK K $\square$ T D WE L N T A Y R A NLE |
| UniRef90_UPI00036BCA9B | V DWV S LP G |
| UniRef90_G8TKI1 | $\checkmark$ S E L H A I T G K T V V L E |
| UniRef90_UPI0003B30D25 | QS Y L A D A H G R L A Wi E E N K |
| UniRef90-UPI0002E2582E | QVWL GDSHGKRLA WIE E N |
| UniRef90-J9FH44 | K I DIVA T N G K |
| UniRef90-19L9C2 | QSY A A A T GK QLA WVEEN |
| UniRef90_R5KVJ2 | $\square \mathrm{D}$ I D $\square$ E K G K S I |
| UniRef90-Q02BT7 | T TVVLRDAA GKQI T P L E |
| UniRef90-UPI000300AF19 | K S V L R S T D G K L I C T L E |
| UniRef90-E0VHA4 | VFI FDVSTNSMLAVLDANSELDRS】FQAM |
| UniRef90-X5E1Q2 |  |
| UniRef90_G7UUD0 | QLTL HRA D GEQLA TLLVAND |
| UniRef90_B4Q429 | T R I F E A S T K T L Q M D WEP N T A Y R K Q $\square$ E Q |
| UniRef90-UPI0003B7427E | VTV LR DVR G R K R L T I E E |
| UniRef90-W9S2K8 | KVLLS LQ D G S V I M P L Y E Q P F R $\square$ P R L K K L |
| UniRef90_A9S856 | RLLL R SD T G K L L VTIVYE |
| UniRef90-W0F0W2 | GSVI S LP E H K EL |
| UniRef90-W6MRV9 | QKLVSLS |
| UniRef90_UPI00037201AA | VVKLK K D S GK T $\$ R D L  \hline UniRef90_UPI0004688152 & 1 DLV T K N K S I NLLQQS K P P Y E G Q  \hline UniRef90-A0A059EG43 & QT GL Y A S D G S L A WIS E N A  \hline UniRef90 B4MUJ8 &  \hline UniRef90_UPI00044105B2 & T T VHLLS N $\square$ T R H M T LD S G LEFRES L R Q R R |
| UniRef90_L8GJ18 | V H L H S C P RMSVSLVANA QLKEK |
| UniRef90-UPI0004749283 | Q NVVALP T H K W I |
| UniRef90_UPI000422EF4E | FTNLIDDAKGKIVAEL |
| UniRef90_UPI00037E22CB | QTGLYTA G G DLI A WV E E N A |
| UniRef90_F3ZQG3 |  |
| UniRef90-T1CJD4 | QVSV HAA D GQRLA WI EENK |
| UniRef90-E9HP64 | VEVRSLPT NKLVKLI Q V N R Q L Q |
| UniRef90-M0RID1 | RVI L C SLIH D R SVI IT |
| UniRef90_W0RCR7 | SRLVDAAS GKAVAEL |
| UniRef90-E7RNL2 | \EI I N T A T A K |
| UniRef90_UPI00042AF1EC |  |
| UniRef90_A0A022QD77 | K T V H S L LD G S L I A S LYE |
| UniRef90-B4HXU5 |  |
| UniRef90-UPI0003B6141B | TTVARSSS G Q L |
| UniRef90_W2CHF7 | ID F $\quad$ NLK T D K G T R |
| UniRef90-K4BIA9 | I S LCS L H D G N L I M H L D |
| UniRef90-UPI00029B2D12 |  |

UniRef90 C7M8E1 UniRef90-L1IQ18 UniRefefo-GBJXM7 UniRef90-R6IFD6
UniRef90-A0A024G5K7 UniRef90-Q8A2Q1 UniRef90_W5W5R0 UniRef90_M4ECF4 UniRef90-UPIO001DD077B UniRef90-I6YHZ4 UniRef90-TOYF99 UniRef90_X1XZ15 UniRef90-U2C7Y7 UniRef90-G6AFZ9 UniRef90_Q1IVN9 UniRef90-13ZBE7 UniRef90-M4NI99 UniRef90_UPI0003790DDB UniRef90 R6W1C9 UniRef90-UPIo004247DA3 UniRef90-UPIOO04722310 UniRef90 D5BD13 UniRef90- F8WVN5 UniRef90-E1FHR1 UniRef90-UPIO0047A15E4 UniRef90 G6D2N6 UniRef90 EONSZ8 UniRef90_UPI00037C12C6 UniRef90 UPI000364E85A UniRef90- UPIO0030489E2 UniRef90-F1KTX4 UniRef90-V8NK61 UniRef90 B915B8 UniRef90-A0A010YC57 UniRef90-14AON2 UniRef90 K4IAG1 UniRef90 G5GCF6 UniRef90- $\mathrm{HOH1C5}$ UniRef90-UPI00037A3689 UniRef90 F8EAY4 UniRef90-UPIOOO4694CCA UniRef90-R5PER0 UniRef90-12EQ67 UniRef90 F5JOEO UniRef90-M5X714
UniRef90_UPI000366DFC3 UniRef90 A0A017TOV3 UniRef90 UPIO00476BBAE UniRef90-R6L5Z1
UniRef90_UPI00016C475D UniRef90 J7SAJ7 UniRef90-U2HW89 UniR Ref90-F8EP20 UniRef90_14ZBK2 UniRef90_R6EWM9 UniRef90-R7NTU5 UniRef90-W4PLK7 UniRef90 C4R272 UniRee90-UPI00047A1DB5 UniRef90_UPIO003745199 UniRef90-P33894
UniRef90 T1FRJ1
UniRef90_UPI000402B9C1 UniRef90-UPIO00180CCB3 UniRef90-Q6FLK8 UniRef90-F3PU22 UniRef90-A0А023EYJ8 UniRef90-UPI0004220477 UniRef90 J9GMD7 UniRef90-UPIO0035FABE0 UniRef90-D5BKK35 UniRef90 WOTAY3 UniRef90-UPI000366FAAD UniRef90-R9CND1 UniRef90_UPI0003B7A0A9 UniRef90 L8X1F2 UniRef90-E8R5E4 UniRef90-R6VUY1 UniRef90-H1HPX8 UniRet90-T1GFX1 UniRef90-U2NPJ6 UniRef90_E4T5J4 UniRef90 L1NM63 UniRef90-J2JG04 UniR Refo-A1BAZ8
 UniRef90_G8NV12 UniRef90-K5DD45 UniRef90-TOK496 UniRef90 Q5GY47 UniRef90-G1XWY8 niRef90-K1XN32

RSFSTENVFNREFTYQDETFRFLVPPAVLNपEYDSTKKL KKSFTLEDLMPGLLPQNLYGLQWWGD VCINADDEEVKTU KKLTLEDLIPGRYAENLYGLQWWGD VCDKPSTDTDYTV
$\square T \square E R V F P G \square D G P S P R Q A K \square S P D G R Y \square T L L R N D L W G Y$ TPQWFADGRFWYRIGTRYVAV $P T V M G L K V A P D G S R V T F L R G D L W E Y$ QRПRLQDIIDGEYAPKKLNGSWIGPDEFLYQNWGEISLL KTLTLEDLIPGRYAENLYGLQWWGDECVKPSMDTVYAV KQLTIEAIFGGVLGRAPESVEWSPDGTKVSFDNGALYYV

VPKVEWLDDGHFWYVDHDHFVRM KPDTTSATFNDPGFTEDRGLAWSPDGTRVTNANGDLMAA KQFSLEDLFGGTMDPEYRNITWWGDELVLRNAEECKLV


PLSLedLTPGKyraEmprrvswagdkTtyVkgds TMTA PLTLTDILHNTLLGPVETIEWIDNDKIVLKTIDSIRIV VQSVTWLDDGHFWYRDHDHYLRM $K 乌 F T \square E D G F G T M D E N R Y A T W W G D E L V R Q D A D K C T L I$ TLSFERVFPGLDGPAPRQVKLSPDGRFLTRDRYDLWGY ETLNWIDTTNVISSVDTKFFIV RTPVT DS D TLNNGLLSPIENLEWLDADS VVIKSSEK TRIV

QKHFTLEDLNFGNMRPENRFSTWWGD ELVRTDVEKCYDI KQKLSUEDYYKGLYPETLYNLDWAGENFFYQDQRGLVFK

KKSFTLDDLMWGNПMPRS TYTSWW GNQLVELDAESVRपY KRSFSUENVLDGDFVIPENTFHFINAPQLLLSQDPGLFFT

PYWKKDGSAFWYKKNAYYYV QKSFTLEDLNYGNMVAQNRWCTWWGDGLVRQDVDACYLV


Y S NVTPQWDEGTHQFWYVRNTYVAV
RRFNDKDVLSGSFDVKKVSTFNWTPDGQFWYQNANEFVLV

KQWMEFNDFLEGTFQARSFYPYWVSGNEYVYMNSTATNKV
FTTEETLHGEFSTKEETFHFIDPPEWLKQDPGLYFTV KRPTLEDLIPGTYRTNDQGQQWWGDTCCLDSGKDEAKAV

KKPTLEELTPGLYAKNLYGVQWWGD ECTKPGVDSLFA QKQLTMADAFNRSLQPNLRQFSWMPDSK KRAESLDTLFRNKVFNTPNSFNWLNKKEFWYKNNSEYIFFV

WAPDGSTVVYRKTSFVRY KH पTMDHVFNGTFAADKRS可WVSE
KGLTLEDTNFGNMRVQNRWCTWW GNQLVRQDAEACFIV KSLLLEDLFGGTMVPKTRYTTWWGD ELVHLDTEDCFVV KTFTLEDLLSGKFNIKRFNGTWRNDESUGYKDRGFLLKY RAFSLQDKFKDKVFYANVTPQWIGSSSLFWYVQNTYILI QKRFTLEELNFGNMVPQNRHTTWW GNELVRTDANFCALI KKANAVDSLEKNKVMNTPKEFHWDGNDYVWYSNNKEFLLV KKAFTLNDVIPGNLTPKTPGLQWWED VCVRADVEA TKRI KKPTLEELTPGLYAENLYGLEYWPDGRVFYSDPDPYRLA RNSGVTFRWIGKTKVLDNGEQGFLVV

UniRef90_C7M8E1
UniRef90-L1IQ18 UniRef90_G8JXM7 UniRef90-R6IFD6 UniRef90_A0A024G5K7 UniRef90-Q8A2Q1 UniRef90_W5W5R0 UniRef90 ${ }^{-}$M4ECF4 UniRef90_UPI0001DD077B UniRef90-I6YHZ4
UniRef90 TOYF99 UniRef90-X1XZ15 UniRef90_U2C7Y7
UniRef90_G6AFZ9
UniRef90-Q1IVN9
UniRef90_I3ZBE7
UniRef90_M4NI99
UniRef90-UPI0003790DDB
UniRef90-R6W1C9
UniRef90_UPI0004247DA3
UniRef90_UPI0004722310
UniRef90-D5BDI3
UniRef90_F8WVN5
UniRef90-E1FHR1
UniRef90_UPI00047A15E4
UniRef90_G6D2N6
UniRef90-EONSZ8
UniRef90_UPI00037C12C6
UniRef90-UPI000364E85A
UniRef90-UPI00030489E2
UniRef90-F1KTX4
UniRef90-V8NK61
UniRef90-B915B8
UniRef90_A0AO10YC57
UniRef90-14AON2 UniRef90_K4IAG1 UniRef90_G5GCF6 UniRef90 HOH1C5 UniRef90_UPI00037A3689 UniRef90-F8EAY4 UniRef90-UPI0004694CCA UniRef90-R5PER0 UniRef90-I2EQ67
UniRef90_F5J0E0 UniRef90_M5X714 UniRef90_UPI000366DFC3 UniRef90-A0A017TOV3 UniRef90 UPI000476BBAE UniRef90_R6L5Z1 UniRef90_UPI00016C475D UniRef90 J7SAJ7 UniRef90-U2HW89 UniRef90-F8EP20 UniRef90-14ZBK2 UniRef90_R6EWM9 UniRef90-R7NTU5 UniRef90-W4PLK7 UniRef90-C4R272 UniRef90_UPI00047A1DB5 UniRef90_UPI0003745199 UniRef90-P33894
UniRef90-T1FRJ1
UniRef90_UPIO00402B9C1 UniRef90_UPIO00180CCB3 UniRef90-Q6FLK8 UniRef90-F3PU22 UniRef90_A0A023EYJ8 UniRef90_UPIO004220477 UniRef90-J9GMD7 UniRef90_UPIO0035FABE0 UniRef90-D5BKK35 UniRef90-WOTAY3 UniRef90-UPI000366FAAD UniRef90-R9CND1 UniRef90_UPI0003B7A0A9 UniRef90-L8X1F2 UniRef90-E8R5E4 UniRef90-R6VUY1 UniRef90-H1HPX8 UniRef90-T1GFX1 UniRef90-U2NPJ6 UniRef90-E4T5J4 UniRef90-L1NM63 UniRef90-J2JG04 UniRef90-A1BAZ8 UniRef90-F0R5R9 UniRef90_G8NV12
UniRef90-K5DD45 UniRef90-TOK496 UniRef90-Q5GY47 UniRef90-G1XWY8 UniRef90_K1XN32

SNTTYSKT LASMHFDYKQHSYE DTTDEVSYESDRDDFGTD HPANGKENVLITLQEVNELLANKKLGKLNH FRNVSFPYA GVGDT S Y MWS PTSQRLLYP LQ


DRQSGEWTMLVDSEALGSNLKGIIAYQWNADGSGVLVPLD DPGVKTRRAAFDHDALAAALSVAAGQAVTADLPIQAVQIR NRKDGADKLLVSAASLEPHGEGILDYHWAPDGKAILFPLLN SMNNLSERVLMSNTTMSSRAGSSNRFSISADRRYLLLAQN EPKTGKETVLVVTRERDNETLEKNRSGKLAPSUYHVQFPWA
 DAASGKTAPLFDGKPVDAKK $\square P V T G Y E A R P D G R$
WGGSGQTTVLVPKAKI GSMHSNAASYDWAPDAKHLLFDSN NKSNGKETTLFTEAQLNAWAKTNEDSKILNDG WAQFPYA PVIDDKKAVQVITTKELIDNQSDTAEGKEKLKSFRFVGFPYA E IIKTGVKQRLIDRERQRDYGQG $\square M E Y F W A D D S E S I L I P A S$
PNTEKETAQVLLTVKDTNANSGLGEGESVKSLTYVQFVSP NTSTPDTSVLYTKND LGGRQGHINQVIFSHDSSYI ALSYD DAATGKAEPAFDQAKLAAALGKATGKPVDAAKLGITFDVA NAVDFKVSSDLKFVLLISD
DKASGKEKTLFT DDA LNRWAGTDDQTKVR SLYYTLFPYA D DETRQWRMLVDSEKLGSSLKGDDAYQWASDGAGVLVPDD DANKQEKRIAFDQDRLAKAI QSLPDDEFSDDTKTFTFERK DVGTGKAESAFDHAKLAAALGKALGKPVSATKDGDAFA DA DTTTPPHSRVYAGEEVLARYGKVNSWSLSHDGKYMAMSYD
 NTQGKETRTIGFQEIKSKF

GATKPDFTTAEDQPKGKGDTAYHAS
FPDA TKE $\square \mathrm{DGQTHFDAKQLFDETFETVSSVQDNYEDDKVIFGTN}$ DAAKGQKRLLFDQNEMAGQLSEIFSRTFNEDLKSFKFDTD
DAATGKRK AFDHDK LAQS LEK NKKNGKETKLFGDNDGNKWIAPTKD IKKVA LYNALFPFA

NTDKEKPQVLLSGFDKDEA $\square K S L N T \square Q F S P Q S N N \square L I A T P$
G $\square T$ QYTWARRAPVLLIPQN
DPEAGTAERAFDHERLADULSGMTGEEVEPGNLRSFSYTD NADKKNRKELFDHKRLASALSNASGKEVKPEALQLLRVNP DMVKGTREVVAEDKLPKDAKPT
$T R Q N G D G S V D F \square A K Q L Y D A E Y S V E K V R \square S H R \square D K \square I F G T N$
NPTTKTRRPAFDHEQLAQK LSEATQKK $\square T P Y A D P F S T F T Y$ $D$ D T GAE NKQSGKETQLFTVSQVNQWAGPTKDIKVR SLRGASFPYA
 DSQHGRTVFNYEKDEVNGDTYTVSFVTGSPDSAKFLVACD DPSKKTKGPAFDHAKLASALNAALLASAQQQAGRTALAASA DPVGSTRAAMFDDDVMRTALQAAGVADPGNVMQQVDRVAS NAKNRNVSEVILDANKTPEGVEFLLMAPDPLKTHFVYGKD
$N \square G T N D E T A D L N G E P W S N T E K P F \quad S W K \square S A D Q N Y \square A T F Y M$ EQKTGQARQLINGRTFEQK IGKTTSS ITQUNYPQTKAAI ATM NPKTGKETVLFTRETVNRALKDAGLKEM PHLNNGKYPWA ST■TDNVTRLVSNHTITQLNVKWYQASHDLKYVLLRHN
QPQTGKET LLLTREQ DNKVLAEKNAGKDSHFYN VRFPWN RPTTNGPDELVRGAVGAPLRPVLTLAELNQADQFPTDTWV NAETLEKETAFDHEKLARADSKLVDKKIKSDEAKSNLRFQ
KLKDRDFSVLISNTRFDGANHELESIIVAFSLDYALLGTS
DPATGRKRDMSRAVWDKDNKGFSYTKTSPDG $\quad$ VPMN DPATGRKVPAFDEETVDP LLRLPFERDDFADDGKAFAFEDD

 DKKSGKERRDFADNEVNQWAGPTKSRKV HS LYNAQFPYA NKTTAKERKLFTLSELNKWLRHLYYDDSFPETRKPLVWLND
 DAQKKTHTHLFDHNKLALELTLATDKPVDA
 EAGTGRVAPDFDRKA GQLABIAALPVAPDKTLSTLVFT EAGTGRVAPLFDRKA $N$ N DPAHGTQAPAFDNAKLATALTAVSKRAVSAKHLGVTGYTT
 DAATGRQEQLFDPLAMNAALNTIVS IAMVPGDGRSULVAKP EAASGRNTLAFDHARLAAALTQAGAKAVDARLSFQLAKLG

UniRef90_C7M8E1 UniRef90-L1IQ18 UniRef90-G8JXM7 UniRef90-R6IFD6 UniRef90_A0A024G5K7 UniRef90_O8A2O1 UniRef90-W5W5RO UniRef90-M4ECF4 UniRef90-UPIIO001DD077B UniRef90-I6YHZ4
UniRef90 TOYF99 UniRef90-X1XZ15 UniRef90-U2C7Y7 UniRef90-G6AFZ9 UniRef90-Q1IVN9 UniRef90-13ZBE7
UniRef90
U4NI99 UniRef90-UPI0003790DDB UniRef90-R6W1C9 UniRef90-UPIO004247DA3 UniRef90-UPIOO04722310 UniRef90 D5BDI3 UniRef90-F8WVN5 UniRef90-E1FHR1 1 UniRef90-UPI00047A15E4 UniRef90-G6D2N6 UniRef90-EONSZ8 UniRef90-UPI00037C12C6 UniRef90-UP1000364E85A UniRef90-UPI00030489E2 UniRef90-F1KTX4 UniRef90-V8NK61 UniRef90-B915B8 UniRef90-A0A010YC57 UniRef90-I4AON2 UniRet90_K4IAG1 UniRef90_G5GCF6 UniRef90-HOH1C5 UniRef90-UPI00037A3689 UniRef90- F8EAY4 UniRef90-UP10004694CCA UniRef90-R5PER0 UniRef90-12EQ67 UniRef90_F5JOEO UniRef90_UPI000366DFC3 UniRef90 A0A017TOV3 UniRef90-UPI000476BBAE UniRef90_R6L5Z1 UniRef90-UPIO0016C475D UniRef90-J7SAJ7 UniRef90-U2HW89 UniRef90-F8EP20 UniRef90-14ZBK2 UniRef90 R6EWM9 UniRef90 RTNTU5
UniRef90
W4PLK UniRef90 C4R272 UniRef90-UPIO0047A1DB5 UniRef90_UPIO003745199 UniRef90-P33894
UniRef90-T1FRJ1
UniRef90-UPIO00402B9C1
UniRef90-UP1000180CCB3 UniRef90-Q6FLK8 UniRef90- F3PU22 UniRef90-A0АогЗЕҮJ8 UniRef90_UPIO004220477 UniRef90_-99GMD7 UniRef90-UPIOOO35FABEO UniRef90-D5BK33 UniRef90- WотAY3 UniRef90 UPIOOO366FAAD UniRef90_R9CND1 UniRef90-UPIo003B7A0A9 UniRef90-L8X1F2 UniRef90-E8R5E4 UniRefogo-R6VUY1 UniRef90-T1GFX1 UniRef90-U2NPJ6 UniRef90-E4T5J4 UniRef90-L1NM63 UniRet90-J2JGO4 Uniinefol-A1BAZ8 UniRef90-FOR5R9 UniRef90-G8NV12 UniRef90-K5DD45
UniRef90
TOK496 UniRef90-Q5GY47 UniRef90-G1XWY8 UniRef90_K1XN32

GKEEMVLKVDNTYYRYNYERKNVLSSDTDPQGAENAEYNP P 1 DARDS LVDEFRYSSRGHYWTKEVDSGKVYPTSPDPVKVSYCDFSP EKMML VNTTSNKVLTDLTKKEITWSQPLSPKAANQDWNK GDLYUQEDVGSELVLL FDRLSTGVAGGADDPQFSP DKPQMLLKVSGKYIVYDFENNRIVSTGKLKDKAANEDYCV AGNAVEFFAFDEYWRCHLDSYACERAKFTPPGNPLDVPSP ADDTVAGAFGVYLAKLDGTVVTRLTDTEESELNPKLSP GKDYL NKTQVLLNTGNKYITYDFKTNQVVGTAVKAEDDENKEYCA DRP【ALVQNGHEDIFVNFKTHKTEKKQERKQNTQARDWNQ
VD $\square$ AVRGKHYVCDLAAVEASCVDRTALVKTGKEPGALSP GALLLYSLKNGLAISVEKGTASGDDPKFAP GKSLVLTANKQERMLTDFKKKTVVWRQASK GQEFADWNN DQSUVMLTNGSDTYLYNFKENKVEVTYTFPKETSNFDFTK GQLYHYTLATGKUKALADGNKVATDARFSP ESNNLUSPEKDYDYDFVNKKGKPKEEQRGSWTEVASP DRKFQSGNAMTYLIYSMQSQTFASVGPQGTGDQLIFVWNP ADGQLDVSLRGKHYLCDLKGEGVCAPPKHDAGDEPGVLSP
VRPGWRHARLARYHVYDVITRNKIPDSPIDDDLQYAEWSP GRPGWRHARLLARYHMYDVITRNKIVMSPDEDDLQYAEWSP DT WWKCY GE GDLFLAKLDGM VTRLTDTEGTELINPQLSS PDGRLDVSLKGRHYLCDMKGKATRDENVDGVGNEPMVLSP

## LK LTPSSALSPVIDPHVSP

 NKDLLLVKNENSRFLIDFKRHKLVWQQS CKDESNTDWNS KNNQLFFKAGNTYYAWD $\square K N D K N U S \square K \square P E N A E N A E \square D K$KKTEVLLRTSDTNFLYNWKTKKTVWQAPRERGTGHVEFNA LIEPEFRHSSKGYYWVKDLSTGAI EPDLPPEEKLSYAHFSP KNLFTFHVDSDNFTYNLNGNKLDKGDSGQKDERWKAFSP SKYVLYNPADGKKSTANSKKELLEGVAVAPAPPKUETLSP GKStVVLSNGSKTYMVDFKKHKLDNEQDWNDGETFGEANA DK

GDVF LRD
ESGT向TLTETPAPEDDPQCR GGSATQFTVQGKEYTCT पS SYECSAENA TPRNW NESISP SLDTLRFVFGNQRWMYATRKNQLVWMERDDEKEAAPVTSP DQPGFRHSSKPKKKRFDAADEGGDTFVRDAQPPRRGAESP GKDNTEFSAEGFVWTYTLASNSLVKKEPVRPQEQRPVFSP NKSTVAVSNGKSVYMVDFKAHKVVDTDELQDDVQARDYQY DKPLVVINTGERIYTIDFKSGSLKKCNEFVDDEYVLEMNA EKWMLVNTSTHKVLI DCDKKEIITWSQPIAAKAANQDWNK NKTHVLLNTGNKYITYDFKTNQVVHTLEIQAKAANKDYCA YEKHWRHSTFAKYFDYDKESDQSFVPVYDDKALSFVEWSP GDKIITFSMDGRRWHCDLSGCAPADKTSKEGQDVPTAVSP GDDGLRDTMRVDQRVAACTGPMPCKVQSSPAADPRDLPAP YKKNWRHSYSADYY DFDKNGNKTYHLTEGNMRLDFVTWAP
 KTDGYDYVRTFSCDTYNTNGTKQKQPDFPTENEQKFQWSP MEKQYRHSSKAYYWLLDUHSGKYTPIRPKEDKDRYAHFSP $\square K Q E F R N T F \square A H Y T V Y D V K N D H H \square P P K V Q Q S K V R A A K W C G$
DKPYLLLFAAGKLTTYDFKNNE\|VNSTALVRYGTNDDFCA DANTLLVTRQSSVYRLNTATKQASRAFGYDAA ENVELDP
 VQVNLQTKTKNEAKILAQTNDPVGAVLAPPARKNNSVASP EERWLTDYTCGKAPRTTQPRGFGVVRDPRVDADNHARLSP MDAHFLSF LQVTPLVWCMPGRPLVELFRAGAAALISFRSP GDLYLQEG DKSUVVIREGHTDYTFDFKKKALLSDRQDDGD DVETCA GKQCMLFNWKHKKVLWKGDVS AKGAEVQDFNTV Y IK FRMSFLAQYDLLNLQTGLITELTVNNKQEYMATWS P A LDSLYFVYNSYNWTYADKQNSLKKGDKDTEREGKPVISP AQSLVLVNNGKERQLINWKTKRVVWKQS ALNQTATDWNS TDTLKLSCNLNTYELTKDKGGYKKTLKKEDYWGGNPVGSP ARDATADEFRLDERLWRATRDGLVLTDLGPVAAPAENVAP GYVGDEEKSESYVFFYDFVQKKLTNMFRIDQENAANFDFCK VDLGWNKFHCDAAVVACTAVTAPKPAAGKPAGSKAPFDSP DKTEVLLPRNVRYAVYNWKKGEVIGRDDLPKEPSANYDYA
GAECRWPQGVGGCDVPTQTYRCDLPVTSTPIDAADLVESP


UniRef90_C7M8E1 UniRef90-L1IQI8 UniRef90_G8JXM7 UniRef90_R6IFD6 UniRef90_A0A024G5K7 UniRef90_Q8A2Q1 UniRef90-W5W5R0 UniRef90_M4ECF4 UniRef90_UPI0001DD077B UniRef90-I6YHZ4
UniRef90 TOYF99 UniRef90-X1XZ15 UniRef90_U2C7Y7 UniRef90_G6AFZ9 UniRef90_Q1IVN9 UniRef90_I3ZBE7
UniRef90_M4NI99 UniRef90-UPI0003790DDB UniRef90-R6W1C9 UniRef90_UPIO004247DA3 UniRef90_UPIO004722310 UniRef90_D5BDI3 UniRef90-F8WVN5 UniRef90-E1FHR1 UniRef90_UPI00047A15E4 UniRef90_G6D2N6 UniRef90-EONSZ8 UniRef90_UPI00037C12C6 UniRef90-UPI000364E85A
UniRef90-UPI00030489E2
UniRef90-F1KTX4
UniRef90-V8NK61
UniRef90- B915B8
UniRef90-A0A010YC57
UniRef90-14AON2
UniRef90_K4IAG1
UniRef90_G5GCF6
UniRef90-HOH1C5
UniRef90_UPI00037A3689
UniRef90 F8EAY4
UniRef90-UPIO004694CCA
UniRef90-R5PER0
UniRef90-I2EQ67
UniRef90-F5J0E0
UniRef90-M5X714
UniRef90_UPI000366DFC3
UniRef90-A0A017TOV3
UniRef90_UPIO00476BBAE
UniRef90-R6L5Z1
UniRef90_UPI00016C475D
UniRef90-J7SAJ7
UniRef90-U2HW89
UniRef90-F8EP20
UniRef90_I4ZBK2
UniRef90-R6EWM9
UniRef90-R7NTU5
UniRef90 W4PLK7
UniRef90-C4R272
UniRef90_UPI00047A1DB5
UniRef90_UPI0003745199
UniRef90-P33894
UniRef90-T1FRJ1
UniRef90-UPIO00402B9C1
UniRef90_UPI000180CCB3
UniRef90_Q6FLK8
UniRef90-F3PU22
UniRef90_A0A023EYJ8
UniRef90_UPIO004220477
UniRef90-J9GMD7
UniRef90_UPIO0035FABE0
UniRef90-D5BKK35
UniRef90_UPIO00366FAAD
UniRef90-R9CND1
UniRef90-UPI0003B7A0A9
UniRef90_L8X1F2
UniRef90-E8R5E4
UniRef90-R6VUY1
UniRef90-T1GFX1
UniRef90-U2NPJ6
UniRef90-E4T5J4
UniRef90-L1NM63
UniRef90-J2JG04
UniRef90_A1BAZ8
UniRef90-F0R5R9
UniRef90-G8NV12
UniRef90-K5DD45
UniRef90-TOK496
UniRef90-Q5GY47
UniRef90-G1XWY8
UniRef90_K1XN32

|  |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

DGTMLAY RRDSELHVLNLLYNESKQLTHGAQGNTQTHGLA NSRATAFVKNNNLFVNDCNGKTAQISTDGSYDIVYG NTNRVAFTMENNLYVAQPNGGK LLQVTNS KDKNUVS
ASRSEAYTKNYNLYLR TAEGRDHTISTDGSRELLYGT A YKY IVFVYESNLFLQSVSARYAKKLTEDGSKEVV NAKP DSSY VFAKNHNLYLMDPPDSTEHQLTDDGERWFSY A QW DGKKTVFIVRNWNLWMKDLNTGKETALTTDGGVKDFGYAT DN DGKNEILIRGGNLFVVDLATKAETQLSTDGNADKPYG

 DGTMLGYVKDCELHVLNDLCNESKQLTYGARPRGNDHGLIA
DQSKVVFIKDWNLWMRDLASGDEKQLTNDGQENYGYATDN


$D G K Y T A Y I$
$D$
$D$ NYNFIYFVYENNIYGQPVNHNVAPMSLTTDGSGAVRNGKP DGKHVAFTKKSNLFSVDVATGTEVQYTNDGTDVIY NGWS
DSTRTAFVKNYNLYVRVEKTKKETQLSFDGSEGDYYSG
QTHATAYVQDNQLYVVD PDGAEHKLTEDGSADVVYG


SGDHVVFVFENNVYLKQLSTLEVKQVTFDGDES $\square Y$ NGKP
DGKKAVFVRSWNLWMRDTATGKETQLTSDGVKDYGYGTDN


KEERWSYVYRNNLYYQAGVDGTVRQITHTDKEPFKYNGDP
D S A Y I A Y TK S N D


DGKKLAYI KDWNLWMKNIDTGEETQLTKDGDENYGYATDN
ANGKVAYTLKNNLYDDDQADTHEPEGIVCG
TRTRAAYTKAQNLYVSDA GRENEAVTTETNPNVLNGQA
DQKYTAF IKNSNLYVKDSKTKEETQLSFDGTKG
NYNY LYFVHENDLYVQR DRDPNDVRRVSFDGSKT DNGRT
DGTAFVSTAGGNI LLRSAADNRTVALTTDGTPEHEYRFDL
DGKKLAY LDNYNLWVEDTATHTKKQLTYDGDKDFGYATDN
DGRWEA HVENFNIAI RRAGTLDWTRISSDGSAGN
DVTPLRLTYSGNATL FHGVP
RGDRVAFVRDGELVVLDLTTRRETADTA GAEEGMVHGLA ASEAVAYLKDDNLYVQR GVKEWQLSADGSR SKALAYVKDHQLHVVD AHGNDHQVTTDGSRELVYG

 ASRAVAFVRDNNLYI TD KDGNTRQLTFDGSR NUVY D S Li H A A K K N Y NLYIKDKKTKAETQLSYDGSKG
DHSARLVIRDHNLWLVDHSGKRP QLTSDGEAGNGYGGFD
ENGYLAYTA GDHLYIANHGDSTAVSPHDTGGKEDDNDGVY
DKKLAAFDRDNNLWVRVEATGEERQLTRDGVKDFGYATDN
$\square$ KKNLAYTVKNNLYVNGRRDTNEPEGIVCG
DRKRALFIRDHNLWLREVDSGAERQLTTGGVEGFAYGGQD
DGRWRAWVERANLIIAPVGSNERSVLSHDGSAEDYYA
DGRWEALILNQNLALAEVATGUVT PLSTDGSEGDFYDGET

UniRef90_C7M8E1 UniRef90-L1IQI8 UniRef90_G8JXM7 UniRef90-R6IFD6 UniRef90_A0A024G5K7 UniRef90-Q8A2Q1 UniRef90_W5W5R0 UniRef90-M4ECF4 UniRef90_UPI0001DD077B UniRef90-I6YHZ4
UniRef90 TOYF99 UniRef90-X1XZ15 UniRef90_U2C7Y7
UniRef90_G6AFZ9
UniRef90_Q1IVN9
UniRef90-I3ZBE7
UniRef90-M4NI99
UniRef90-UPI0003790DDB
UniRef90-R6W1C9
UniRef90_UPIO004247DA3
UniRef90_UPI0004722310
UniRef90-D5BDI3
UniRef90-F8WVN5
UniRef90-E1FHR1
UniRef90_UPI00047A15E4
UniRef90_G6D2N6 UniRef90-EONSZ8 UniRef90_UPI00037C12C6 UniRef90_UPI000364E85A UniRef90_UPIO0030489E2 UniRef90-F1KTX4
UniRef90 V8NK61 UniRef90-B915B8 UniRef90_A0AO10YC57 UniRef90-14AON2 UniRef90-K4IAG1 UniRef90-G5GCF6 UniRef90-HOH1C5 UniRef90_UPI00037A3689 UniRef90-F8EAY4 UniRef90-UPIO004694CCA UniRef90-R5PER0 UniRef90-I2EQ67 UniRef90-F5JOEO UniRef90-M5X714 UniRef90_UPI000366DFC3 UniRef90-A0A017TOV3 UniRef90_UPI000476BBAE UniRef90_R6L5Z1 UniRef90_UPIO0016C475D UniRef90-J7SAJ7 UniRef90_U2HW89
UniRef90-F8EP20
UniRef90_I4ZBK2 UniRef90-R6EWM9 UniRef90-R7NTU5
UniRef90- W4P K7 UniRef90-C4R272 UniRef90_UP100047A1DB5 UniRef90-UPIO003745199 UniRef90-P33894
UniRef90-T1FRJ1
UniRef90_UPI000402B9C1 UniRef90_UPIO00180CCB3 UniRef90-Q6FLK8 UniRef90-F3PU22 UniRef90_A0A023EYJ8 UniRef90_UPI0004220477 UniRef90-J9GMD7 UniRef90_UPI00035FABE0 UniRef90-D5BK35 UniRef90-WOTAY3 UniRef90-UPIO00366FAAD UniRef90-R9CND1 UniRef90_UPI0003B7A0A9 UniRef90_L8X1F2 UniRef90-E8R5E4 UniRef90-R6VUY1 UniRef90-H1HPX8 UniRef90-T1GFX1 UniRef90-U2NPJ6 UniRef90-E4T5J4 UniRef90_L1NM63 UniRef90-J2JG04
UniRef90 A1BAZ8 UniRef90-FOR5R9 UniRef90_G8NV12 UniRef90-K5DD45
UniRef90- ${ }^{-10 K 496}$ UniRef90-Q5GY47 UniRef90-G1XWY8


EY $\square A Q E E M D R K N$ GYWWS $\square D S K F \prod A F T Q V D S S E \prod P D F R \prod M$ QSVHRDEFGTYKGTFWNKAGNKLAFYRMDQSMVTDYPLV
 SVHRDEFGYSKGTFFSPSGKLLAFTRMDQSMVADYPQV
 SDGDTSTTKKMRPRITWFEDSKKFWVKRQDKRKVDE



UniRef90_C7M8E1 UniRef90-L1IQ18 UniRef90_G8JXM7 UniRef90-R6IFD6 UniRef90 A0A024G5K7 UniRef90-Q8A2Q1 UniRef90-W5W5R0 UniRef90-M4ECF4 UniRef90_UPI0001DD077B UniRef90-I6YHZ4
UniRef90 TOYF99 UniRef90-TOYF99 UniRef90_X1XZ15
UniRef90_U2C7Y7 UniRef90_G6AFZ9 UniRef90-Q1IVN9 UniRef90_I3ZBE7
UniRef90_M4NI99 UniRef90-UPI0003790DDB UniRef90-R6W1C9 UniRef90_UPIO004247DA3 UniRef90_UPI0004722310 UniRef90-D5BDI3 UniRef90-F8WVN5 UniRef90-E1FHR1 UniRef90_UPI00047A15E4 UniRef90-G6D2N6 UniRef90-EONSZ8 UniRef90_UPI00037C12C6 UniRef90_UPI000364E85A UniRef90-UPI00030489E2 UniRef90-F1KTX4
UniRef90_V8NK61
UniRef90-B915B8
UniRef90_A0AO10YC57
UniRef90_-14A0N2
UniRef90 ${ }^{\text {K4IAG1 }}$
UniRef90-G5GCF6
UniRef90-HOH1C5
UniRef90_UPI00037A3689
UniRef90- F8EAY4
UniRef90-UPI0004694CCA
UniRef90-R5PER0
UniRef90-I2EQ67
UniRef90-F5J0E0
UniRef90-M5X714
UniRef90_UPI000366DFC3
UniRef90-A0A017T0V3
UniRef90_UPI000476BBAE
UniRef90_R6L5Z1
UniRef90_UPIO0016C475D
UniRef90-J7SAJ7
UniRef90-U2HW89
UniRef90-F8EP20
UniRef90_I4ZBK2
UniRef90-R6EWM9
UniRef90-R7NTU5
UniRef90 W4PLK7
UniRef90_C4R272
UniRef90_UPI00047A1DB5
UniRef90_UPI0003745199
UniRef90-P33894
UniRef90-T1FRJ1
UniRef90-UPI000402B9C1
UniRef90_UPI000180CCB3
UniRef90-Q6FLK8
UniRef90-F3PU22
UniRef90_A0A023EYJ8
UniRef90_UPI0004220477
UniRef90-J9GMD7
UniRef90_UPIO0035FABE0
UniRef90-D5BKK35
UniRef90-W0TAY3
UniRef90-UPI000366FAAD
UniRef90-R9CND1
UniRef90_UPIO003B7A0A9
UniRef90_L8X1F2
UniRef90-E8R5E4
UniRef90 R6VUY1
UniRef90-H1HPX8
Uni
UniRef90-T1GGFX1
UniRef90-U2NPJ6
UniRef90-E4T5J4
UniRef90_L1NM63
UniRef90-J2JG04
UniRef90_A1BAZ8
UniRef90_GRNV9
UniRef90_G8NV12
UniRef90-K5DD45
UniRef90-TOK496
UniRef90-Q5GY47
UniRef90-G1XWY8
UniRef90_K1XN32
 HQGSDKVGEAAQEDHHYPFAGASNPRVRFGVVNSDGSSLQ
 VNTSTRDATLEPDKYPMAGMTSHKVTVGVYNATQKTV DIT ARVGEVNNVRYPMAGMTSHQVKVGVYNPSTGKTD
EARPADGGAPQPHTQRYPYADETMPLAELVVLDLAAGTVV
HQGKSSVGADAQEDHAYPFAGADNSTVRLGVVSSSGGGKT

 DWP S S N NG TDTLKTRVYPKPGTSNPTVTVNVADDTDPKS
 DYIPTQA TVDEEKFPKPGDPNPSVKLGVVSATGGKTK YLVGTNLGHPTLDAWHYPLPGDKDDTMIERVI DAAKTTRDL
 PQVNTFEREATYEPDKYPMCGMTSHKVTIGVYDMKTGKTV DIS ARVAEDKDDKYPMAGMKSHQVTVGIFNRSTQQTV E Y Y A D G G
DTSTRTAQ
DFGQQQYPADNKKNYKKTGAGMKSHHVTVGVFNPATHETV WVSTNVGHPKLEKWKYPLVGDEHDTMIERVIDVPSKQKM WYGQEPPAYPALRTLRYPKMNTNNPAVTVYVVSLKTPKFL DUG DTRIATAAPTKYPMAGETTHKVSVGVYDMKSGKTV ESSPEDQLLPELHKПEYLRPGDALPIHRPALFDVKEKQ VGTNVGHPKVEKWKYPLVGDKDVTMDERVIDVDARKNM VF QRKQYPSMNSVPYPKTGV ERLPRIALSUWNKATKEDR I PMFTGSGYPKAEAYHYPKVGTENPSISLHAVVLNGPPHV HQGKSSVGSEAQEDHPYPFAGASNVKVRLGVVSVHGDSIT DIN

## DLN

WYKKEYAEYPG MP $\mathrm{Y} K \mathrm{~K}$
$Y \mathrm{Y}$ DIUSQRTAAY
 AGMTSHKVT GIFNPATDKTV
 KTTVGAPELEEWKYPPTDSAVIKDHRVDIGVTESPKVDRL LSSVPGTTRGELKSREYAQPGDDFTAYQPYIFNISTKTAII DIPEVGFNHPETESCKYPMTGETSHKVTVGVYDVKADKVI DIS HQGKSSVGSEAQEDHPYPFAGASNVKVRLGVGVSSSGGP GY RGGNPDQMQQRYPAAGQENVQUERLIIDVDNGEMV VSTKVGHPNVQDWKYPLPGDSLIFRLERVAINLEPTPR ESSPADQLQPKLHKQEYAKPGDELPFKLPCLYEVET QFT DGQQYTPFDHLYYPKPGTRNPQVTLYLFNLDGTIYA P $\square Y V S K G Q N G Y$ KETIYPKAGQSNPEVKUGFVKVEG RSYPEDQLQPKLEERDYQKPGDALPERRPQLFLVEEQKQL RSSPEDQLQPKLESRDYDKPGDALDVRRPQLFLVEEQKQL NIPDGKSRDATAAPEKYPMAGETSHKVTVGVFDTNTGKTV DVNTTTRUATLEPDKYPMAGMTSHKVTVGVYNPATEKTV HFFEETSKYPVIDRLKYPKPGFDNPLVSLFSYNVAKQKLE ATAPATGFRPVVHEVRLGLLGDVEQVR RYTNMNEAYLSDTKIKYPKPGFQNPQFDLFLVNLQNGIIY DFKNHSYVYEDWVKITYPKAGFKDHAGKVVSTSNVTLHVF PGYSSEGQHGFDEETRYPKPGDKNPEVKLGFVAADGGNTT KYALLKKENKDK DTTAARTA VD P V WMDNPNSEFP
D T T
ESSPKDQLOPK
$\qquad$
PQVHNLKREDEVVHRYHAQAGGQLERTTLVVGDSYGRAPV
RSSPRDQLLQPELATQLYPKPGDA
VYNPTDPYGGDPDK DKYPKPGYGNPLVQVAVCDLDADQGT YPAADESDPRRLETHRYPFAGEANARVALAVVPVNGGPAR N T

ESSPSDQFQPKLQTRDYLKPGDQLP
EATPPDGSRPRLHSFPYPVPGDEHGALSELWF TDRNGQRV PQVNTTTRDATLVPDKYPMAGMTSHKVTVGIYHVKTGKTI PVTNRHP D 1 T

A
TEYLDPEGGRPI DHTGRLPLASDERYPDATLDITDMAAGT

| EPKLHTQLYPKPGDAVDQEQPVLFHV |  |  |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

$\mathrm{Y}\|\mathrm{L}\| \mathrm{DT}$
WYDLTAR ETNVEED YLKAG
INEPGWMRFETVDOP QPEEDFYDSRVNWLPDQS GGVQRLNRS $Y \mathrm{~L} N \mathrm{~A} G$ RAQVEP LDPMPMVSPDPTDRYFTNIS
T $\square$ WMDLVCGGRANNLKA

 TVIVVRQQTEPTPDMHNVALIYAWWSSADAVHYLHQS $R M N K$ AQ ATPP YLARVNWLPDAKAL TYQWLA YLEMG $\quad$ DPTDRYFTNISWSPDER SLFLIVEVN YLQAG WI KRELPATDAYISRFGWVHDGLLYAFVLNRP KMPPDQHRSSLCDDISCGGSWEDVQWSTDAKTLAFV STS
 YLKAG FLKTGTP WL D LGKQ K L N I PA D FLKTGTP ILGK
 HA QFN S F $P$ Y $\downarrow$ Q T G Y L Q TG $K V D \square G L N \square D T Y$ VARVD

RMHVALR R HESLMAYDFSAS WVTVYGRDHLI AVFANRY W MDLEMTPPDDPRMRDYY TGMVKWATSTKI AVNWLNR Y LDAG
 FFFHY $\qquad$
DPTDRYFTNPSWAPDEKTTYLLNMP

 VLLDTKWEDQSLGGAYFNQGGIYQTEKSD
 YLKAGDPTDRYFTNDAWSPDC
WAD
N DK N

NDKNEQYFGWPQWLPD K K $\quad$ GYMF E GLM R R D YLKTGTP DTWMDLLCGGTDQPDSEEEYLARVNWMHGNALMAQVLN RFDMPSDDRRGCDDDSCTGTFDDNQWDNDGKALVFV STP WLT F PK GKEAE - VK DK EPDMQR GRGDDPSTDLFDDHVA
$\qquad$
$\square$ NTMTSQDDEF
PVDDAL
YLQTG
Y K A G
YLKA G
YLEMG
KLN【GAAVS LGEDFVLY KMPPDQHRSTICDDVSCNGGWEDLKWDDNSFFLSKFTDRT EMDGATRS $\square P V P E G W H A L T E A G V L G W S A D A G K V Y T A D A R Y$ S $\square$ NTGGQ KDSILYNGKWISPDTFRFEDTDRNS FEDPN $\square$ T $\square K P P K N L I G E Y H Y Y \square Q V V W K T E T E V E V T W T N R K$ WADFNPKEDQYF GWPVWRD
QLK TLNFSSWSDGYYLNSVTWRGNHILDPTWKNRIT
TVTTDLEL
Y L NTG
YLNTG DPT

Y L K A G
QPILYYAKFVSP

GAFDDNQSQDSRELAFV TS $F L Q T G \quad$ EPREQYLTNLSWSPDEQR VY L A VLNN HV S SKKH $\square$ P $\square$ AT T $\square F N A Q F S$ S KI ENT

NHEDKSLLYYAKWL WLDLG EATDSYPVHAAWLPSGDQL VVFVLS $K M K P D F H R G T D S D D D A S S G T F D D D D W N P N G S E I A F V$
$H V A D G K Q D P V P G D L F P N P Y D M S R L R W A K D S R F V S F V Y S E S$ VKNATTILSWDKQLKPEDQUVSEVAWVGNETLIVREVGRE RLD DAVGM EDFYLARVDWETETRVLVQTLSRD YLKAGDPTDRYFTN YLATG DPTD
$Y$ YKA G VASNDL NTS S Y Y IITTVVSWVN YLQTGDPTNRYFTNDAWSP DKKIIYLIEI NRT VVASKKQ PVATDLFQEQYDLSGDEWKDDSSSFTFEYNQ PARMDRLVSFG ANPLISYPAWWSDNGGHFYLHEGS Y LQAG
RLKMPPDQHRSTDCDDVSCSWDDVQFAPDGKHLAFVSS S Y L N T G
 VTPAATDPQTLADGAVVS $\square Y$ YTGTVWWS GTEVWYLGTKRG SVAMTLL

UniRef90_C7M8E1 UniRef90-L11Q18 UniRef90-GBJXM7 UniRef90-R6IFD6
UniRef90-A0AO24G5K7 UniRef90-Q8A2Q1 UniRef90_W5W5R0 UniRef90_M4ECF4 UniRef90-UP10001DD077B UniRef90-I6YHZ4
UniRef90 TOYF99 UniRef90-X1XZ15 UniRef90-U2C7Y7
UniRet90-G6AFZ9
UniRef90-Q1IVN9 UniRef90-13ZBE7
UniRef90-M4NI99 UniRef90-UPIO003790DDB UniRef90-R6W1C9 UniRef90-UPIO004247DA3 UniRef90_UPIO004722310 UniRef90-D5BDI3 UniRef90-F8WVN5 UniRef90-E1FHR1 UniRef90-UPIO0047A15E4 UniRef90-G6D2N6 UniRef90-EONSZ8 UniRef90-UP100037C12C6 UniRef90-UPI000364E85A UniRef90-UPIO0030489E2 UniRef90-F1KTX4 UniRef90-V8NK61 UniRef90-A0A010YC57 UniRef90-I4AON2 UniRef90-K4IAG1 UniRef90_G5GCF6 UniRef90-HOH1C5
UniRef90
YPIOOO3 UniRef90- F8EAY4 UniRef90-UP10004694CCA UniRef90-R5PER0 UniRef90-12EQ67 UniRef90-F5JOEO
UniRef90_M5X714
UniRef90 UPIO00366DFC3 UniRef90-A0A017TOV3 UniRef90 UPIO00476BBAE UniRef90-R6L5Z1 UniRef90-UPI00016C475D UniRef90 J7SAJ7 UniRef90-U2HW89 UniR Ref90-F8EP20 UniRef90_14ZBK2 UniRef90_R6EWM9 UniRef90 RTNTU5
UniRef90
W4PLK UniRef90-C4R272 UniRef90-UP100047A1DB5 UniRef90-UPIO003745199 UniRef90-P33894
UniRef90-T1FR.J1
UniRef90-UPIO00402B9C1 UniRef90-UP1000180CCB3 UniRef90_O6FLK8 UniRef90 F3PU22 UniRef90-A0A023EYJ8 UniRef90_UPIO004220477 UniRef90_-99GMD7 UniRef90-UPIIOOO35FABE0 UniRef90-D5BK335 UniRef90-UPI000366FAAD UniRef90_R9CND1 UniRef90-UPIO003B7A0A9 UniRef90_L8X1F2 UniRef90-E8R5E4 UniRefogo-R6VUY1 UniRef90-H1HPX8 UniRef90-T1GFX1
UniRef90-U2NPJ6 UniRef90-E4T5J4 UniRef90-L1NM63 UniRet90-J2JGO4 Uniinefol-A1BAZ8 UniRef90-G8NV12 UniRef90-K5DD45 UniRef90-TOK496 UniRef90-Q5GY47 UniRef90-G1XWY8

QNH FALLNRYDARTGKKVNTTF EERNAKWVEPEKP QTELEELVRIFPDSKEMKTVFVEK SNSYGGWEFWINGHNM SRIMRVKIYDLHTGSCKTVRTIDSNSYGGWIEKVKKDFDP QTE HTFIRFDTSTGEGIVLLQERSSVWVNVHYLYRGLE RDQNHAVLCQYDATTGK
位
 QNLSVVTLC RDQNHAKLCQYDAENGRLVRVLYEEMHEKYVEPQH
RDQNDCRLVSYDATTGAKLKELYHETDEKFVEPLH
QNKL DLYLVDAKSGRTQVAMTETSPSWDETN
RDHKREDVRUADVATGEVRDVFHEEAATYFESGYYESD
RDHMHRRLYFADASNGRTRLALEETDEKFFDESYDVTDSG RDQNDCRLTAYDAETGEKTGELYREVDEKYVEPGN
QD TCKVARYDANSGKLDATLFVETHPKYVEPEHPVL
QQT LHLVKQALDSDTPAQTLLL TESSQAWVNLH
RDHKKVTLRVANVETGEVRDIFTEETDTQFESG QG
QNVVSITLCTFDSGKCVLNFKQYYTHAGHRLWAEPENFRE
RDHKQSWFRDADAKSGDVRTVFDEKVATYYESG QNDSTIATCNADMYRDESDGSRWSGLGSDPEEECGWCGGA RDQNVYTLDAYSVTDGRKDATMYTEKHEARPDYKYVHPG RGHQRYQVVRVDAQTGKTKIIIDEQSDTFDD YSG RDHKQAWFRVADDHTGDVRTVFDESVPTYYESG NG QNVTSTTHCTFDSSKCVQRYAIGHQRLWAEPEDYRDRYFT RSHSKLKLCKFDTKTGKKEVLYAEEQDPWDNGHDCFTPLD RDQTDMALTCYNAENGKKTGVLYTEHDDK YSNNYVPM RATTHYDLNRYDVATGKKVNTVFS RTQDKAELVAYDVQTGARKGVLYTETNEK KKIVYBV SKDLDVKVYDDQSAKLTVRTTDSNLYKGWDEKTKDVLSAP


RGQDTCTVRSYDAASGKLQTTLFTEDHPKYVE RSHSK LKKLKFDAKTGKKKVLLVEEQGTWVTELHDCFTPPED RDHKSAQLRIADASTGKVKDVLKEEVATQYESGEDE RDHQDAHLQVANPNTGNVRSV EETYEEKTDTFFESGVE RGHQAYRVGELSAETGTVRPLDEETSDKYVNYTRRFRHDLL RGHTVMRLLAIDAESGKVTAVVNEECKTFFD
YD SKGEMTVV REVGDTNFNGWVEKPKKMLPDP
QNNLGKFYAVNPVTGVKKELYNEVQPSWINLDHDERIT
RDQNDCYLTAYNAHTGKK】GNIYHETDTKFVEPIH
RDQNDCRLISYDASTGEKTGELYRETDAKYVEPLH
RDQNHAELVRYNAENGEKDAVLYVEEHPKYVEPQHIL
ROM
RDQNHAELVRYNAENGEKDAVLYVEEHPKYVEPQHI
SKKMEVTUVDTEANSASVVR KKHDATEYNGWFTGEFS RDHKQEWLRVANTETGEVREVMSETAPKFFESGDDHVN DHPARLRLVEVDVSTGSVRTVQEERSDTRVQLNSYPYNRP KILDVKVYDIPSSQMLTVRNTNSNLFNGWIEKTKDVLSRP QDHL KLFDVNPGSGGKK KSVDMYEEQQKT WVDLEDRA SRYLKVKVYELDQN KMVHLLNAMDTAAFNGWVEKSKN QNHS RLCQYNAETGELQRVLIEEKHDKYVEPQH
QNDSVISTCEA PDWQCVEHAERAVENGWVSDRGHP RDHKVAKFRDADATTGEVREVFEEKVDTQYESG GQ RDQNHAKLCQYDATTGE GLMQLYEETHPKYVEPQNP RDQNHMRFNEYDATTGAF DKTLFEEKSTTD FVEPL $R G H Q A Y R V I K V D A K T G K A T A D I D E T S P T F D D$
$S K \ L H T M V Y N Y P E K K A E T L R T R D A T K Y H G W I D E K K D I V T I D$ RDCRRAEVLLADGKTGATRSLFTEESETFLRRIHHDVYFGR
 AREGHVVLFDVGKTGKVIVRVKGEKGEEGDKGWDESEQN

QNDSRLTMCYDAQTGEKSGELYRETDEKYVEPQN
QNMA TY
RDQNDCRLMSYNAETGDKLAELYRETDAKYVEPQH
RGHQVYRVLEMSAETGETKTLVEETAKTFVNYTRYFRQ QTDYSLDVYDTDTG
 RDGDRLDFWQVDTATGDTRRLVLEEGPAAGRPCFSPSPQP
RDQNHALLVQYNAEGEKKGVLYEEKHARYVEPQHPL
 RNQNHAKLCQYNTETGEVTDVMQTLYEETHPKYVEPQNP RGHQLYRVI EVDARTAAARTLIEPTFDEYSELSGVHENGG


UniRef90_C7M8E1 UniRef90_L1IQI8 UniRef90_G8JXM7 UniRef90_R6IFD6 UniRef90_A0A024G5K7 UniRef90_Q8A2Q1 UniRef90_W5W5R0 UniRef90_M4ECF4 UniRef90_UPI0001DD077B UniRef90-I6YHZ4
UniRef90 T0YF99 UniRef90_X1XZ15 UniRef90_U2C7Y7
UniRef90_G6AFZ9
UniRef90_Q1IVN9 UniRef90-I3ZBE7
UniRef90-M4NI99 UniRef90_UPI0003790DDB UniRef90_R6W1C9 UniRef90_UPI0004247DA3 UniRef90_UPI0004722310 UniRef90 - D5BDI3 UniRef90_F8WVN5 UniRef90_E1FHR1 UniRef90_UPI00047A15E4 UniRef90_G6D2N6 UniRef90-E0NSZ8 UniRef90_UPIO0037C12C6 UniRef90_UPI000364E85A UniRef90_UPI00030489E2 UniRef90-F1KTX4
UniRef90-V8NK61
UniRef90_A0A010YC57 UniRef90-14A0N2 UniRef90_K4IAG1 UniRef90_G5GCF6 UniRef90_HOH1C5
UniRef90 UPIO003 UniRef90 F8EAY4 UniRef90_UPIO004694CCA UniRef90-R5PER0 UniRef90-I2EQ67
UniRef90_F5J0E0
UniRef90_M5X714
UniRef90_UPI000366DFC3 UniRef90 A0A017T0V3 UniRef90_UPI000476BBAE UniRef90_R6L5Z1 UniRef90_UPIO0016C475D UniRef90_J7SAJ7 UniRef90_U2HW89 UniRef90_F8EP20 UniRef90_I4ZBK2 UniRef90-R6EWM9 UniRef90-R7NTU5
UniRef90- W4PLK7 UniRef90_C4R272 UniRef90_UPI00047A1DB5 UniRef90_UPI0003745199 UniRef90-P33894
UniRef90_T1FRJ1
UniRef90_UPI000402B9C1 UniRef90_UPIO00180CCB3 UniRef90_Q6FLK8 UniRef90 F3PU22 UniRef90-A0A023EYJ8 UniRef90_UPI0004220477 UniRef90_J9GMD7 UniRef90_UPI00035FABE0 UniRef90_D5BK35 UniRef90-W0TAY3 UniRef90_UPIO00366FAAD UniRef90-R9CND1 UniRef90_UPI0003B7A0A9 UniRef90_L8X1F2 UniRef90_E8R5E4
UniRef90 R6VUY1 UniRef90_R6VUY1
UniRef90-H1HPX8 UniRef90-T1GFX1 UniRef90_U2NPJ6 UniRef90_E4T5J4 UniRef90_L1NM63 UniRef90-J2JG04
UniRef90_A1BAZ8 UniRef90_F0R5R9 UniRef90-G8NV12 UniRef90_K5DD45
UniRef90 TOK496 UniRef90_Q5GY47 UniRef90_G1XWY8






\section*{| 1 |
| :--- |
| 1 |
| 1 |
| $L$ |}



$P \square V F L P W D K S Q F I M Q S R Q D G Y N H L Y L C T L G M H E V E Q L T E$ S I NWHYLPESDEII WY RHFSNDKYDPNKFIVQSERDGHNHLYYYDTSGKLLKQUTM KVNWSYLPETHEATWFSERNNWGNLYLYDNTGKLKRATTT ALVGGRSGIFTSLPVTDQGGVWRHAIHLTQETRTETITQ KRYRYRFLKDGSLLWWSERGGYGHFYRFGYNNGQWQQLTH KVNWQYLPASHEVVWASERDGWNHLYLVDKTGEMKNQATM DDAYFVEDPHRKPNGEVFTQVAKDIVAPHDTDGRVTFLSM EEPDFSKDGKKFFFVRADPQEFYHI AMPNSSNDNLQSITS KGUTELKYSGGF WASEKSGFRHLCVHDANGTCLGPHTE NAAVFVPNSTKNLLWISQKDGFRNVYLESTDGKTNKQLTK HGDTFLPWDNSKFIYQSEKDGYNHLYLFDTDGRQIKQLTQ PKPESKRTEYGY\|DIHTDIAGFNHLYYPS ILAKDGIQLTK TINWKF NGGEEYI WWSERTGWGQLYRYDSEGNLKNRITS TUNWKFLSKTNEUWYSERSDWGHLYGYDTTGQVKNQITA D DMF LPWDSNSFIMQSRKDGYNHLYYVNTPSGKQSLITK NPVLFLKNEPSKFLWQSERDGFNHLYLYDTTGKLLKQIT RGVTKSS

GGFi WASEKTGFKHLYLHDANGTCLGPI
A
SDSWRLLKESDEFI WFSQRDNWGHLYLYDQTGKLKNQI T K LF VQY DDDTNEAVWMSERDGWNHLYLIDLATGKARNIT PNEVMGRKEYGYVDIHEDANGYNHLYYETVTSQKGRQLT

K
YLADNKHYILKSDKTGWAHYYLYTLEGKLLNPITQ
V

## A V H

 PKPELKLQHDDGUVWFS DGGKPYMD

[^0]UniRef90_C7M8E1 UniRef90-L1IQI8 UniRef90_G8JXM7 UniRef90-R6IFD6 UniRef90_A0A024G5K7 UniRef90_Q8A2Q1 UniRef90-W5W5R0 UniRef90_M4ECF4 UniRef90_UPI0001DD077B UniRef90-I6YHZ4
UniRef90 TOYF99 UniRef90-X1XZ15 UniRef90_U2C7Y7
UniRef90_G6AFZ9
UniRef90-Q1IVN9 UniRef90_I3ZBE7
UniRef90_M4N199 UniRef90-UPI0003790DDB UniRef90-R6W1C9 UniRef90_UPIO004247DA3 UniRef90-UPIO004722310 UniRef90-D5BDI3 UniRef90-F8WVN5 UniRef90-E1FHR1 UniRef90_UPIO0047A15E4 UniRef90_G6D2N6 UniRef90-EONSZ8 UniRef90_UPI00037C12C6 UniRef90_UPI000364E85A UniRef90-UPI00030489E2 UniRef90-F1KTX4
UniRef90-V8NK61
UniRef90-B915B8
UniRef90_A0A010YC57
UniRef90-I4AON2
UniRef90-K4IAG1
UniRef90-G5GCF6
UniRef90-HOH1C5
UniRef90_UPI00037A3689
UniRef90- F8EAY4
UniRef90-UPIO004694CCA
UniRef90-R5PER0
UniRef90-I2EQ67
UniRef90-F5J0E0
UniRef90-M5X714
UniRef90_UPI000366DFC3
UniRef90-A0A017TOV3
UniRef90_UPI000476BBAE
UniRef90_R6L5Z1
UniRef90_UPIO0016C475D
UniRef90-J7SAJ7
UniRef90_U2HW89
UniRef90-F8EP20
UniRef90-I4ZBK2
UniRef90-R6EWM9
UniRef90-R7NTU5
UniRef90 W4PLK7
UniRef90-C4R272
UniRef90_UP100047A1DB5
UniRef90_UPI0003745199
UniRef90-P33894
UniRef90-T1FRJ1
UniRef90-UPIO00402B9C1
UniRef90_UP1000180CCB3
UniRef90-Q6FLK8
UniRef90-F3PU22
UniRef90_A0A023EYJ8
UniRef90_UPIOO04220477
UniRef90-J9GMD7
UniRef90_UPI00035FABE0
UniRef90-D5BKK35
UniRef90_UPIO00366FAAD
UniRef90-R9CND1
UniRef90_UPI0003B7A0A9
UniRef90_L8X1F2
UniRef90_E8R5E4
UniRef90-R6VUY1
UniRef90-T1GFX1
UniRef90-U2NPJ6
UniRef90-E4T5J4
UniRef90-L1NM63
UniRef90-J2JG04
UniRef90_A1BAZ8
UniRef90-F0R5R9
UniRef90-G8NV12
UniRef90-K5DD45
UniRef90-TOK496
UniRef90-Q5GY47
UniRef90-G1XWY8
UniRef90_K1XN32
 GDWMVEDIKAVDEVRGLVYFTGTKSGWKDRHLYSVSLQGG
 GNWVVQNDLGFNEKTKEVIIMSTEVSPMQSNAYAVNVKTG



 GRFEVNKILHWDQANNFVYYLGPEHSPAQQHLYRASSLPP GE WLVSDVLGFNAKRKEVFFTAVNGLSSGHYTVNVSNGKM GK WVVLDVLGFNKK LKSIVYASSECNPDQRNTWMVDVNSG GD WNV SRVLRVDAATGDLLVEGVGREKGWDPYYSAVYRTS
 GKWEVLSVVLGFNSKTKSI DYKSNEASPDQQNVVSVSVANK GTWDVTEVLGFDAAGANLYYVSTEATPLERHIYQLNLKNG


 GEGNVTQVLRVDAKSRTLWFRGVGRTAGYYQQYWKVSDDG GA WVVLDLLGFNTKTKSAIILSTERNPDQNNVYAVNVETG GSSPATSLVGVDEAAGTFTYQATEGVGLTQQIYRARLDGT GE WVVRGVEHVDEENRTVLFRGKNEDPYFEHYYRVGFDGK
 GDWDVSKI LGYDEKQHKI YFLSTEELPRTRHGYSAGTKGN
 HK WVVKDDLGGSNDGKSVIVTGTGEDPRNTQTFKTDLKSG
GNYEVRAFYGYDTKTGTTYFASNQESPRRQSIVKSDAKGK GNWVVLNLTGFNTKTKSVIDKSTESSPIRHNYYSVNDETG GNWEVTGGIDGYEYETDTVFFTANKDGVMSQHLYSTSFADP
 GDYVVRD DSVD VVKRQVWFRACGMNVGEDPYF IHYYRIG $G K W E V M E V D G F Y P K H K N I I I A S N E Y S P D Q R N D S M V D V E T G$
$G K Y T V K N V E G D D Q K N R V V Y F A R G I E S T A R F D L Y R V G F D G$ GKWDVTSVLGFDEKGENLFYVSTEVSPDEKHIYKLNLKTG GDWMVEQI AGVESAGLVYFTGTGEGPLESHLYCAKLFTD GDFVVTNLDHIDKESGVLYFEANGQNPYFSHLYRVDLSGN GA WDVDVIHAVDETRNLAMDSGSRESPLESHLYAVPLAGG
 GEWVVRGVERVDVKNREVWFRADGVHPDQ DPYHVHFCR
 GEWPVRNVANVNEEKRTVTFAASGMNPQQDPYFVQYYRGN
$G E W V V M D I L G F N K T F K G I T Y T S N E C S P I Q V N T W M V N E T G$ GNWEVLDFLGFNAKRKGUIISSNEISPI QCNDFFVDLKTG GTWLVKNULGFNPKAKEUIIMSTEVSPLQSNAYAVNVKTG G K
GS WNVVGPGVLEVLEDRVYF $\square$ GTKESSMEHHLYYTSLTGP GEGNVAQVLIVDPSERELYFKEKGRDPYFRFFYS THFDGS GA WLVRDVVGVDEVRRQVLFTAEPGDPYQRRDYRVSLDGG GKQMTVDSVVGIDNKNDILSTNHADNNNNHNANTKNNQRP GDFTVLSTELIDEKNGGVYFTARGKENTARDDLYSVKLNG


 GEFVVTAVLEFDAEDRMVYFMANGKD QSMDPYFAQFYS
 GNWPVRKVIEVVDKNRAIVFTADKDQDPYQIVYCSIDDFDG GQWPVDYV HR I DEEYVYFTAHSDQERPYDRHLARVPLTGG
 GE WEVTSVLAVDETHGLI YFQAAKHSS $\square A R G V Y S V S L P S A$ GE WMVDEVVHVDRREVWFTAWSGGTDPTGSGLFRVSGDGQ


GP WDVMDFDGFNTKKHADYASNECSPDQKNTWMVNVDNG GA WYVRDVLNVDEKKREIIFSANGMKANEDPYLVRYYR DR GKWGVLDLI GLNKKTKEAIILSTESSPIQQNNIYAVNLQTG

 GEGPVNQLSQVDTKNRVLYFKEKEDDPYFVKYYRADFDGQ GD WLVSEDLGFNAKRKDUITABDEGK SGHFAVN GA WVVTDLIGVDETTRTAYFREAGRNPYYRHLYSVSLDGG GDWVVRKLDRIDEAAGQVYFMQPGEDPYDRHAYRIGLDGS GDWVVRHVTKVDDERRQIYFAANGMRPGEQHFYRVDFDGR

UniRef90_W4PLK7
UniRef90_C4R272 UniRef90_UPI00047A1DB5 UniRef90_UPI0003745199 UniRef90_P33894
UniRef90-T1FRJ1
UniRef90_UPI000402B9C1
UniRef90_UPI000180CCB3
UniRef90_Q6FLK8
UniRef90 F3PU22
UniRef90-A0A023EYJ8 UniRef90_UPI0004220477 UniRef90_J9GMD7 UniRef90_UPI00035FABE0 UniRef90_D5BK35 UniRef90_UPI000366FAAD UniRef90_R9CND1 UniRef90_UPI0003B7A0A9 UniRef90_L8X1F2 UniRef90_E8R5E4 UniRef90_R6VUY1 UniRef90-_T1GFX1 UniRef90_U2NPJ6 UniRef90_E4T5J4 UniRef90_L1NM63 UniRef90_J2JG04
UniRef90_A1BAZ8 UniRef90-F0R5R9 UniRef90_G8NV12 UniRef90_K5DD45 UniRef90-T0K496 UniRef90_Q5GY47 UniRef90_G1XWY8



 TDNDEQSPVRLTKEQGMHTIVMDRFCRAYVDLYSSLEAPP

 K Q G T S PRPPRCLTTCTHQHS
 K R LD S N KLR L LT PE A A DHTVVTLDS P D GRAAFV D A Y S T P T T P P $\begin{array}{llll}G K K Q L & T & Q & A \\ K & R & R & \\ \text { D E G G K G WHE }\end{array}$

K R EK L S K E E
KPAKCVVTC G $\square$ AP D
-

$N L K E L T P E K M Q$
APTLLDAPEPAD THTAEARCVTCGPNCTE QEVITFSEDMDKYILNCRGFGFP H

 K R
 K R K GLKRLT F GAFNNR KR EQLSKEEGVHDGMLSASGKFICDRYTSQNNPK G



| UniRef90 C7M8E1 |  |
| :---: | :---: |
| UniRef90-L1IQ18 | $V \mathrm{~N} V \mathrm{CSLKDGTVVRSIFVNKD}$ |
| UniRef90-G8JXM7 | TKLEGDDLNT DVSQIT HNQELS DA LGG Y |
| UniRef90-R6IFD6 | Nl El VPT S GKEKTV |
| UniRef90-A0A024G5K7 | VA Y L |
| UniRef90-Q8A2Q1 | 1 DLVDTKSLKTVNLLT |
| UniRef90-W5W5R0 | V S RVVRAWT GRVLVE |
| UniRef90-M4ECF4 |  |
| UniRef90_UPI0001DD077B | QS YLA D T D GQRL A WVEEN |
| UniRef90-I6YHZ4 | R S VVLD G D G Q VVVELED T D D L K |
| UniRef90_T0YF99 |  |
| UniRef90-X1XZ15 |  |
| UniRef90-U2C7Y7 | DD LT D T R S F K S $\square$ RLL |
| UniRef90-G6AFZ9 | AYEFDTLNTKPQR |
| UniRef90_Q1IVN9 | ALAVVCLKDE |
| UniRef90-I3ZBE7 | VTVLRDAEGKRLTED |
| UniRef90-M4N199 | VIVLRASDD |
| UniRef90_UPI0003790DDB | TVVAICQVS GT |
| UniRef90-R6W1C9 | R\\|VIDTQTGKSHC\|LNAKDPWKEK |
| UniRef90_UPI0004247DA3 |  |
| UniRef90_UPI0004722310 |  |
| UniRef90-D5BDI3 | VAVLRD $\mathrm{V}^{\text {K G R K }}$ - M D E |
| UniRef90 F8WVN5 | VY L S S I S S N S L Ie LT E WK DLEQK Y N ER |
| UniRef90-UPI00047A15E4 | V TVLRSSDD |
| UniRef90-G6D2N6 | AIFLCTSAGSRRAVLWDGAPLRQKFAAL |
| UniRef90-E0NSZ8 | Q I IVATATGKTV |
| UniRef90_UPI00037C12C6 | Q SYLAAPDGSRVAWIE E N |
| UniRef90_UPI000364E85A | VTILRTSDGHKLMTLEE |
| UniRef90-UPI00030489E2 |  |
| UniRef90-F1KTX4 | V HLS S SNNTLLKEFAESEMLEQRF |
| UniRef90-V8NK61 | VTVHRTS DTQKL F DLEVNARVQKTVAERQ |
| UniRef90-B915B8 | V SLC SLIFDGREIMSLFEQSFT\PRYKRLLE |
| UniRef90-A0A010YC57 | Q1I 1 NTESGK |
| UniRef90-14A0N2 | ITII D T R N G K K T I K T S ENPLK N |
| UniRef90_K4IAG1 |  |
| UniRef90-G5GCF6 | QYDILSTTGQKAKKLHTDD |
| UniRef90-H0H1C5 |  |
| UniRef90-UPI00037A3689 | 1 SVVRDGTGKIVT |
| UniRef90_F8EAY4 | V T EVVRDLK GALI |
| UniRef90-UPI0004694CCA | V TEELKTASTKRIIAEIE |
| UniRef90_R5PER0 |  |
| UniRef90-12EQ67 | SMA V D N M NK\SEL |
| UniRef90-F5J0E0 | VTITETKSNK |
| UniRef90_M5X714 | KVLLSLLD G S TI I S L Y E P S F TVPRFKRLQ |
| UniRef90_UPI000366DFC3 | V SVLRNLK GELI ETLE |
| UniRef90-A0A017TOV3 | RVEI RAADGTAL |
| UniRef90_UPI000476BBAE | VSVI RDLINGETVVQL |
| UniRef90_R6L5Z1 | VTVLRSADGKVVMPLET |
| UniRef90_UPI00016C475D | VVLRRTADGKKVCDLEDAAELLK T |
| UniRef90-J7SAJ7 | YSA N NPPDEGVIALT DSSKFEEASQKF |
| UniRef90_U2HW89 | RVALVDNQGKIVKELAD |
| UniRef90-F8EP20 | ITVLRSADGSVVMELE |
| UniRef90_14ZBK2 | EY T |
| UniRef90-R6EWM9 | AlV NV - N G K |
| UniRef90-R7NTU5 | NIDIVPTSGK |
| UniRef90-W4PLK7 |  |
| UniRef90-C4R272 | QKF\DLS D P S T |
| UniRef90-UPI00047A1DB5 | V SVVRDDDGRSVMEV |
| UniRef90_UPI0003745199 | V SVLRTADGRVVLEL |
| UniRef90-P33894 |  |
| UniRef90-T1FRJ1 | YTLVGSNTTQEV |
| UniRef90_UPI000402B9C1 | $K M S L V D N G K D R E L G D$ |
| UniRef90-UPI000180CCB3 | $\square H M R N S S D Y E F V G V V E G N E E L I Q T L N D F$ |
| UniRef90_Q6FLK8 |  |
| UniRef90-F3PU22 | 】DIVS T R N H A TVVILL |
| UniRef90-A0A023EY | A AV HS WQNHTLI VPLIFSSRPLSQK LS T L |
| UniRef90_UPI0004220477 | KAVLKKMNGKQ\\|AMLE |
| UniRef90-J9GMD7 | l I LVNTKNFKTTVN |
| UniRef90-UPI00035FABE0 |  |
| UniRef90-D5BK35 | VTVLKKAGKKKI LTTLE |
| UniRef90-W0TAY3 | T I I Q T D NEDKNLISI T K N E H $\square$ K D A $\square$ QR Y |
| UniRef90_UPIO00366FAAD | RSVLRAPGGSLLCEL |
| UniRef90-R9CND1 | V SVVKKLD G T K V M D E DLT DLK A T |
| UniRef90_UPI0003B7A0A9 | V SLHRTSDGALIA |
| UniRef90-L8X1F2 | QKVIQT QEESVNYVLTDNDELNKTSAAFQ |
| UniRef90-E8R5E4 | TAVLYDRQGHPLA TLLA |
| UniRef90-R6VUY1 | IAII NVDNGKKL |
| UniRef90-H1HPX8 | IAIVNTKNGKA! |
| UniRef90_T1GFX1 |  |
| UniRef90_U2NPJ6 | K I El 1 NVD |
| UniRef90-E4T5J4 |  |
| UniRef90-L1NM63 | 1 SII NATTAKRL |
| UniRef90-J2JG04 |  |
| UniRef90-A1BAZ8 | V SALYYDRNGRVVTTLE |
| UniRef90_F0R5R9 | El S L P T D GKKVTLLT A T D P M K E Q |
| UniRef90-G8NV12 | TSVLRDNTGKVLVTL |
| UniRef90-K5DD45 | - I N L VD TK |
| UniRef90_T0K496 | KVVLVR $\quad$ D G T A 1 A DV |
| UniRef90-Q5GY47 | LELRRSADGSLARTVER T DLS RLLA |
| UniRef90_G1XWY8 | MELRRTADRSLVAEI E |
| UniRef90_K1XN32 | K S S L Y P N T G R K \\| | M D L |E E T D |

UniRef90 UPI00035DAF6B UniRet90-G7UUS5 UniRef90-LOG375 UniRef90 JoV5V7 UniRef90-C2M6F9 UniRef90_UPIoo029A8EE3 UniRef90 A6LGI6 UniRef90-H1YCG6 UniRef90-H1Y2U4 UniRef90-D5ETZ1 UniRef90- UPIO004560AA4 UniRet90-R5MTS6 UniRef90-R5W4VO UniRef90-R6B6L6 UniRef90-R5UQP5 UniRef90-UPI000362E7AA UniRef90 R7ZRH6 UniRef90-M5FCC4 UniRef90-A4BVX2 UniRef90-H8KTK7 UniRef90-F9Z5G1 UniRef90-L7ED45 UniRef90-F4KM09 UniRef90-LOSUN6 UniRef90-M5TVZ3 UniRef90-R5IIT1 UniRef90-H8X652 UniRef90-G8NXM8 UniRef90-E8R0B1
UniRef90-D2R881
UniRef90-T1HY29 UniRef90 G8ROB2 UniRef90_UPIOOO30FE768 UniRef90-F01196 UniRef90 C5M3D7 UniRef90-C6W9L3 UniRef90-M3DZ21 UniRef90 F4MN46 UniRef90 UPI000477220C UniRef90-D5QFP9 UniRef90-Q18253 UniRef90 U5BR76 UniRef90-R5MGG1 UniRef90-D5G4W3 UniRet90_R6ST15 UniRef90- XoWNE2 UniRef90_UPIO0047A9096 UniRef90-G0MB54 UniRef90 U4UEU1 UniRef90-J9GSJ6 UniRef90-G4N3A3 UniRef90 U2HW44 UniRef90-UPI0003F7494B UniRef90-UPIOOO4207819 UniRef90-R6TYK9 UniRef90-R5NVUO UniRef90-S9R4P6 UniRef90-R6X0U8 UniRef90-UPIO004571FB1 UniRef90_F4KYD5 UniRef90-R5IEL7 UniRef90-D2UEB5 UniRef90-R5INL2 UniRef90_S2DIY5 UniRef90-D5SXA1 UniRef90-H8MUP8 UniRef90 A0A016WCN5 UniRef90-W2UFR4 UniRef90_UPIOOO31BBE73 UniRef90_UPI00029B3604 UniRef90-R6AXJ7 UniRef90_UP100037B3414 UniRef90-UPI00037BAF47 UniRef90 F9ZAS1 UniRef90-BoWXF5 UniRef90-K416K3 UniRef90-C0D944 UniRef90- UPI00037B2449 UniRef90-V7ZBM2 UniRef90_W7Y053 UniRef90 E5SS42 UniRef90-U6PIG1 UniRefe90-TOIUB4 UR UniRef90_G3B8KK UniRef90-K1LKK2 UniRef90_UPIO0047220D5 UniRef90-R6CLS2 Unirergo_RECLS2
UniRef90_UP1000443996
$D V A T G R T A P L F D A Q A L A A A L N T L L A T G D K P \square K A E K \square D A D T$ HVDNQQKQPLFDQELI AEKLSNVLQDTDKAYEDPILSFKS NPKKKEKRLLFDTDELLDSKGAVYTKKAYSSADPHLSSTFM DPAAKSKKLLFDNAKFDAQHLPDKNDKFTEDEKSVQFEDK

GAKPGKKEEVLFS $\square \mathrm{LERLNGALTVANDQTVGSDPSFSVPYE}$ NGADKTKKLAFDHKRLAES IQAVTGKSFSADKSTVSFKTS NTKTGKKTLLVKDPFDAQHLPUENLKFTKDEKSUQFELKK DVKGGGKVLYVEGKDHNNHKGTWTSYK ISPDMKWVMFFSS DSKSGKETVIVTGEEVNKALTNYASLPWS DRNVITFTQY
 NPKEGKKELLFDNEEMAMLLSGLTHEVVNPDLSELKFAKD DTSTGKTAPLFKQAALVASLNTLGDKPLKADTFAPMVKVT

T IS EKT T REAFDHNK LIA HRAEASGEEDSDDLPFSRIQPG SHKSYQAGDLPFERFELTEDGRRLLI EQV DVTSKTKEAAFDHKKLAKVLSPDSNDSFSKNLKQLYFTAS GSVTNTTV NTALSI EDVSAATSTQLRGWPQFTWV

 $D P L Q A T G E V L F E$ A
QANSEYEAVF LIPSKKFAYQNNNDEEVALNPTNNDHLIKTD

SAVT DNVTRLVTNHTDTQLNVKWYQASHDLKYVISEKA NAEDDKAQSVLTLSTLNEKLSEIDGPKC RRFPSLTWI DCSTGKTKELLTGREMRVSAGGFADYHLDETGRFPLLPGS DNKGVEAASINVKKDSETYSLQGYPSDVYVDSNQLVITNG QVNSDSKDVLISNSRFAYGNDEDQDFILNPDNTHILI TD
DPVRATRQTLFEPTADDAAVAPLGA SGPRLRVASVQQ SPK A SRAKTKTSKA A $\square$ ST TYQKSSALPYFSS DVK S G R D RAL LKWEDVGGRGN KQMKKIPLGSSVAEPFFNNGEYVKALSSNMKYAYGSKK

## STRLMPNSESKP L K $\quad$ TDDYSWSPDGKK LLVFTN

NDES GSSR $\square$ P LG S FES K P F L N SFESSKS LSS DSKYAF GSQK RLNPNRYQLSADQRYLLLAQN
$K \square K D N W Q D K Q L \square S V G D L Q T A L T A T \quad \square P D E Q F A L R T F P$ S EDGQESVLLTKEELASALKS KFSGD TFALLRMFP DGSSSKTKELLDHQKLARLLSEKTGASVDANLPFDRIQVD

F LIPHGNPSMH LSAFH DKEVCNSLTQKVVSSDLEYVAYFCG

NASNGKRKLLFDNEK LASEVSRLTGKEYKPEDLK LYFYNK
 EVNTGNKSRLFENKVLVSADNSFEGIEVKEDNLGUSUVEY DPKTKQATRFLHEASSGQKRA DVASGQTRELLTRERMRMSARGFTSYSLSEDGTRLLVPDS TVATVIDH GTFD AVDYLSDSTLMHSLSSNEKYAFVSKN RLVNTKEATNVCAFDHQTLASSLSDVTMSLSPLKLHFKAV

K PAQRKQEP $\square$ FDNT $\square$ MAEQ $\square$ S MKTHET $\square \mathrm{DENN} \mathrm{\square R} \mathrm{\square LLSSF}$ DPRKGKPVHLFDREKMAAQ $\square$ SELTHPSFGKDKNVFTFWAN

DPVAGLQRELFDRQELAGK $\square$ S SVTGFS $\square E E K E N V L C F S S E$ MDADNKSFDRQH LQQA LTS S LYN $\square$ KW $\square$ S $\square$ YNHQDNRTLLIDDRSCQNRH VVSYKPSATAQY IAFSYE SVAT I I QPETFEAVPY LSDSSFMN TMSSNNKYAYTSET
DVNAGKDVDADEVLGVYAEAAGAYLKKSLPEGAENVTSNE
A DGLHYFLVSA NQKTAETDMF DENDQFAYENNYVEDVILNPARPYHVLVTD $D V G E R T T T E A F N H N A D A A L M N E L T D N Q \| \quad D G Q D L P I S Q V$

UniRef90_UPIooo35DAF6B UniRef90-G7UUS5 UniRef90-LOG375 UniRef90-J0V5V7 UniRef90-C2M6F9 UniRef90_UPI00029A8EE3 UniRef90 A6LGI6 UniRef90-H1YCG6 UniRef90-H1Y2U4 UniRef90-D5ETZ1 UniRef90 UPIO004560AA4 UniRef90-R5MTS6 UniRef90-R5W4V0 UniRef90_R6B6L6 UniRef90-R5UQP5
UniRef90 Q8PPU4 UniRef90_UPI000362E7AA UniRef90-R7ZRH6 UniRef90-M5FCC4 UniRef90-A4BVX2 UniRef90-H8KTK7 UniRef90-F9Z5G1 UniRef90-L7ED45 UniRef90-F4KM09 UniRef90_LOSUN6 UniRef90-M5TVZ3 UniRef90_R5IIT1 UniRef90-H8X652 UniRef90_G8NXM8 UniRef90-E8R0B1 UniRef90_D2R881 UniRef90-T1HY29 UniRef90-G8R0B2 UniRef90_UPIO0030FE768 UniRef90_F0ll96
UniRef90-C5M3D7
UniRef90-C6W9L3
UniRef90-M3DZ21
UniRef90 F4MN46
UniRef90_UPI000477220C
UniRef90-D5QFP9
UniRef90_Q18253
UniRef90_U5BR76
UniRef90_R5MGG1
UniRef90_D5G4W3
UniRef90-R6ST15
UniRef90 $0^{-}$XOWNE2
UniRef90_UPI00047A9096
UniRef90-G0MB54
UniRef90_U4UEU1
UniRef90-J9GSJ6
UniRef90_G4N3A3
UniRef90-U2HW44
UniRef90_UPIO003F7494B
UniRef90-UPIOOO4207819
UniRef90-R6TYK9
UniRef90-R5NVU0
UniRef90_S9R4P6
UniRef90-R6X0U8
UniRef90_UPI0004571FB1
UniRef90_F4KYD5
UniRef90-R5IEL7
UniRef90-D2UEB5
UniRef90_R5INL2
UniRef90-S2DIY5
UniRef90-D5SXA1
UniRef90-H8MUP8
UniRef90-A0A016WCN5
UniRef90_W2UFR4
UniRef90_UPIO0031BBE73
UniRef90_UPI00029B3604
UniRef90-R6AXJ7
UniRef90_UPI00037B3414
UniRef90_UPI00037BAF47
UniRef90-F9ZAS1
UniRef90-BOWXF5
UniRef90-K416K3
UniRef90-C0D944
UniRef90-UPIO0037B2449
UniRef90-V7ZBM2
UniRef90-W7Y053
UniRef90_E5SS42
UniRef90_U6PIG1
UniRef90_TOIUB4
UniRef90-R5RVL0
UniRef90-R516V1
UniRef90_G3B8K3
UniRef90-G3B8K3
UniRef90-K1LKK2
UniRef90_UPIO0047220D5
UniRef90-R6CLS2
UniRef90_UPI0004439916

100
P R NR 110
120
ADRRYRFAVRDTQVVCDANARCAKVYAKADREEDRAGVS
VGSVMTFLDAGYHWEYDLNSETALAKKTMWDDRKGDPVTLAP KDNTIRIDFDRGLYTYNGHTKELRQLDEKPTDPYWMKYSP
 SGSVLAFTSKQHR $\quad$ HYY DKKNKVVADYA $\square K N N W A N Y D F C P$ NTWLQCNDKTFKCNLTTDNNKPLQVHHSRWEEVGRDSVSP SSIDQKKTKYFQYDLVTEKKVSELKNYDKMKPKVGWASISAP NKPUVKLGNRKAVILLDFKAKQDIWQDSGA GQQAYDWNA EQKQWRYSQHANVWLHDKKTTAI GGGPSWPPTDSYAAWAP

 QKS FVVFSYSKKYDYNRITRKLKEVEKKKADDSWMNFSP ADGRYRLNVRDTAVVCDARARCSKLYAKDKPEPG NDGLIEFSWRGHRWSYDPDTDALEK TEEPKVSSGTI LDSP RWSCDVASYACTSTK LDVEAPEFQLSHYYTPPAENDPDQP KQKYS DANH DRFSAEGKLFLFD DQSKSAKTLTTFNKEGENLDIE GKRYE $\quad$ DTDKKVLAYVFPDAKGAQNVTS VKKNFQKSFTAFYT YDVTNDHHTPLKVQRTR LQYASWDG FTPQCHY LSKGLYLI DVEQKQUVGYFATGKDEKRASLLSP ADGRYRFSVRDTQVFCDPDAHCSKVYATEKPEPG SVLSP TDDGLR $\square R F S G E A P \square D C R W P R W Q C A P S Q D A M P P A D A L L S P$


K K RYFRNTF LIAHYTVYDVKNDHHDPPKVQQSKVRAAKWCG DATDFTFEDNQNVYRFNLSENKVEKTDSLPAKAENRDYAP
 GKLFVCNRSANSSKELKUPAGTAIDDAKWSP A D DGLRLRFSGEVPVDCQWPRWQCTRSPDARPPADALPSP S S N NLYFFSSNSYVNVNLGSSSFTED FFPKSAQNLEVSN DD



$R$ LT Y H F S Y K ITS D K S LTTYAT T D K D DK Y P S WANVS P TKRVWRRNTRGDYWVLDMTSWELQK LDAEPSTLMFAKFSP PRKSP V N E L WR H S A EY L Y H IVK ITN NWHVGPEENALIQAFYWNPNS $V K K L F R H S Y L A Q Y T I Y D I H S G N D F P L R P L P E N D D H P Q W A P$ F Y F S Y D Y S T GK LT H L K DKE E EP K K VR WA S V
 A GYSWKDKNNGTYLVFDAATKTVKSAVKISADAAN QVLSA K D GLIDEF E WRN Q Q WKF DPK T E SLLTSEKKPDRGNY DY SVVS RKKRWRYSVYNE $\quad$ K I L E R S T GRVT T L K Q NS Q I VA E WAP YD YP T RKL T WLK EKKKETEYPDWSP

D $\square$ S GFY $\square K K E G K$ YF Y DLNT GVLKLLEDPKEKPAWAT $\quad$ AP D $\square$ S CF Y $\square K K E G K D \square K Y T U S S G T G K V V S E R P D A \square K W A K Y S A$ GKKYEYNRKSKKVS A IVEEEKQADDD\|IFSWMNFSP D $\square$ DENLVKFRREGYEWDLKKEK DNNATRKYWGQSDPVLSP



 EFE Y R D K R Y K F NRYTK T I S E $\square$ KKKK DEDNEVMYSCMKYSP
 F Y F S Y D Y P S R K LT HLLK GQEKEP KK L GWGNF S P

LK A D D DE WP F L L HAEFTP
 $P R R S P$ N NHTFWVDNKEA IVVYNDDSKK DEYF LS Y PKNAKHMHFND $T R Q F V R Q R W S T L V K V R V L N S H F D Y P V G P S K T G D E F I Q L G L$ $L K P \square F R Y S N E A L Y Q \square V R L K S F A V G P T G D N T E T V L V F K W N P$
AAMSANGSMMGNRAV
GAAPALAF T SDK SK TE IIT SADYEEY LAK $\quad$ IP A RERRNWWERPDSVTTS P

 WMEVVDEEK DTHPVI S P WMEVDEEKEAYPVLSP


D GMTGVYMKNSNLFYMDDST\|VEHRDTSDGYKDFCYGDNN NGRRVAYVRERNLYVQNLRNLRDKQLTKDGSDTIINGTS
 K GHS LI MVQ DYDVYYRKTPTSHMYRIVTKSAVPGVVSHGVP $D G Q T V V Y A K D L N L Y R M S R E D Y E E D Q L T T D G M K D F G Y G D P Y$
 NGNAAA WLLKENN VIVSKDGKDTNVTTADTDK GIVN GS D
 DSTMLAFTRDNDLYVVDIKTNKETRLTDDGSE LILDNGFA DGKRQAY IKNDNVYVSDRDGRHERALSNDGTAGNYYS



DGHCRTFYRGHNLYLLD S GGETQLTFDGEPLCEYGCYS DSSYVVYGRNHNLYLVSTKDSVETCLTKDGCEKYSYTPKN
 KASAMVVYLE GYDLYIS QL NREPVKIENGSKEGVVLGQA WS NELVVYVY Q N NI Y Y Q A NVT A P S E QI T F S GVIE NKIISN GIA
 VGK S L Y Yi D Q R K H I RP VA E S E N S E I T

  D G K M E A Y I E G Y N VVVV H
UniRef90_UPI00035DAF6B
UniRef90_G7UUS5
UniRef90_LOG375
UniRef90_R5U5Y9
UniRef90_JOV5V7
UniRef90_C2M6F9
UniRef90_UPI00029A8EE3
UniRef90_A6LGI6

MQYQREDPP 170 R PRVVIY WSP 180
180
K W L I A L L R Y E P G V VER HVVH|I
200 A GWK H T D

KA $\mathrm{I} V \mathrm{E}$
$L Y Y A A H L$
$F G A E S A$
DEGKMEGRFGAESA

 A GWKH GQAVHQREF

 QSVVH NE F G DD K G T F WS P D G S K L A F Y R M D Q S MV T D Y P QV
 STLNT DTLCNGKRWGFWSPDSKYFATIITDQRNVKPLWVI

 YVQWS P G WS GEQG $\square$ R P ENFHAVWS P VF S T L N W S P D S R H L A A Y Y R V R P G Y K R E V A G

WT K S DGAVVLKWSP THREEFGISKGTFWSP
 A GWKH SDTAILEWS
 D WVY E E EVVAT DRMVWWS P S Y VY WEEVFDRDSKFWWS

## ©

 EFTVSRSEFGDTHGDFWS P EFVAQEEM GRFSGYWWSGQFIUR DWIYEEEVNAQDRMIWWSP
 EFAVARSEFGUSGGLFISSP NWLYE E E ILEASSAVWWSPSGRYVVYGRFDDREVNRIFLP YMGWKIFRDRYTSWFS DWVYEE EFGLRDGFRWS
NWLYEEEDLEVPGAVWWS
 NTHRQEFG円KKGMWWS Y THRQEFGIDKGMWWS
GWSDMMYERPAHFMARWS S WVYYEEDFGRYRAFWWS DWLYEEEVLMSPTALWWS GQTDQDKEKNT AHWWAPDGARLAYATINDSKVPNMEIP NNSEKRNTANAYTSARWIDDTKMALIRTDSKVKDLWVI

 DEEGASKNRKVNTTARWC


VHRSEFG\|VDGПFWS
D WLYEEETVGTHKAV WWS

UniRef90_UPIIO0035DAF6B
UniRef90_G7UU55 UniRef90-LOG375 UniRef90_JOV5V7 UniRef90-C2M6F9 UniRef90_UPIO0029A8EE3 UniRef90_A6LGI6 UniRef90_H1YCG6
UniRef90-H1Y2U4 UniRef90-H1Y2U4
UniRef90-D5ETZ1 UniRef90_UPIO004560AA4 UniRef90_R5MTS6
UniRef90-R5W4V0 UniRef90-R6B6L6 UniRef90-R5UQP5 UniRef90-Q8PPU4 UniRef90_UPI000362E7AA UniRef90-R7ZRH6 UniRef90_M5FCC4
UniRef90_A4BVX2 UniRef90_H8KTK7 UniRef90-F9Z5G1 UniRef90-L7ED45
UniRef90-F4KM09 UniRef90-LOSUN6 UniRef90-M5TVZ3 UniRef90_R5IIT1 UniRef90_H8X652 UniRef90_G8NXM8 UniRef90-E8R0B1 UniRef90-D2R881
UniRef90-T1HY29 UniRef90-G8R0B2 UniRef90_UPI00030FE768 UniRef90-F01I96 UniRef90_C5M3D7 UniRef90-C6W9L3
UniRef90-M3DZ21 UniRef90-M3DZ21
UniRef90 F4MN46 UniRef90-UPIO00477220C UniRef90-D5QFP9 UniRef90-Q18253 UniRef90_R5MGG1 UniRef90_D5G4W3 UniRef90-R6ST15 UniRef90-XOWNE2
UniRef90_UPIO0047A9096 UniRef90-G0MB54 UniRef90-U4UEU1 UniRef90-J9GSJ6 UniRef90_G4N3A3 UniRef90-U2HW44 UniRef90_UPIO003F7494B UniRef90-UPIOOO4207819 UniRef90-R6TYK9 UniRef90-R5NVU0 UniRef90-S9R4P6 UniRef90-R6X0U8 UniRef90_UPI0004571FB1 UniRef90_F4KYD5 UniRef90-R5IEL7
UniRef90-D2UFB5 UniRef90-R5INL2 UniRef90_S2DIY5 UniRef90-D5SXA1 UniRef90_H8MUP8 UniRef90-AOAO16WCN5 UniRef90-W2UFR4 UniRef90_UPI00031BBE73 UniRef90_UPIO0029B3604 UniRef90-R6AXJ7 UniRef90_UPI00037B3414 UniRef90_UPI00037BAF47 UniRef90_F9ZAS1 UniRef90-BOWXF5 UniRef90_K416K3 UniRef90-C0D944 UniRef90-UPIO0037B2449 UniRef90-V7ZBM2 UniRef90-W7Y053 UniRef90_E5SS42 UniRef90_U6PIG1
UniRef90_TOIUB4 UniRef90-R5RVL0 UniRef90-R516V1
UniRef90_G3B8K3 UniRet90_G3B8K3 UniRef90_UPIO0047220D5 UniRef90_R6CLS2 UniRef90_UPI0004439916
 HHTANGRPALETYKYQMPGEKEA PKRELLIIFDFANKTQK $D \square N T T P A \quad S V K S \emptyset K Y P M A G G K N E \square A K V G V F D V A K K T T S$

## $\mathrm{N} \quad$

$\frac{\mathrm{L}}{\mathrm{L}} \mathrm{S} \mathrm{S} \mathrm{V} P$
 DI FPRNASYEPDKYPMAGMTSHKVTVGVFDVKSGKTV VYNPDPTPYLETTKMRYPKPGYPNPLVSAHMVDLD


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

 P LVNTDVRPAKWENDKYPMAGMKSHEVTLGVYSPSTGKTI D I N WL S F S G S IIF P E T

## VRSKL GH

 GKHGTLNETRYPKAGEDNPKVDEDGMMDLATMETV

 D WT

 DI T T T P A

S LK S IIK Y PMA G GKNEIAK V G V F DL S K R T T S








 LIS S P A D Q L L Q P R DTAARFY E K PG WY G S E G S L Y P D D D EAAPT LQKQPKVHTQLYPKPGDD

## Q WG

T R VA S I K N L R Y P MA GMK SEEVT L N I F N T Q T G Q Y V
 $P$ DYS P F GQD G T L H Q T R Y P K A G E N NP E V R I GI DD L
 NSMASPRPTLETYKYQMPGEKEAMVQHLFDFDMNDNSYK $M Y L G S L Y P T G K V Y \quad P Y P K A G M E N P T D S L Y I V N V N G P$ NSIA E PRPTGETYKYHMPGEKEA PQPEI LI FDFPSKERVV


 K Y T K G S Q Y P Q Y E E I P Y P K A GVVE E NP LVVRLYI WTVVTNRTV

 $N$ S LTKKPS LVTYKYEFPGBK $E S S P T D Q L Q P K L Q S R Q Y L K P G D A L P Q R F P T L F L I D T K$
 NS $\square A Q P R P T L E T Y K Y Q M P G E M E A \quad P E E H L Y V F D M Q N N V R K$
 MF KEEYFTYP GFYTYKYPKA GEPNS QVVKVLSYDIM S H QTAR ESFGDS P QDDRP R LDWE YPCP FA EDLP HFAL CVG DVK S R K M T


 $K Y$ L R G S Q Y P Q Y M E I P Y P K A GVE E NP Q TV L Y I WP MK S GK A V $Q Q N P P G S L Y P R S F S Y D Y P D A G E E D P Q A A R L V D D V K D A M K T$
$D I D T$

 DF SQDEKFRPELLSYYRGSPGDTTVVYYLPV
ESSPA D QLQP ILLHK QEYAKP GDELPFKVPCIFDANT


UniRef90 UPIO0035DAF6B
UniRef90_G7UUS5
UniRef90-L0G375
UniRef90-J0V5V7
UniRef90_C2M6F9
UniRef90_UPI00029A8EE3
UniRef90 A6LGI6
UniRef90_H1YCG6
UniRef90_H1Y2U4
UniRef90_D5ETZ1
UniRef90 UPI0004560AA4 UniRef90_R5MTS6 UniRef90-R5W4V0 UniRef90_R6B6L6 UniRef90_R5UQP5 UniRef90_UPI000362E7AA UniRef90_R7ZRH6 UniRef90_M5FCC4 UniRef90-A4BVX2 UniRef90-H8KTK7 UniRef90_F9Z5G1
UniRef90_L7ED45
UniRef90_F4KM09
UniRef90_LOSUN6 UniRef90_M5TVZ3
UniRef90_R5IIT1
UniRef90_H8X652
UniRef90_G8NXM8
UniRef90_E8R0B1
UniRef90-D2R881
UniRef90_T1HY29
UniRef90_G8R0B2
UniRef90_UPI00030FE768 UniRef90 FOII96
UniRef90-C5M3D7
UniRef90_C6W9L3
UniRef90_M3DZ21
UniRef90 F4MN46
UniRef90_UPI000477220C
UniRef90_D5QFP9
UniRef90_Q18253
UniRef90_U5BR76
UniRef90_R5MGG1
UniRef90_D5G4W3
UniRef90 R6ST15
UniRef90- XOWNE2
UniRef90_UPI00047A9096
UniRef90_G0MB54
UniRef90 U4UEU1
UniRef90_J9GSJ6
UniRef90_G4N3A3
UniRef90 UPI0003F7494B
UniRef90_UPI0004207819
UniRef90_R6TYK9
UniRef90-R5NVU0
UniRef90_S9R4P6
UniRef90_R6X0U8
UniRef90_UPI0004571FB1
UniRef90_F4KYD5
UniRef90_R5IEL7
UniRef90 D2UEB5
UniRef90_R5INL2
UniRef90_S2DIY5
UniRef90_D5SXA1
UniRef90_H8MUP8
UniRef90_A0A016WCN5 UniRef90_W2UFR4
UniRef90_UPI00031BBE73
UniRef90_UPI00029B3604
UniRef90_R6AXJ7
UniRef90_UPI00037B3414
UniRef90_UPI00037BAF47 UniRef90 F9ZAS1 UniRef90_B0WXF5
UniRef90-K416K3
UniRef90_C0D944
UniRef90_UPI00037B2449
UniRef90-V7ZBM2 UniRef90_W7Y053 UniRef90_E5SS42 UniRef90_U6PIG1 UniRef90-TOIUB4 UniRef90_R5RVLO
UniRef90_R5I6V1
UniRef90_G3B8K3
UniRef90_K1LKK2
UniRef90_UPI00047220D5 UniRef90_R6CLS2
UniRef90_UPI0004439916

ALLDDT\L Y SNPWS $\quad$ NNQMRWDEDSQRFTF|L|FNE

 RI D QELSLLWPAPALQKQRDDEHRPNLWHGTKDKLYFTRTS Y L K $\square \mathrm{D}$ NHDAHY LT N L A WTP DEKQQLLEVNR G NVA PD Q H R G T L S D D DS S S GTF D D I D WK A D G S EVVAFV S T S WL E T

 $Y$ L Q A G DP T D R Y F T N $\square$ S WA P D A Q T VY MLE LN
$Y$ LQA G DPTDRYFTNDSWSPDEK SVV VIE $\square N$ EI KTAAWKNQS DDEQKQRDMELIPR DWQGDNNRFFLTRSS $K I D T Y R W P D Q Y I D V L Y V S Q \quad D G K R L Y F Q R Y N R P$ I D IVERTARKAKI QKWNDQYVMPFSVTS DSKYVFFERTK

 V L P HLKS P H F M P A Q L R W AI D D AL FSNPFELSPDRWWADGRGFTFEYNQ KMAPDLLQRGSTTDHDADRSN EL LDDAQWSEE G DKFAAFVVSGS Y LQTGG EPKEQY LT NIIHWSNDEKSIY IAV VN $F L D V$ V


 ALLQDKDDSLGRDFVVYQASWDDENNF LVKETART

 H WL LQPP QVFHE LEYY LT SA GWVNGENK EVVAVWMNRA $T$ LK TGEPNTQYLTNVAWGP K S EKIIYI A HLDNRD FVTWDT K T F E Y L C A VK WDK S GPLTI QURDRK $Y \mathrm{~L}$ K VD $\quad$ NHDAHFLTNLAWTPDEKQILLEVVRG $K$ Q L N D D D T R LGVD K IL Y DAK W DD S K N F L MK Q TD R T

 Y L E TGAP Y DRFFTNIAWAPD WI RWD QERY P Y V VR VVWSKKET S S K Y $1 . Y$ Y WI R WD QERYP Y V VR VVWSKET G H L SMMVVM RA ETAPPNELSAANGDYYVLTNKWDTMPRNGSRLVTVWANRD LPVGTYK DQS L G L WS E SL P K N A R D D D F K P V K WL G N K D S F Y
 TVDQELS LQSAPATVNDQFEEFGSIDWLGGPDGFWLTRMS


 VVDQT L GL EMKP WMQK QR DME DQPVVVWQ GD NE HF Y L T R S S
 $T L Q T G A P K E Q Y L T M V T W D P$ N N Y $\quad$ MYVGVLNRG $T L K T D \quad G P K E Q F L T C V T W S P D G K Q I Y V V L N R E$



 P H TVVEMSSRPD DVRMRE FY DT MVVK WA T S T K L A A V N WL N R P
 GAARRTVIDNALVANP YQLSSPIQWR GDSASFVFDEVQQ K V D L E K WP D Q Y IMP LT DTKKGEIFFERTK W $\quad$ M D K V H F F P P L E L I P P D Q Y S V
WA

 KI DAEK KLDQS DGVWGK P S LA K DRDNEFRPS DWLGDDS RFYFSR T S
 $K \boxtimes A \square E K K$ W E I K Q N L S L L S Y K P A E QK Q R D M E Y V S P V WL L

 DLAVGGKWKDQKLTVHTVGRPVERLYGVRKKRSCN
 DLVYMQTGEPKEKYLTNVAWS GDEQNI LIVLNRA TFAPPDENYNQNFTNFWAEPLNFAVRFADEQNYFV VAEPPVVLNGMNQSYYVFSNRWMQNELGEERLVTVWSNRE
 THAT APYANGYYLSFGOWSGDSKYFTFFYM
 F EVVESKKET I I H D GKEVI A ST
EADKH
K IIS TREVQPFSSLFPSVEYI ARAGWTRDGKYAWMF LDRP

## UniRef90 UPI00035DAF6B <br> UniRef90-G7UUS5 <br> UniRef90_LOG375 UniRef90 R5U5Y9 <br> UniRef90_J0V5V7 <br> UniRef90-C2M6F9 <br> UniRef90_UPI00029A8EE3 <br> UniRef90_A6LGI6

UniRef90_H1YCG6
UniRef90-H1Y2U4
UniRef90_D5ETZ1
UniRef90 UPI0004560AA4
UniRef90-R5MTS6
UniRef90-R5W4V0
UniRef90-R6B6L6
UniRef90-Q8PPU4
UniRef90_UPI000362E7AA
UniRef90-R7ZRH6
UniRef90-M5FCC4
UniRef90-A4BVX2
UniRef90_F9Z5G1
UniRef90-L7ED45
UniRef90-F4KM09
UniRef90-M5TVZ3
UniRef90-R5IIT1
UniRef90_H8X652
UniRef90_G8NXM8
UniRef90-E8R0B1
UniRef90-D2R881
UniRef90_G8R0B2
UniRef90_UPI00030FE768 UniRef90-FOll96
UniRef90_C5M3D7
UniRef90_C6W9L3
UniRef90-M3DZ21
UniRef90- F4MN46
UniRef90-UPIO00477220C
UniRef90-D5QFP9
UniRef90_Q18253
UniRef90-R5MGG1
UniRef90-D5G4W3
UniRef90-R6ST15
UniRet90_XOWNE2
UniRef9O_UPIOOO47 UniRef90-G0MB54 UniRef90-U4UEU1 UniRef90_J9GSJ6
UniRef90-G4N3A3
UniRef90_U2HW44 UniRef90_UPIO003F7494B UniRef90-UPIOO04207819 UniRef90-R6TYK9 UniRef90-R5NVU0 UniRef90_S9R4P6 UniRef90-R6X0U8 UniRef90-UPI0004571FB1 UniRef90_F4KYD5 UniRef90-R5IEL7
UniRef90 D2UEB5 UniRef90-R5INL2 UniRef90_S2DIY5 UniRef90-D5SXA1
UniRef90 H8MUP8 UniRef90-A0A016WCN5 UniRef90-W2UFR4 UniRef90_UPI00031BBE73 UniRef90_UPI00029B3604 UniRef90_R6AXJ7 UniRef90_UPIO0037B3414 UniRef90_UPI00037BAF47 UniRef90-F9ZAS1 UniRef90-BOWXF5 UniRef90-K416K3 UniRef90-COD944 UniRef90_UPIO0037B2449 UniRef90-V7ZBM2 UniRef90-W7Y053 UniRef90_E5SS42 UniRef90-U6PIG1 UniRef90-TOIUB4 UniRef90-R5RVL0 UniRef90-R516V1
UniRef90-G3B8K3 UniRef90-K1LKK2 UniRef90_UPI00047220D5 UniRef90-R6CLS2 UniRef90_UPI0004439916

RDQNYAQ VQYDAVSGKRTGDLYEEKHTRYVEPQHP L RD LIHRDDVCTYTLGADSVVPIVKERM EDNKPYTYQE RTWDEVDVCSVNTSTLLEVKELIHEVDKPYRDPHARSVE

 RGHQLYRLVEVDAATARARSIDDKTFVDYQPLVMDQEGTG RDHKUAHLQUADANTGUVTSUHKEEVDTYYESGVNH RDQNELKYNEYDAVSGKFVKTLFTE
 R GMPRRLRLVEIDAGSGALRTVLEESSDTRLQLNVYSYNRP
 $R G H Q A Y T V I E V D G K T G K A R P L I Q T K T F F Y Y S N L G P G L S A G$
$R N Q T W L D V Y A V N G K G E A R K$
$R G H$
$R$

 S S ILLSKKLYQPEKHE VRVINSTNVTADYNGWVEKMSP




 $R D L K R M D I W V V G I D S D S T K T V I D E R M M N T V E$
 QNHSYVVTLCN


 RGFKEDNL LEMDRSTGSLRKIYSEASKTNDNT
RDQNTLDLYSVSVADGSKKHIYHEEYKTWLDW
RGHKTYRVLELDAETGKVRTLVEESSPTFVNYSRMFRH


 RGHQEYAVYSMYSDDGSUKNLIMKEESPTYRDP
QTEE QLLADDTATGKTRVLL
QNLVY CT L CN
E $\square D C V L T H V Q S F T V N G R S M W A E P A$




 EMELCRVFPETGEVKVLI NEVCEPYFNDQ

QNLLY $\square T \square C N F D C S \square T F T Q S F T \square N G R T \square S A E P T D F K T \square L A$ Q $Q A V Y$ QA DPA T GAA R V VA HAAVK PVVTVT
QKHMHLNMYRASDGKF LRTVLTTEDNEKWVEPT
$R G H Q L Y Q L V A V D A A D G S C R N L A E E K T N T F V Y Y N D L Y R Y Y M$ LTMUSTNKFKEI DEVVDA RGYKQMDFIE INALDGSYRS LFVDQSDTFVENTQLF DE DG RGHKVYRVLAMSAQTGKVRTI IEETATTFVNYPRHYRYDF GHHLY QMLAMNAETGKLRTVVEERANTFVNYGRDWRQFI

## UniRef90_UPI00035DAF6B UniRef90-G7UUS5

 UniRef90-LOG375 UniRef90-JOV5V7 UniRef90-C2M6F9 UniRef90_UPI00029A8EE3 UniRef90_A6LGI6 UniRef90-H1YCG6 UniRef90-H1Y2U4 UniRef90-D5ETZ1 UniRef90_UPIO004560AA4 UniRef90-R5MTS6 UniRef90-R5W4V0 UniRef90-R6B6L6 UniRet90-R5UQP5 UniRef90_UPI000362E7AA UniRef90-R7ZRH6 UniRef90-M5FCC4 UniRef90-A4BVX2 UniRef90-H8KTK7 UniRef90-F9Z5G1 UniRef90-L7ED45UniRef90 F4KM09 UniRef90-F4KM09
UniRef90_LOSUN6 UniRef90_M5TVZ3 UniRef90_R5IIT1 UniRef90-H8X652 UniRef90_G8NXM8 UniRef90-E8R0B1 UniRef90-D2R881 UniRef90-T1HY29 UniRef90_G8R0B2
UniRef90_UPIO0030FE768 UniRef90-F0ll96 UniRef90-C5M3D7 UniRef90-C6W9L3
UniRef90-M3DZ21 UniRef90-M3DZ21
UniRef90 F4MN46 UniRef90-UPIO00477220C UniRef90-D5QFP9 UniRef90_Q18253 UniRef90_U5BR76 UniRef90-R5MGG1
UniRef90- D5G4W3
UniRef90-R6ST15 UniRef90-XOWNE2 UniRef90_UPI00047A9096 UniRef90-G0MB54 UniRef90-U4UEU1 UniRef90-J9GSJ6 UniRef90_G4N3A3 UniRef90-U2HW44 UniRef90_UPIO003F7494B UniRef90-UPIOOO4207819 UniRef90-R6TYK9 UniRef90-R5NVU0 UniRef90-S9R4P6 UniRef90-R6X0U8 UniRef90_UPIO004571FB1 UniRef90-F4KYD5 UniRef90-R5IEL7
UniRef90-D2UFB5 UniRef90-R5INL2
UniRef90_S2DIY5
UniRef90-D5SXA1
UniRef90-H8MUP8
UniRef90-A0AO16WCN5
UniRef90-W2UFR4
UniRef90_UPI00031BBE73
UniRef90_UPIO0029B3604
UniRef90-R6AXJ7
UniRef90_UPI00037B3414
UniRef90_UPI00037BAF47
UniRef90-F9ZAS1
UniRef90-BOWXF5
UniRef90_K416K3
UniRef90-C0D944
UniRef90_UPIO0037B2449
UniRef90-V7ZBM2
UniRef90-W7Y053
UniRef90_E5SS42
UniRef90-U6PIG1
UniRef90-TOIUB4
UniRef90-R5RVL0
UniRef90-R516V1
UniRef90_G3B8K3
UniRef90-G3B8K3
UniRef90-K1LKK2
UniRef90_UPIO0047220D5
UniRef90-R6CLS2
UniRef90_UPI0004439916

330
340
350
VIMESSQETLWMSERDGWNHLYLIFDETGFMKHQ|ITR TASWAYLPQTNEAVWFSERSDWGQLYLYDTTGQLKHAITT KKFRKDLNDGQEAI WASERDGWRHLYLAFDQTGEEMKRQLTK FLNDGKEILFRSERNGWGHYYLYDTTGNLKNQLTD G N GAADFDPNHPNEFIWLDSEKDGFMNGYVCATNSNKSNRELTS




$K R Y R F D \square G D G A E V L W M S E R D G W N H D Y D M D G T G A V K Q Q \square T K$ $D V R G \square Y P T E T G F L T L L P H K H E D D N I Y L D K T G T G K D T K W D G$

\begin{abstract}
TRPDH L LGGGKELIQWSERDGWAHLYLYDSQGNDKNRDTK


SEFGFFVILPHAYSDGN DYNH $W A H \square N \square M K N G S G R \square T A W H G$

 K D R

UniRef90 UPIO0035DAF6B UniRef90_G7UUS5 UniRef90_L0G375 UniRef90-J0V5V7 UniRef90_C2M6F9 UniRef90_UPI00029A8EE3 UniRef90 A6LGI6 UniRef90_H1YCG6 UniRef90_H1Y2U4 UniRef90_D5ETZ1 UniRef90 UPI0004560AA4 UniRef90_R5MTS6 UniRef90-R5W4V0 UniRef90_R6B6L6 UniRef90_R5UQP5 UniRef90-UPI000362E7AA UniRef90_R7ZRH6 UniRef90_M5FCC4 UniRef90-A4BVX2 UniRef90-H8KTK7 UniRef90_F9Z5G1 UniRef90_L7ED45 UniRef90_F4KM09 UniRef90_LOSUN6 UniRef90-M5TVZ3 UniRef90_R5IIT1 UniRef90_H8X652 UniRef90_G8NXM8 UniRef90_E8R0B1 UniRef90-D2R881 UniRef90-T1HY29 UniRef90_G8R0B2 UniRef90_UPI00030FE768 UniRef90_F0lI96
UniRef90_C5M3D7 UniRef90-C6W9L3
UniRef90-M3D721 UniRef90_M3DZ21 UniRef90_UPI000477220C UniRef90_D5QFP9 UniRef90_Q18253 UniRef90_U5BR76 UniRef90_R5MGG1
UniRef90_D5G4W3 UniRef90 R6ST15 UniRef90- XOWNE2 UniRef90_UPI00047A9096 UniRef90_G0MB54 UniRef90 U4UEU1 UniRef90_J9GSJ6 UniRef90_G4N3A3 UniRef90-U2HW44 UniRef90_UPI0003F7494B UniRef90-UPI0004207819 UniRef90_R6TYK9 UniRef90-R5NVU0 UniRef90_S9R4P6 UniRef90_R6X0U8 UniRef90_UPI0004571FB1 UniRef90_F4KYD5 UniRef90_R5IEL7
UniRef90 D2UEB5 UniRef90_R5INL2 UniRef90_S2DIY5 UniRef90-D5SXA1
UniRef90 H8MUP8 UniRef90-A0A016WCN5 UniRef90_W2UFR4 UniRef90_UPIO0031BBE73 UniRef90_UPI00029B3604 UniRef90_R6AXJ7 UniRef90_UPI00037B3414 UniRef90_UPI00037BAF47 UniRef90_F9ZAS1 UniRef90_B0WXF5 UniRef90-K416K3 UniRef90-C0D944 UniRef90_UPI00037B2449 UniRef90-V7ZBM2 UniRef90_W7Y053 UniRef90_E5SS42 UniRef90_U6PIG1 UniRef90-TOIUB4 UniRef90_R5RVL0 UniRef90_R5I6V1
UniRef90_G3B8K3 UniRef90_G3B8K3
UniRef90_K1LKK2 UniRef90_UPI00047220D5 UniRef90_R6CLS2 UniRef90_UPI0004439916

G D WVVVR QVVID RVIDEEK R QVWFKASGLFKGQDPYYDHYCRVN GE GNV T ELLKVVDVSRTVWFRGVGRTPGDNPYY QQLWK
 GSFHAEDLVGIDEKNRVLYFRENGEDPYLMHLYRINFDGS F K WVVV EVVLGFD AK G E NV F $\square$ K G T G E D P R E R H L Y S
 GE WVVTVKVLGFSKDGNKVIFE GTAPHPVSPNMQGTGMQRY
 GKWVVMEVLGFNLKDKAVI IASNELSPLQRNLWAVNISTG

G D WLVQ D V L GFN T S R K E I I I A S T E DS P LQ T N DF S L S VK N G GPWHVERRVVKVDEATRTVYFVANGENPYYEHFYKVVVDGS GT WVVA GPI F A KDEKRREVYFYGYGKEKDDDPYYYILYKVN GPWVSGHIAADDTMQRTVYFYGYGDDPKINPFYYRLYKSN




 G R Y E
$M E G E V T D D Y G F D P K G E R \square Y Y Q A A Y P S P L E R H D F A S D L K R G$ GEGNVTELLKVDA QTRTAWFRSRGLDPYDQQLWKVSLDGG GRWAVVRDLLGVDSAGDWAYFSAEGGDPYVRGGYRVPDVGG GHNWGTRRILKLLDEAK GVLFYTSSRAEDSTRY DVVRLDDLD NKFQADSEAFYDRAENFLYFLTNEKSAMDSHLVGGDLLSRD GD WLVR NVD WVD DAKRQUYFETGG VVPGQDPYFTQQYR
 $G K Y Q V T D I L A D W D Y D N V V Y Y L G D E E K P G E R H L Y T V R N P R K$
 F K WVVQE V L GFD T K GE TVVF VK GTGEDPREGHDYSVNIKK G Q N WEV IGKAVY DK QEKFIVFMSTIKSSMDSHLLGIDDMADN GEWAV RQILRRVADGVVHFTAS GLVPEDPYRRTVCSASDDG
 GA WE V K E
 GAFHVDGI ENVDTKGRKVFFVANGREKGEDPYYTHLYSVG

G A Y

GPWHVESVLKVDEKARVIYFVANGEHPYYEHLYRVNLDGS G D WLV R DV L GVVD QVKRLI WF SAN GDDADE GRDPYFK HV F R K DVIV DDF Q GFDN K GTKAYY DGATNNGMERHDLFEVELLKS G

 G D WVV R R V L K VID E DN QVIVYF TAAP K E D P Y H V H Y Y KI N M D G



 G P WVVSG Q

 G A Y D I R E I K G Y D M T S D T L T F D S A G G G L G T M R L Y K V S Q A T S

 GK WVA G NV I A I D T L K R TF Y L Y GYGKE K NVNPHYYTVVYKA H
 G D W M A E K

 G G WT S G K

 GE WEVLSSVDNVA QDKS S L DGREK SRNDYWRALGYRVMA Q G G
 GA WNVR E I Y DVVNE E D GYYVLFAA NGMNAID E K G GTPA GE DP
 GDFVVVTKI HH WDEKEDWLYFEA T GREKGRNP YFP HLLYKVK GA WCVREVVKVDEKNNTIYFSAPHEDPY QDHYYRDNMDGK G D WFV R GI QRVVDE E K GE Y Y S A K N E D P Y L V HYY K I G ID GK

UniRef90 UPIOo035DAF6B
UniRef90-G7UUS5
UniRef90-LOG375
UniRef90-R5U5Y9
UniRef90_JOV5V7
UniRef90-C2M6F9
UniRef90 UPIOOO2c
UniRef90_UPI00029A8EE3
UniRet90_A6LGI6
UniRef90_H1YCG6
UniRef90-H1Y2U44
UniRef90-D5ETZ1
UniRef90-UPIO004560AA4 UniRef90-R5MTS6 UniRef90-R5W4V0 UniRef90-R6B6L6 UniRef90-Q8PPU4 UniRef90_UPI000362E7AA UniRef90-R7ZRH6 UniRef90-M5FCC4
UniRef90- A4BVX2 UniRef90-H8KTK7 UniRef90-F9Z5G1 UniRef90-L7ED45
UniRef90_F4KM09 UniRef90-LOSUN6 UniRef90-M5TVZ3 UniRef90-R5IIT1 UniRef90-H8X652 UniRef90-G8NXM8
UniRef90-E8ROB1 UniRef90-D2R881 UniRef90-T1HY29 UniRef90-G8ROB2
UniRef90_UPI00030FE768 UniRef90 Foll96 UniRef90-C5M3D7 UniRef90-C6W9L3
UniRef90 M3DZ21 UniRef90-M3DZ21
UniRef90 F4MN46 UniRef90_UPIO00477220C UniRef90-D5QFP9 UniRef90_Q18253 UniRef90_U5BR76 UniRef90_R5MGG1
UniRef90_D5G4W3 UniRef90-R6ST15 UniRef90 $0^{-}$XOWNE2 UniRef90_UPI00047A9096 UniRef90 G0MB54 UniRef90-U4UEU1 UniRef90_J9GSJ6 UniRef90_G4N3A3 UniRef90_U2HW44
UniRef90_UPIOOO3F7494B UniRef90_UPIOOO4207819 UniRef90-R6TYK9 UniRef90-R5NVU0 UniRef90-S9R4P6 UniRef90-R6X0U8 UniRef90_UPI0004571FB1 UniRef90_F4KYD5 UniRef90-R5IEL7
UniRef90-D2UFB5 UniRef90-R5INL2 UniRef90_S2DIY5 UniRef90-D5SXA1
UniRef90 H8MUP8 UniRef90-A0A016WCN5 UniRef90_W2UFR4 UniRef90_UPI00031BBE73 UniRef90-UPI00029B3604 UniRef90-R6AXJ7 UniRef90_UPIO0037B3414 UniRef90_UPI00037BAF47 UniRef90-F9ZAS1 UniRef90-BOWXF5 UniRef90_K416K3 UniRef90-C0D944 UniRef90_UPIO0037B2449 UniRef90-V7ZBM2 UniRef90-W7Y053 UniRef90_E5SS42 UniRef90-U6PIG1 UniRef90-TOIUB4 UniRef90-R5RVL0 UniRef90-R516V1
UniRef90_G3B8K3 UniRet90_G3B8K3 UniRef90_UPI00047220D5 UniRef90_R6CLS2

 VDKGIS S LKKLTSENATHDVSFSPSYKYYI DSYSTVEMPN MDREGATLGTKEDGQHRVDFLKSKRYFI DTFSRVDMEP $E P V L L T P$
$F D G T G L T$$\quad$ EPANHSIALSPDGARFVDTYSTSVTPP

 KKTRLTQAE
RTDQLSKV
AGTHDA 1 FSPDKQYY DDQ $\square Q S A T \square A R$ APQLLTPEPAD GDDHLVDAGTGMLFGGRAPQALSPGGGYLVDTVSSLTQPP KKHTSERDSFGDYNFSSVQUSPDNKYYAAQUSNVSTPT KYVE ITSLGED GYY IASFSRNGRF LNLQYEGPNQPW
 GLVQLTEGD GGRGLTSP
 KPTRLTANE GTHMPKDNDAGTYFDDNFSSTEVPW LLQRRPDTDRLGEGEGDESVVFSENKDVFVLTRTSPGEMP TVKNLTPKGGVHNGMLSHSGRYLLDDHSADNTPY Y K M Y N ${ }^{T}$ T ANFTVLTDDTSDH PVQRLAADGYDHMADAGTGAAVTPAADFFLDSMSTVDTPP ITKQLTSGQ ASVRLTEGE G GWHSVTMSDDYKLFLDNFSNLNTPG
 LDGGAVTLLNNGNFN.HDANLNDQGSYFVNNSSRVNTAP
 E
$G \square V D \square T P A \quad \square G N H A D T W S N D F A Y F V D Q Y S Q V N T A P$ GKEKTTLHKDDCKTMGYQSA DPTGER】VVQC


VN QS I VLS SLVPDCDYGSYDVSPNGKRAVLGC
EPLELTPEPLD GKVNVGTPVRLTSDEGWHNVSVNESGKWFIDSYSSFNVPG YNKHLLKITDLTPEEANHIVTFNADRTLFTDVYSKPDMAP TNK SKKVEFVLGNDKEAKKYSFTSDRDGQYVLDVYGGGPEDPY LNGADLT LDTPEDAYHDDQFAKDRYYFVDNYSKVDQPT NMICLTPAEEN

HQAVFSYDMKYVVDKYSKVDTPP


|  | VR 450 |
| :---: | :---: |
| UniRef90_UPI00035DAF6B | VELR D A S S G D L I S VV\|E |
| UniRef90_G7UUS5 | $V \mathrm{~T}$ L L R S A D G T ElV S EVV |
| UniRef90_L0G375 | V SVVVSLS T GKTI MELE |
| UniRef90_R5U5Y9 | V NVVRNRNGKVIMTLE |
| UniRef90_J0V5V7 | V S AL Y D T K G R K V M D L E |
| UniRef90-C2M6F9 |  |
| UniRef90_UPI00029A8EE3 | VVAL R Di N GKLI T E L |
| UniRef90-A6LGI6 | 1 DLI RVK D A KVI STL |
| UniRef90-H1YCG6 | V T E L R T A N G A P V L TV E |
| UniRef90-H1Y2U4 | KSVLR GNDGHQVMELEAADLSRLMAA GYK |
| UniRef90_D5ETZ1 | $N \mathrm{~N} \mathrm{EV}$ T S TH H |
| UniRef90_UPI0004560AA4 |  |
| UniRef90_R5MTS6 |  |
| UniRef90-R5W4V0 | CADLLDNNGKKVMTIQESDFSSLKA A G Y K |
| UniRef90-R6B6L6 | K NVVRNRRGKVI MTLED |
| UniRef90_R5UQP5 | K ILLKDNTGKVI MEL |
| UniRef90-Q8PPU4 | VTLL R E A D G R TVV STM |
| UniRef90_UPI000362E7AA | V T V L R S A D G S V V M N L E |
| UniRef90-R7ZRH6 | Q S V RRLED G S K |
| UniRef90-M5FCC4 | R T L Y R A I D N A K L M Q VE T |
| UniRef90-A4BVX2 | $\square \mathrm{AV}$ L R N G N GEE $\square$ M NLE T |
| UniRef90_H8KTK7 | KVNL F S $\quad$ D G K T S T T L |
| UniRef90-F9Z5G1 | VI LL VQND G K K V V EL |
| UniRef90 L7ED45 |  |
| UniRef90_F4KM09 | S VML H D N N G L Q L R Q |
| UniRef90_LOSUN6 | V T L L R Q A D G R T L A T V |
| UniRef90_M5TVZ3 | RTVVLRS D D G R EVMVLE |
| UniRef90_R5IIT1 | K T V L |
| UniRef90-H8X652 | QRLIDMA ELHDSLEDAATLEKAI |
| UniRef90_G8NXM8 | AQLRRTEDQKVVLDL |
| UniRef90_E8R0B1 | T I T L R S E D GLA A R T I N T D T |
| UniRef90_D2R881 | V HLRRRSS G SLVAELES |
| UniRef90 ${ }^{\text {T1 }}$ HY29 |  |
| UniRef90-G8R0B2 | R S Q I G T N N K V N Y T L D S D |
| UniRef90_UPI00030FE768 | RSFVV HTRD K R $\square$ GEL |
| UniRef90-F01196 | NVSLVD |
| UniRef90_C5M3D7 | QRLI DMGD |
| UniRef90_C6W9L3 | V T V V R S WS G E I L V L E |
| UniRef90_M3DZ21 |  |
| UniRef90-F4MN46 | TVNV IE T T K T K S KI L |
| UniRef90_UPI000477220C | VTLV SLLES GEKKEI L R A E D P L |
| UniRef90-D5QFP9 | SVLL R G R D GEVVTGVLP D |
| UniRef90-Q18253 | L Y L V D V V T T K K I M L E |
| UniRef90_U5BR76 | V S L L D A S G R K V M L E |
| UniRef90_R5MGG1 | CADLIDR NGNKVMTI QESDFSQLK A A G Y Q |
| UniRef90_D5G4W3 | E E LR S ${ }^{\text {L S P D T P V RVI N D N A S L K N K L S E Y }}$ |
| UniRef90-R6ST15 | F SVLY D A N G K K V C DL |
| UniRef90-XOWNE2 |  |
| UniRef90_UPI00047A9096 | $\square \mathrm{T}$ E LR R A D G T L VMP LE |
| UniRef90 G0MB54 |  |
| UniRef90_U4UEU1 |  |
| UniRef90-J9GSJ6 |  |
| UniRef90_G4N3A3 | 1 S EL HRAD G S LVV E L E T |
| UniRef90_U2HW44 | I Q I I NKK D N K A I S L L T |
| UniRef90_UPI0003F7494B | V NI I NLK N N K |
| UniRef90-UPI0004207819 | IS V I R L E T G K I L Q K $\square$ S E |
| UniRef90-R6TYK9 |  |
| UniRef90-R5NVU0 | V T V L R M T Q G E K |
| UniRef90-S9R4P6 | QAI YS L N A P TLLY I VED N K E L H T A A L N Y E |
| UniRef90_R6X0U8 | $R T$ DLM D S G R KLM TLEESDFSGLLA A G Y Q |
| UniRef90_UPI0004571FB1 |  |
| UniRef90-F4KYD5 | KSELLDNLGNK凹MDLET A D L S QLF A |
| UniRef90-R5IEL7 |  |
| UniRef90-D2UEB5 | V MEL H A D D G L LQVVE |
| UniRef90-R5INL2 | TIVVLKDNNGRVILLEL |
| UniRef90_S2DIY5 | V S KV Y S L GKKVNEL |
| UniRef90_D5SXA1 | TELI EVEG H RVVSSLESHDDLRERMK |
| UniRef90-H8MUP8 | R T L V L K G G M MVGGEL |
| UniRef90-A0A016WCN5 |  |
| UniRef90_W2UFR4 | ES IVID R H GREILSLE T |
| UniRef90_UPI00031BBE73 | VELVRKA A D G M M CLL E DVSALK D T |
| UniRef90_UPI00029B3604 | KSTLY D K N G H K V MEL E A T DLSLLT A A G Y K |
| UniRef90_R6AXJ7 |  |
| UniRef90_UPI00037B3414 | TTVVLRTSTGKVVMELE |
| UniRef90-UPI00037BAF47 | $R S V L R D K N G K L I C Q L A E A D L S A L F A S$ |
| UniRef90_F9ZAS1 | CA DLLDDREGNKVMTIQESDFS QLKA A G Y R |
| UniRef90-B0WXF5 |  |
| UniRef90-K4I6K3 |  |
| UniRef90-C0D944 | V TVL R NLE GALI REL E |
| UniRef90_UPI00037B2449 | HSVVR C T D G K V V V E L |
| UniRef90-V7ZBM2 | VMELHATN GRLL QQV E |
| UniRef90-W7Y053 | 1 l - Q L D V K K R S S V Q L H E A K D |
| UniRef90-E5SS42 |  |
| UniRef90_U6PIG1 |  |
| UniRef90-TOIUB4 | $R A V L R D A T G R \square V R E L A D D S R L R A T$ |
| UniRef90_R5RVL0 | VVKVTS TIDGKMSKTI |
| UniRef90-R5I6V1 |  |
| UniRef90_G3B8K3 | QKI I STGD |
| UniRef90_K1LKK2 | HAVLR LE T G K V I L D |
| UniRef90-UPI00047220D5 |  |
| UniRef90-R6CLS2 | $V T V L R D A T G K L V K T L E T$ |
| UniRef90_UPI0004439916 | $\mathrm{CVV} \mathrm{H}\|\mathrm{V}\| \mathrm{Y} \mathrm{K} \\| \mathrm{T} \mathrm{G}$ |

RFSPEKMRKMVFST S $\begin{aligned} & \text { VNPHWMKKYEYETSDGKRWYVV }\end{aligned}$ SVNPNWLEGHQTYTKGQGVISVGM

 Y S LIEEVTPGNYYPK $\square P R \square Q W \square G D \quad R C T Y \square E G D K L M E S$

PQ WLLREGD R LIF DA G T WMLI QNLT DEETVLGKYAPTTQTAQWRKDSKYLSTDFSSGMEK

EFQTTSGKEYYYV
QRNFDMTEAT LGQGRQR $\quad$ LQPSWKNDNSFVTKNGDSGLYK
WPDR $\square R D T \square T P P R W \square P E G D R F V Y W R D T W V L V$
 RAYSLREKFSNKVFYSNVTPTWDEGTHQFWYVRNTYVSV
$\square H S P N W S P D G Q Y \square V A R K G E \square W M Y$

SVT D YEPSWSPDGSFVSSRDGNDYVM
QN $\square T \square E V L R S G K T F S F R A P V R W L K D G L Y L I R \square G D A Y V V K$
KSTRWDSDRQLVYWDSGGLRVY
RFSAKKVNQMVFSTQ DT PNWFRDSDKFWYS WRTRYY VV
 KYNVSFENYRKGAF VSPRKMVRWDGNGFYDTQHDEEYVVH WSRDGARLAFA WN D $\square W V Y$

```
A E T K K VYEKNGD \(\square\) F \(\square Y\)
YSFTTDEGTKYYLV
```

SPTWDDQSNYHR $\square E N G H L V R Y$
EDTLQP TYNKSSVSTSWLNGATYVYEQYGKLYLV LPGTWNARYNRAK TQKVYEKNGD TYLL

QARFVKGGVLYRKGVKGILLIA
$\mathrm{T} \square \mathrm{K} \square \mathrm{K} D \square \mathrm{M} Q \mathrm{G} \mathrm{DF} \mathrm{V}$ G HRPSPYWSTDGKT $\square \mathrm{Y} F \mathrm{D}$
W

KRQVSKED FRD LNNPSWSPDGRFDSAGTGE $\square W \square Y$ E N A LQ E VYRRSS DSASWDKGSSFLYEQYGRYYLV
$P \square S V Q Q \prod M Q D P A R T S P H S L Q W A G N S Q F \prod Y F K W N S L Y Q V$ SLS IKE $\square M Q G D F \square G H L P S P Q W S \square D G Q T \amalg Y F R W N R L Y A H$

VY T R N G $\quad$ LI $\quad \square Y$

$\square T \square D D L F R P K \square T G T S P S P V W A P N S E Y F A F S W G R G L W V$ TQRLFDKQGDLYLL


R Q LT F E


LH NPSWS PDGQYワAVKQGS RMY VT DETFRL L NSPAWSPDSQYLVARKGEVWDY

UniRef90 K8ZDS6
UniRef90 F9Z5H7 UniRef90-19PNA4 UniRef90-UPI0004089473 UniRef90 V4PFK6 UniRef90- АЗНTV3 UniRef90-E2LPO3 UniRef90 Q9P7E9
UniRef90 H9J918 UniRef90_UPIOO04232CE5 UniRef90_C3JC57 UniRef90' UPI0003045C1D UniRef90- E3FIW1 UniRef90_UPIOOO47EE659 UniRef90-B4CZA3 UniRet90 F4Q0SO UniRef90-C3QW08 UniRef90-H1H6L2 UniRef90 UPI000478254A UniRet90 H8MYF3 UniRef90-J9kJX5 UniRef90'UPI0003A8345D UniRef90 H3F980 UniRef90-K9E3V8 UniRef90-H1Y341 UniRef90 UPIO0020F656A UniRef90-UPI00037D051B UniRef90-F8ENM4 UniRef90-UPI000331696A UniRef90-A2TZK2 UniRef90-A7RPQ4 UniRef90-B7GE82 UniRef90 UPI0003B5D383 UniRef90-R5BF94 UniRef90-G8YDA8 UniRef90-W5X6S6 UniRef90 R5PCU3 UniRef90-E9GU52 UniRef90-R5BER2 UniRef90 R5B7L7 UniRef90-L7UM93 UniRef90-W5JJG7 UniRef90-X1J394 UniRef90 C4Y481 UniRef90-D50IG2 UniRef90 UPI00036978D8 UniRef90-UPIO0040A56F6 UniRef90_UPIO003FAD461 UniRef90_R518H4 UniRef90 H2LLO6 UniRef90 R7J360 UniRef90-D1W127 UniRef90-E6MTB6 UniRef90 JoLHI4 UniRef90-V4PBR8 UniRef90-Q20C81 UniRef90 G2PJY5 UniRef90-B1H219 UniRef90-F6T4Y7 UniRef90-WOADL1 UniRef90_G1WC06 UniRef90-A41HZ7
UniRef90-A7HD36
UniRef90'UPIOOO4799EE9 UniRef90-A0A023D4Z8 UniRef90_LOG2K1 UniRef90 UPI0003990691 UniRef90-B4IEW1 UniRef90-B3SEA3
UniRef90 UPlooo2B45C2B UniRef90-K1KXL5 UniRef90-UPI000255B863 UniRef90 UPI000426E70E UniRef90- $\mathrm{H} 3 \mathrm{~B} 2 \mathrm{E9}$ UniRef90-UPIO0047A8202 UniRef90-UPI00036F8076 UniRef90_J9K1F8 UniRef90-A5DLE9 UniRef90-S4RMG4 UniRef90 UPIO0037E5E50 UniRef90-K9VG83 UniRef90-B7RTU7 UniRef90 N6US41 UniRef90_Q468D0 UniRef90-V4H460 UniRef90-UPIO004726A14 UniRef90 E3MB75 UniRef90-A0A010RIW5
UniRef90_UPloo04423318

 DTATGQVSDLVTEAAMKPLLIPILGDK GPYDAWPEA D LKK TTKEAFDHDELASLLSEKTDGD AA KNLPFNR
 DTFNNTDTVLVTNHTLSPHLAQATSKEVDAAADRGDDPDY DLVTGQSRSIVDEVQLARLLAQATSKEVDAAALRDDDPDY
 SAANGTASTLASKAEFETALKS KUSNDEFTURTFPF

MPAAGKREPLFDKGKMAMQLSEFTKGVV DRNK DDDSSV SQANKSQTALTAKQLEEVINNTVKGTTFNPTNLTWLNDNE DAKRRTQQPLLDSESLRSQTALFSFTLTAAKGUFTVQ
 TTDSSEERKFTDAKQFPSGFNGEKTKFSPSGKYAALSRQ NADKKGRKELFDHSRLADALTKASGKEVSADNLERLHVNK

SREEELLRERKRLGVFG TTSYDFSESGLfLfQASN HYGGGEGRQLKER $\square G G D \sqcup A Q K N \mid A D P A F S P D G R Y V Y Y S D C$ VYSREEELLRERKRGGVFG TGYDFSESGLFLFQASN

SKEEQLLRERKRपGAFG $\square T S Y D F N D S S R F \square F P S N$
NTDGSNQ 1 RLTNSSDTD DNPSWSPDGSKVFWSD SSQTEYSYT पLESSDFTYNGQTVSY $\square H$ URSKHFLI IETD

RATTNQSLVLVPPHVVSQWRA DEFWPSYDGRYVLLRQH DPVKGTRTEVFDMDRFEAKH TP $\square R D \square R \square K D D E F T F S \prod T S$ DVATQETRELDTRERMRVTSRGFSSFALSEDGANLLVGLS H $\square$ RTGAPEKLMNNATFRQLIN VNSYDVSPDRNFVLLYAA

QFGTKYSYK TLESRQFEYENSQVEDTHLNPESTFHDLVSD EAETGQVTHMDEAAHGKAKGVGVTQLAWLPDGRMAFV
DVKAGKAQQLTNTVERE SSPAFSHDEQRVVYMKD
DPKKKKपSLLFDPQTVAMQLNEESREDFNDKK【NTIKFNK AYSREEELLRERKRLGAFGDTSYDYH SKTGLFLFQATN
DAKTGKREKLIADAFDKQYQQDTGDTAFGNDQDRYDFVKG DARTGHQEPLLKDQKHKRLTGDSTKTHNDPRGYETTLKNN D IK SGKTQQI TNTVERE NSPSFSHDEKKVAFVKD DPATGASRELAQDAALAPKLTAAGA EDGDKVDIRPT
 VYSREEELLRERKRLGGFG I TSYDSETGLFLFPANN DKYSKEEELLRERKRVSFHG TVYHISSNNQVLMFSTG HVSGGSGVALVKRAS EQLQKELGEPAFTPDGKGIIYYSRN DARTGRQEPLINDQQQVQYQTLTGDTTMKADKLRLYLENN SREEELLRERKRDGTVGUSAFDYH AESGTFLFQAGS NTKTG $H$ VISRAEEQGLGLPDRSPYFNDQRTKKLYMRG HLKSSKTVKTDFETEYALPSAYGT FNEDKSLKVY
DFENGQEQQLL EDGERTSQPDFGADEDFTAFATN SREEELLRERKR $\square G T \| G \square A S Y D Y H$ RESGTFLFQAGS SREEELLRERKRपGVFG $\square$ TSYDFHESGLF पFQASN
SVYSKEESLLRERKRMVSHG TTSYEFNDETGCLLFRSG NIAEGTRNVIL SSKDGNEVRLLSNTESAPV RDMVWVNKN DLKSRTSKELLDLSFA A TNSPEFDKNEDQLVFHAE



DSHTGECLRTFTG HENSVRSVAFSPDGEWLASG
HVDGNRSQQQ\|VARPNETFQKEQGEPTFSADGNSUYFSRD
NHNGWVNNVVFSPDGKYAATASN HTSGGKGVLVRERDHGAKSQKNIAEPAFSTDGKKMYYSVD HVAGGKGVKLTERPNEQKKLGEPAYSPDGRYUYFSQD

S REEELLRERKR\|GTVG】ASYDYH RESGTFLFQAGS

UniRef90 K8ZDS6
UniRef90 F9Z5H7 UniRef90-19PNA4 UniRef90_UPI0004089473 UniRef90 V4PFK6 UniRef90-A3HTV3 UniRef90-E2LP03 UniRef90- Q9P7E9
UniRef90-H9J918
UniRef90_UPI0004232CE5 UniRef90 C3JC57 UniRef90 UPI0003045C1D UniRef90-E3FIW1
UniRef90-UPIO0047EE659 UniRef90 B4CZA3
UniRef90-F4Q0S0
UniRef90-C3QW08 UniRef90-H1H6L2 UniRef90-UPI000478254A UniRef90_H8MYF3 UniRef90-J9KJX5 UniRef90-UPI0003A8345D UniRef90_H3F980 UniRef90-K9E3V8 UniRef90-H1Y341 UniRef90 UPI00020F656A UniRef90-UPI00037D051B UniRef90-F8ENM4 UniRef90-UPI000331696A UniRef90 A2TZK2 UniRef90-A7RPQ4 UniRef90-B7GE82 UniRef90-UPI0003B5D383 UniRef90-R5BF94 UniRef90-G8YDA8 UniRef90_W5X6S6 UniRef90-R5PCU3 UniRef90-E9GU52 UniRef90-R5BER2 UniRef90-R5B7L7 UniRef90_L7UM93 UniRef90-W5JJG7 UniRef90-X1J394 UniRef90-C4Y481
UniRef90-D5QIG2 UniRef90-UPIO0036978D8 UniRef90_UPIO0040A56F6 UniRef90-UPI0003FAD461 UniRef90-R518H4 UniRef90 H2LL06 UniRef90-R7J360 UniRef90-D1W127 UniRef90-E6MTB6 UniRef90- JOLHI4 UniRef90-V4PBR8 UniRef90_Q20C81 UniRef90_G2PJY5 UniRef90-B1H219 UniRef90-F6T4Y7 UniRef90_G1WC06 UniRef90-A41HZ7 UniRef90_A7HD36 UniRef90_UPIOOO4799EE9 UniRef90-A0A023D4Z8 UniRef90-LOG2K1 UniRef90_UPIO003990691 UniRef90-B4IEW1 UniRef90-J3SEA3 UniRef90_L1KRR8 UniRef90-UPI0002B45C2B UniRef90_K1KXL5 UniRef90-UPI000255B863 UniRef90 UPIO00426E70E UniRef90-H3B2E9 UniRef90-UPI00047A8202 UniRef90-UPI00036F8076 UniRef90_J9K1F8 UniRef90_A5DLE9 UniRef90_S4RMG4 UniRef90 UPI00037E5E50 UniRef90-K9VG83 UniRef90-B7RTU7 UniRef90_N6US41 UniRef90_Q468D0 UniRef90_V4H460 UniRef90-UPIO004726A14 UniRef90_E3MB75 UniRef90-A0A010RIW5
UniRef90_UPI0004423318

GRVIFNYNR $\square$ TKK $L G Y T N L P S E S D M P P \square H G F F D S$
GMS P VMS P
STADVLKSDWDE TFLFD TT T QTLTEDEKDPKRLSWANIAP YDAD TRRSAGGRKLI YDVAAGTVTAAPFSPPPAVDAVVSP IKENGEDSFEWKNQSWTYSEGNLESKRASDRPNRDYSVSP
 STVRRGTEQLGVAHAAWLGP SAKDGTLTFGVADKQWTLNGAGALVEAKKGAPDGEGAVSP

DRFFGLGLSDGRV TADAPADLAADALPRDNLLAP S $\square$ NWK TVNTFETEVAGKKNNYKVTYDVVSKQUTSVISYAV

VTKTTAGTFDPKFSC
TFAKDQGSFEFDYYSYNRDTGK LT LVYYYVMPASWMTFSP DEFYTPDSTFKYYFKVNDTDKKVVNSFKFDLNGDQQ\|ISR GD WVLWDYKKQQEVVYRYSFDRKRWTHFTPT GRAF S LGLTTDKRLVALEPTHPAALSLVPGN SLSP
SKDMMTFS $\square G G G N F E Y N M K T K K V K E \square P K E E K K E T W M S L S P$ VMQGFRHSKDC $\square Y R \square A R V A N G K L V P T G N G T E \| L Q E F S W N P$ SLDTLRFVFNNQRWMYATRKNQLAWMERDDEKTANPDPSP
S $\square$ FHCRDGGKNGFMVSPMKP LE $\square K$ TQCSGPR MDPKDCP TTPVWEYNKNSTKEIYD DQD GEEETFDSGPGGAVAPVPSP SVDSAKNKRNTDLWMQSWDGKESVQLTFSPDGESQPRWSP SLIHCRDGGKNGFMVSPMKPLEIKTQCSGPR MDPKDCP $S \square Y$ TF VDWHNNEMP VMPDE $\quad \square P S Q V H E A K \square D A K \square C P C$
RDV YKE $V$ YVMDSDGSNQTRDTNNSNNDGNPSWSP


> WMEVDEENVARPVIS P HTDDPQHQPQRYYAVYD LDK $\square R \square E A E E L Q P T R L G F V G W A G$ GLKNDRDTTCFRYEDATARLDTVAREKD KYPRWASVAP GKLYVVARASGK VTELQTGPGVIDPRFAP $S G H A L Q F N R S F Y \square Y D L A T S N V F P L S V K E G D Q Q A P L W A P$
 MDGALRVADLHGHVGV LEVVHGVGQDSPSP GNLFAWAVGNGQTVQLTDFRKGRKPAEEGKDAQREWLKEQ KGDSFTFEHENNKYRYNLKTQQ S LIF YCQDGGNNGF $\quad$ SAPVKPLEITQCTGTRMDPK $\square$ CPGHP
NSQLFTFKNKGTVKLFNRKTGKLLLQKTSEDRQKYSYQTV DSKRFYWTHNKVHMI YNRATGVLSLDNTYAEKAEKKRRNQ GNLYLWTIANGQLAQLTDFKKGN KPGEEG A Y GDGVLTVAAGGKEWTIDAAGAVTAKARPEKA DGVVSP
AKTEAVYSKNGD TF LLDDSTYQSKTDTKTQERESNPHFTD SLYYCRDGGNDGFMVSPAKPDEDKTRCDGPR MDPK DCP SIYTIRMEDLGR INSQNYVVEPKHVDTSCQHSRMDPKFSP ITPGPVFEYAQDSNTYDLDTGKVETVVSGPGGAVRATPSP DSRYFYWTRSQKRLVYDRATQRLA WDSRPAEKGGATHYTK
 GDMYEE

SKRGDVFLLNLKT QLI TQQ NVFTYHRSSGKDKKDTNTSGEKPAEKASSQGS WTAPRLSP GIYHVKDGGPHGFTQQPLR P LVVETSCPNDRMDPKLCP
 $N D \prod Y S V N V E Q \square A S G E V Q Y A T P H V I P T N L F G S K M D T K M C P C$ NNLYVYDQKNGKDQKVSRDNTGNKPDEKKDNLAEREAWDR TIISLRGNHLWQTTLRKGEDSELMAVTEGAHNLSSEMSP NAFVYDLKTGSIKQLTHFKKGSSKE QLWQ VNDGETQGFTKQPLKPNAVKTQCPNDRMDPKICPA QLWQTSVSKGVDLQLMPVEA STL FQCNDNEYSTNSLYPTELRTNATGAKSPQDCP
 RQTSCTGSRMDPKFPP
 NPDELDEEAPYLQYATWSH



UniRef90_K8ZDS6
UniRef90-F9Z5H7
UniRef90
U9PNA4 UniRef90-UPIOOO4089473 UniRef90-V4PFK6 UniRef90-A3HTV3 UniRef90-E2LP03 UniRef90-Q9P7E9 UniRef90-H9.9918 UniRef90_UPIO004232CE5 UniRef90-C3JC57
UniRef90-E3FIW1
UniRef90 UPIOOO47EE659
UniRef90_B4CZA3
UniRef90-F4Q0so
UniRef90-C3QW08
UniRef90-H1H6L2
UniRef90-UPIO00478254A
UniRef90-H8MYF3
UniRef90-J9kJX5
UniRef90_UPI0003A8345D
UniRef90-H3F980
UniRef90-KKㅡㄹV8
UniRef90-H1 Y341
UniRef90 UPI00020F656A
UniRef90-UPIO0037D051B
UniRef90-F8ENM4
UniRef90_UPI000331696A
UniRef90-A2TZK2
UniRef90-A7RPQ4
UniRef90-B7GE82
UniRef90_UPI0003B5D383
UniRef90-R5BF94
UniRef90-G8YDA8
UniRef90-W5X6S6
UniRef90-R5PCU3
UniRef90-E9GU52
UniRef90-R5BER2
UniRef90-R5B7L7
UniRef90-L7UM93
UniRef90-W5JJG7
UniRef90 - X J3934
UniRef90_W8B7E2
UniRef90-C4Y481
UniRef90 D5QIG2
UniRef90-UPI00036978D8
UniRef90-UPIOOO40A56F6
UniRef90-UPIO003FAD461
UniRef90-R518H4
UniRef90 H2LLO6
UniRef90-R7J360
UniRef90-D1W127
UniRef90-E6MTB6
UniRef90_JOLHI4
UniRef90-V4PBR8
UniRef90-Q20C81
UniRef90-G2PJY5
UniRef90-81H219
UniRef90-F6T4Y7
UniRef90-WOADL1
UniRef90_G1WC06
UniRef90-A4IHZ7
UniRef90 A7HD36
UniRef90-M7NB71
UniRef90_UPIO004799EE9
UniRef90-A0A023D4Z8
UniRef90_LOG2K1
UniRef90-UPIOOO3990691
UniRef90-B4IEW1
Unirefofo-bISEAB
UniRef90-L1KRR8
UniRef90-UPIO002B45C2B
UniRef90-K1KXL5
UniRef90-UPI000255B863
UniRef90-UPI000426E70E
UniRef90-H3B2E9
UniRef90-UPIOOO47A8202
UniRef90_UPI00036F8076
UniRef90_- 9 K1F8
UniRef90-A5DLE9
UniRef90_S4RMG4
UniRef90-UPI00037E5E50
UniRef90-K9VG83
UniRefofo-B7RTU7
UniRet90-N6US41
UniRef90-Q468D0
UniRef90-V4H460
UniRef90_UPIO004726A14
UniRef90-E3MB75
UniRef90-AOAO1ORIW5
UniRef90_UPI0004423318

DGKYQVFGKNHNAYDRNDEDSTVVQLFDGTDEFSYMTGW
 DSSKVVYTKNYNLYWMDDSTIVENQLTTDGEKDYEYGWGG DGLYRVTHKGYDLAVVEDATGKTVPLTADGSYDQRYGMNY DRKWKAYVKNFNLFVENLETGEESQLSFDGKKDYEYASNW SVDRLAFVLENDITLCUFSDPPVTRRITYTGSVTTFNGVG DGSLLLAADNEVLARPGPPARRAPRLTNDSSPGRDYNGVS
$D G R F E I V A R D Y N L E A E R K S G R E V A L T R G T R E Q P Y G R G I T$ DAKWIARSSDGTLYMQQLEEAGRDKRTQRLVIAQNEGDT NGQAIAVQRDGGFAVLGSDGRT RIERSGEENHGW EGTQAKFASNNN VAWLQENNTRITTPSGQVIEEVTNDEN DGQWEVRDENHNVALHHAADEAVTMLTRDGTEENAYHGRA DGKF AYUQNGDIWVNDVDNSKSTRLTFSSEKKFVSSGES DKKYULYAKNHNLYVKGNKDTTEVQLTTDGVENFSYAREE AQGHYALLSDGQNI AVVTPGQEPKLLTTDGSFDIAYGV DGGTVAVQRDTGFAVVDAKGA
DSNY VVYAKNHNLYMRGNKDTTE DQLTTNGERYFSY A ESDSFAFVSGNTLFYQEKPEGKAKQLSQNGSDDVRY DGKYTAFIKNHNIYVKEVATGKEKQLSDDGTDSNYYSA DKHWLLYARNHNLYLKNLADTTSRQLSRDGALNYSFSLTP DGSKLAFURRQDNFLKDLNTGLETPVYSGLERQEDFGPHG DGKYLSFTSSRNG WDANTETGEEHRLTGSQUWLMDRRGGE DSSVVLYGKNHNYYWMDKVNFKENQWTTDGEENYGYTWGG DANUVAFDHRNDUWUVNDSTGEEKRLTNNAMDEPGSAGVA
DGSQ $\square$ FIDSDRNNYVMNDGSNQ $\square R \square T N N S E D R \square P S W S$ GGNYVLYCYANNDY $\square$ TNGTPDST $\square Q \square T Y S G S P V I F N G V T$
DGKWEAYTEEYNVVVHEKPYSVKRRDTQDGT
RSNRLYALYRNRIFWTSDATSNDDQFPSEPEQDFFCTGLD DSTKMAFTRDNNLWVVDDATKDETQLTFDGSD VILNGYS NGEFGVFAKGSNLWVMDDSTVVEHRLTTDGIDRGGYGYGN NGQQVGYVREHDVYRLDLATNTERRVTQGGTPEKTH GLAA QNQATAFVYENDTYYKPKVQGEVCQRTKTTGRAGIVYNGTP SGKYVVFGHNHDLFLYELLSGETTRVTVNGNSNVFNGKP DGRWLAFVSDGALWLRDMG DGRHVAYVSKGALRVVS ASGEEDRTLAEPDDAHVTYGLA QLALLQQVRDRKEDKDANEKQQKLDAPNRPKEDYIEDKLV DGRHAYVSKGAERVVGAGGEEDRADAEPEDAQVSYGLA

DSAFTMDGDQYNDYVRNNDTGKDRQDTDGKAYASYCHRS DMGSRSTTRDSNLYVRNNKTGEKRQLTFDGKEGASYCFTT KNPQREWLKEQQLALLQ VREREADKEAAKKQQKADSPA DGKFR\|VSRNYNLWKAEVATGKETPRTADGSYDARYGINY DGKSTAFVRDGELYTWNTDSGLIEQKTHFGEPNRDSKDEW NPNFISFINNSSDLWHENIHTMEEQRLTYCHKDDPCSAGUA
 DSLFTMLGDKYNLHVRNNRTGQURQLTFDGKEGASYCFTS DPSWMAFVHSNDLWI GNVETGEERRLTFVHKEDAHSAGVA DGRALAYVADRDLHVRDLATGRTRRLTRARAASDSNGLA
 DGTRMAAVRDDDLYVVDLAGGATTRLTQGGSPDFTHGLAE NLELWLGVQEREDKKEKRKAYREATKTPEKFAFYTDKKRLD EPRPGGFVHHNDIYYKPKVQGEVCRITQTGSTGVVFNGVP
DPSFFSFINSNDLWVANVETGEERRLTFCQKDDPKSAGVA DPSFFSFINSNDLWVANGETGEERRLTFCQKDDPKSAGVA NPNLLSFLDHGDIWVVNTLGGSEMRLTFVSREEALSAGVP
DDNLLNLLQVREREEKKEAGKAYRDATAEKERFSYYLGNR DDNLNLLQVVREREEKKEAGKAYRDATAEKERFSYYLGNR DPKEDKISEKDEWLQNENDELLQVVRERKEEKENSKAY SGKQAAYLQNGDLWLADLSSKQNRQLTERGDAPLSSLPKG
 DPSTVTF DGRHLAYVAKGVLRVTGAEGDGDRALAEPEDGETTYGLAA DGKQLAYGKRSRLFVMDLATGEERMIFDALDQDMQ
DGSAIAFVHNNDIYYKPKVEKSVCRITNNGHPQRMFNGVP DGKYAATASNDNTRLWDADTGKQDFVLNHGDWVNNVVFSP DGKSLAFVKREDNYIKDLKSGDETQIFTGLDRDLQEANGA DGKKLAFIVRDGFYLLDLTSGKGEQIYNQLDRDMQ


## UniRef90 K8ZDS6

UniRef90-F9Z5H7 UniRef90-19PNA4 UniRef90-UPIOOO4089473 UniRef90_V4PFK6 UniRef90-A3HTV3
UniRef90 E2LPO UniRef90 O9977E9
UniRef90-H9.9918
UniRef90_UPIOOO4232CE5
UniRef90-C3JC57
UniRee90-UPIO003045C1D UniRef90-E3FIW1
UniRef90_UPIO0047EE659 UniRef90-B4CZA3 UniRef90-F4Q0SO UniRef90-C3QW08 UniRef90-H1H6L2 UniRef90-UPI000478254A UniRet90 H8MYF3 UniRef90-J9KJX5 UniRef90_UPI0003A8345D UniRef90-H3F980 UniRef90-K9E3V8 UniRef90-H1 Y341 UniRef90-UPI00020F656A UniRef90_UPIO0037D051B UniRef90-F8ENM4 UniRef90_UPI000331696A UniRet90_A2TZK2 UniRef90-A7RPQ4 UniRef90-B7GE82 UniRef90-UPI0003B5D383 UniRef90-R5BF94 UniRef90-G8YDA8 UniRef90-W5X6S6 UniRef90-R5PCU3 UniRef90-E9GU52
UniRef90-R5BER2 UniRef90-R5B7L7 UniRef90-L7UM93 UniRef90-W5JJG7 UniRef90 - X J393 UniRef90-C4Y481 UniRef90-D5QIG2 UniRef90_UPI00036978D8 UniRef90-UPIO0040A56F6 UniRef90-UPI0003FAD461 UniRef90-R518H4 UniRef90-H2LL06 UniRef90-R7J360 UniRef90-D1W127 UniRef90-E6МТВ6 UniRef90_JoLHI4 UniRef90-V4PBR8 UniRef90-G2PJY5 UniRef90-B1H219 UniRef90-F6T4Y7 UniRef90-W0ADL1 UniRef90-G1WC06 UniRef90-A41HZ7
UniRef90-A7HD36
UniRef90-M7NB71 UniRef90-UPIOOO4799EE9 UniRef90-A0A023D4Z8 UniRef90-LOG2K1 UniRef90_UPIOOO3990691 UniRef90 B4IIEW1 UniReffo-J3SEA3 UniRef90-L1KRR8 UniRef90-UPIo002B45C2B UniRef90-K1KXL5 UniRef90-UPI000255B863 UniRef90-UPIO00426E70E UniRef90-H3B2E9 UniRef90-UPIO0047A8202 UniRef90_UPIo0036F8076 UniRef90_- 9 K1F8 UniRef90-A5DLE9 UniRef90-S4RMG4 UniRef90 UPIOOO37E5E50 UniRef90_K9VG83
UniRef9O-B7RTU UniRef90-N6US41 UniRef90-O468D0 UniRef90_V4H460 UniRef90-UPIO004726A14 UniRef90-E3MB75 UniRef90-AOAO1ORIW5
UniRef90_UPI0004423318

180
190
200 GDVKEEVPLAPV

NLIWF
DKKWS
RKO
RGDDNVEEEKKKDDRKWS
PMFADMVEPSMPVSVQWS PMFADMVEPSMPVSVQWSPDSKRFVLTRSDSRSVKDLWVI GWSDMDYERPAHFRVNWSPDSKKI QTQRVDLRGAKKMLGL

 VYSVHQREFGDEKGIFWSPNGSKVAFYRMDQSMVAPYPLV EKPQPPSDRKTRPQVTWSKDSKRFTVTRTDRRGMKELFLV KSIVHRQEFGQDPEKAWSPDNRFLVVWRNDGRGVHKDPIV QWAPDSQSFVISRAGKITTREVTLV KFVYSE EFSRYTGYWWRPVVDTNQYSTFYFEESEEEVRD
 SVHRNEFGUDGGLFPSPDGRYFAFYRNDQSDVESYPIV

PEGTWSPQGRFLAVWRDDMQGMHRLPLV
RNGQDT DFESNSAMWFS
WKKVNKIYILRQDNRNSDEMAV
DWLYEEDVIAKSTAHWWSPNGKFLSYUKFDDSEVNKVWIK
 DGSKDAFVS

RNEFGGSRWVIPS DWDYEEEVVGDDKLFWWS
GAANPNEKRVRANVTWSKDSKRLYFATRANDSMVSKYHLD DWTYSEGGTRWRNQLMWSNDGGOWLFVCKRKPVEKRYVYYV SWVYYEEVLGHYRAFWWSPDSRKVGYYRFDNAEVPVFPIV YSGDTEADSTKRHYPVWS EFTAQEEM GRYTGYWWS
 DWTYENELNGRSSGLAFSPDGLFLAFDTENDSEVNEYKYT DYVYEEEVDAGDNMVWWCPDSSNFVFATGNDTKVEEYH

 YEPVEDDTDPTTSTAKWFKNSKKIFALDRDNREVGKDFW MYEEEFDTSNSLAWSPDDNVLCYMRYDESAVPMYSLP AKDTLLGSNDTGNW YGHRFVCFVQDDSQVADLY NKDTIREGNAAGSWHN RPKE YIGGKSVDNIVLSPDERYISY RMATRPKNAKVA

 SYIVQE EFDRYTGYWWQPN

ETWAVQGLIYPNMAWL AKDTLRAGNAMGNW TFVLQDTEFDRYTGYWWCPR
 AYVTQE EFDRFTGYWWSMQMYRILYEVVDERAVEEFQMG QMANDQLSPSEKFATFNITTRVDNKRTNVDYTDASGYTTN RESTAEDEFEFYGNLQVSPDAKYAGFSLIDYVDESAYTEN TEVLQE EFDRYTGYWWCPDGSKHLRIIYEENDESEVEDI DYLDERQLQSP QLSPDGR FITYRLSKSASNAKTAQ SYVMQE EFNRYHGYWWQPKQHKEDYEEVDESEVKDFNFP DWVYEEEVTGSDRLVWWAPNGEKLDYYVKNPSQVGATYEP TFVVQEEEDRYTGYWCCPGDSKTLQILYEEVDESEVEVI CLRTFTGHENSVCSVAFAPDGEWLVSGSFDNRHTGECLRT D WLYETEI LKTSHAMWFS
DGKYVATASNDNTARLWDADTGKQLFVLNHNGSVNNAVFS QGNTPAFAYTPDGKVFWSKVDGATKQAQVIPTRVVTEKED DWVYEEELFGRKDALWWSPKGDRLAYASYDNHDTKNVTLR


UniRef90_K8ZDS6 UniRef90-F9Z5H7 UniRef90-I9PNA4 UniRef90-UPI0004089473 UniRef90_V4PFK6 UniRef90-A3HTV3 UniRef90-E2LP03 UniRef90-Q9P7E9 UniRef90_H9J918 UniRef90_UPIO004232CE5 UniRef90_C3JC57
UniRef90_E3FIW1
UniRef90_UPIO0047EE659
UniRef90-B4CZA3
UniRef90-F4Q0SO
UniRef90-C3QW08
UniRef90-H1H6L2
UniRef90_UPIO00478254A
UniRef90-H8MYF3
UniRef90-J9KJX5
UniRef90_UPI0003A8345D
UniRef90-H3F980
UniRef90-K9E3V8
UniRef90-H1Y341
UniRef90_UPI00020F656A
UniRef90_UPIO0037D051B
UniRef90-F8ENM4
UniRef90-UPIO00331696A
UniRef90-A2TZK2
UniRef90-A7RPQ4
UniRef90-B7GE82
UniRef90_UPI0003B5D383
UniRef90-R5BF94
UniRef90_G8YDA8
UniRef90-W5X6S6
UniRef90-R5PCU3
UniRef90-E9GU52
UniRef90 R5BER2
UniRef90-R5BER2
UniRef90-L7UM93
UniRef90-W5JJG7
UniRef90- X1J394
UniRef90_W8B7E2
UniRef90_C4Y481
UniRef90_D5QIG2
UniRef90_UPI00036978D8
UniRef90_UPIO0040A56F6
UniRef90_UPIO003FAD461
UniRef90-R5I8H4
UniRef90-H2LL06
UniRef90-R7J360
UniRef90-D1W127
UniRef90-E6MTB6
UniRef90-JOLHI4
UniRef90-V4PBR8
UniRef90 Q20C81
UniRef90-Q20C81
UniRef90_G2PJY5
UniRef90_B1H219
UniRef90-F6T4Y7
UniRef90-WOADL1
UniRef90_G1WC06
UniRef90-A4IHZ7
UniRef90-A7HD36
UniRef90-M7NB71
UniRef90_UPI0004799EE9
UniRef90-A0A023D4Z8
UniRef90-LOG2K1
UniRef90-UPIO003990691
UniRef90-B4IEW1
UniRef90-B4IEW1
UniRef90-B3SEA3
UniRef90_UPIO002B45C2B
UniRef90-K1KXL5
UniRef90_UPI000255B863
UniRef90_UPIO00426E70E
UniRef90-H3B2E9
UniRef90-UPIO0047A8202
UniRef90_J9K1F8
UniRef90_A5DLE9
UniRef90-S4RMG4
UniRef90_UPI00037E5E50
UniRef90-K9VG83
UniRef90-B7RTUY
UniRef90-Q468D0
UniRef90_V4H460
UniRef90_UPIO004726A14
UniRef90-E3MB75
UniRef90_A0A010RIW5
UniRef90_UPI0004423318
 NY LIKGRPLAYNTQAVLAGDS IVLYDEDSLFDVETKTQKK $\square$ E S A P K T QL QP LL L WR N Y A K P G DV L P V S V P V L F D V E H N T K D P R P T L E TY K Y A M P GE K E Q P K S E L L HY S F E S E K M N








 QWS
QWS P Q EARVAEVKNDKYPMAGMANEQVSVVIYDVYTGKKV
 TYGDPYDQYSRMFSYRYPKADDPNPQVELFVQLLNATNDE KYRSKQYPDY I SIP Y PKAGVVD QPKVKLY LWN RETAQRV ESSPTDQLQPKLHKQEYAKPGDELPFKVPCIYEVET NS LT SPRPYVNTYPYE LDPGDK HVPSPALEERKTDSYRYPRTGSKNPKDADKDFQTDNQGKM


 S SPEGALQGSSVDSYRYPKAGSSNAEVVEFSDEESGSVSGN
HQEVEDGHAYE DHRYPFAGKENPTVRLAFVP I DSVSVA NSVTEHQPSWSPDGSK DAFVSNRDGNYEVYVMNSDGSNQT
 NSLTE ESSPADQEQPLLHKQEYAKPGDEDPQHYPTIIDVATGNRV
 $N S V S D K R P K L E T Y K Y Q M P G E P G P K G Y L Y L F T M N G K S Q A$ A I A NTTTPEASARRDSYPRAGTANAQVRLGLISANGGKTT

 PEEDAMSYDQPSAQKSSEVNQYPI RTSIKYPKP Y D HDGQVHHDHVTRAFPGDPDTGFAVGVVDVAGGAPR W $\square$ A DPAHPDRRPAEVAYPAAGTPNAVVGLHVMGLDGKRTE QSS SEF FVYDTQRDSTYKVLMNEVEGI YDQPAYLDQQEAK
 SPALEERKADAYRYPRTGSTGSKNPKASLKLAEI RTDHQG
 DVLDGDRPRDKTKHM PLDNEKNVRQYRLYWYNADTGEG VPDFVTSSGYTED DNTRTKVGDAQATYESFVYDDSRDTTY

 $H V P S P A L E E R K T D A Y R Y P R T G S K N P K V$ FRVADDRVVIDPVRPQVAVAPDSFATRMPRFATVS DVLHGDRPRLKTKHM PPLPDEKNVRQYKLYWFNADTGEG
 TYVTESS YAEMLKAYARAGTANAAVRGGKQATVRMGIVDTKGGRPV PHFVTESGYTENQNTRTKVGDEPNRKVYPVVLDNLEGLDY
$Y \| A N P A T P Q T P P Q M F R Y P R A G T N N A R L R L G L V A A K G G E T M$

 H VPS P
WI S P A L Y P A WHSDPAQPEREPQRVAYPAAGTANADVRLFVTDDSGTRTE SHS EVVFTNFVENYRYPKAGSTNAKSFCLDCSLNQFDAG

 DYLDAETNPNEV RRSYPGDPNEIRRVGLLDVASGNIR VPNYVTESGYTEEDAARTKVGAPAAVQEFFVYDRVKDTVR SSNSAGSGEDEQYRFPRAGTANSKSNIKVVEFQLDGECQU HVPA A A LDQQRKA DCFRYPRAGSKNP KIDCEFTVVDKE GRDT D WIA DPA HPDREP EAVVRYPAAGTPNADVRLYVVDLDGERTE
 WY N SK N LI Y P E V R S F R Y P R P D G D N T A R L W N A D T G K Q I




## UniRef90 K8ZDS6

UniRef90-F9Z5H7 UniRef90-I9PNA4 UniRef90-UPIOOO4089473 UniRe990_V4PFK6 UniRef90-A3HTV3
UniRef90 E2LPO UniRef90-Q9P7E9 UniRef90-H9.9918
UniRef90_UPIO004232CE5 UniRef90-C3JC57
UniRef90-E3FIW1
UniRef90-UPIOO047EE659
UniRef90_B4CZA3
UniRef90-F4Q0SO
UniRef90-C3QW08
UniRef90-H1H6L2
UniRef90_UPIO00478254A
UniRef90-H8MYF3
UniRef90-J9KJX5
UniRef90'UPI0003A8345D
UniRef90-H3F980
UniRef90-K9E3V8
UniRefo -H1Y341
UniRef90-H1Y341
UniRef90_UPIO0020F656A
UniRef90-UPI00037D051B
UniRef90-F8ENM4
UniRef90_UPIO00331696A
UniRef90-A2TZK2
UniRef90-A7RPQ4
UniRef90-B7GE82
UniRef90-UPI0003B5D383
UniRef90-R5BF94
UniRef90-G8YDA8
UniRef90-W5X6S6
UniRef90-R5PCU3
UniRef90-E9GU52
UniRef90-R5BER2
UniRef90-R5BER2
UniRef90 R5B717
UniRef90-L7UM93
UniRef90_W5JJG7
UniRef90 - X J3934
UniRet90_W8B7E2
UniRef90-C4Y481
UniRef90 D50IG2
UniRef90 UPIOO036978D8
UniRef90-UPIO0040A56F6
UniRef90_UPIO003FAD461
UniRef90-R518H4
UniRef90 H2LLO6
UniRef90-R7J360
UniRef90-D1W127
UniRef90_E6MTB6
UniRef90_JOLHI4
UniRef90-V4PBR8
UniRef90-Q20C81
UniRef90-G2PJY5
UniRef90-B1H219
UniRef90-F6T4Y7
UniRef90-WOADL1
UniRef90-G1WC06
UniRef90-A4IHZ7
UniRef90 A7HD36
UniRet90-M7NB71
UniRef90-UPI0004799EE9
UniRef90-A0A023D4Z8
UniRef90_LOG2K1
UniRef90-UPIO003990691
UniRef90-B4IEW1
UniRef90-B3SEA3
UniRef90-L1KRR8
UniRef90-UPIO002B45C2B
UniRef90-K1KXL5
UniRef90_UPI000255B863
UniRef90-UPI000426E70E
UniRef90-H3B2E9
UniRef90-UP100047A8202
UniRef90_UPIo0036F8076
UniRef90_- 9 K 1 F 8
UniRef90-A5DLE9
UniRef90 S4RMG4
UniRef90-UPI00037E5E50
UniRef90-KgVG83
UniRef90-B7RTU7
UniRef90 NoUS41
UniRef90-V4H460
UniRef90_UPIO004726A14
UniRef90-E3MB75
UniRef90-A0A010RIW5
UniRef90_UPIO004423318

A GARR R 250
260
260 260 270
270
280 K $\square \mathrm{DK}$ WQDQLTRVLHSDTKNNK HRKQPDDTRGYENQFSLSLTGWREDSRGFTFEFNR EDDQTDSLWSTTPAANTRDDDFRPATWLGDEDEFYFADTS LAGKIAPLVLNVPTNPMLWPGDPNMGWDKDHVLYQWTRRG A LT WPERUTAESESIALPHFUGMYFNWDRDSEHIFGTY LIH DSGESIIVVDSSFPLSTQHRYDTDVAWAGNEKLMFVE PR WEVKPPST LDGMEYYF DSAQWVGKENSHVGVVWMNRA KRATIVTLDVPSESLLYPADPDLGWSGGKARIQWTERGYR YMQTGGDPEHYDTIAWDPDNRSLYEVNRG R YMQ

PPMEEETYDWFA GWRPGSGEALILHDS TI QTG EPKDQYDTMVSWEPTGKHDFIILNRE PIDNALFPTPFTDRLEVDGR WAPRSDEFFFDYNQ TSSQVRYRYPMENQYQWAEYYVRGGWMPNGHSVYVELLDR
 Y Y LQ Q $\mathrm{L}_{\mathrm{G}}^{\mathrm{G}} \mathrm{APTDRFFTNDA}$ PAPGDTS KPVKQYTNERYDWFSGWRPDGSEALVLQ L S S ERYDWFSGWTPDSKSLVIDEVE $V V D$ DKRKVTDFDDERWQDQDAEVRYVTDKGDKDFFERYK VISPPEELNNQSYYDFSVSWLRATDEREEKLLTVWANRR
 VCAQDKELVQPFSKFPAAEYDARAGWTRDGKYAWMFLDRP TLTKGK HRTRON KNSSKWSPDGTQUAFVSNRT K IDSQEVQPFSTDFPRVEY臬ARAGWTQDGKWAMFLDRPQ PLDTVRQQSDNVFRAPRKQSQRDDEFTPSKKGKLYFSVIS VTEYNLLVPFDETFPTMEYGVRAGWVSTGDSAWVQLLSRN RLTNNPAYEFNPSYLSTPTGTLTLTTPNGGENWKATTNWT ELQVT KLDFKASSVQSDS LYEA KVPVDK
EADRNAT
QLA A D QL YKDQVLMNVHWQDNTSDSFRFVRRD WADFDQ DNQYDLNWFQWTPDSRAVTMEYNKR FKDQEVSLQGARRTAK WVRWDAA QRQWMLVQVEWLDDAIGFVTAWMTRN SQSSQKQ■GVPAHDGAADSYVGGLRWLSSTELSVTYASRN FPTQDK L PADLTNGSYIGALTWATPDDLSVTDTNRG GTPDPEVSLTMFNLSSRKQTVGDGQGVDTGDPILYDVNW WMA ${ }^{\circ} \mathrm{D}$

NAQDPVWNFGLSPDGRSLFVNQSD VVWDRAR FPY LARVHWSSHGAPLLLVQARD ASASTSAADSKTKKPAPREAVIYGPFWSNNGKHAVVVARS VVWDRAR
HI KLIEKWHDQYVEVLYP
RIVSTQDVAPFTSLFPGTEYIARVGWTNDGKYGWAVLLDR DLPLP KLLPIEKFNDQYVELNDRHNGRDIYFTRRSRGVDTL KVLPIDKYKDQEVKLNYENYDGNLYFTRRNRGVDTL ALQVGG $\square E G \square N D Q P A Y \Pi K D R M F G P I W S D D G K H A V M V A R A A$ DLNVPA VPLLWPGNPALWWENGQVIYEWQARG NEFLTSMPVPSALNTETDYMVAVSWLDDNNVLSVWMNRID PEYTKDYPDKTYENEDRDGY| NGPAWNTDGSKAMLDDQA E $\| Q N R K$ LSEP

RLLPDEKFKDQEVKDNYEDCGENDYFTRRNRGVDTL LDVLDKELRQPFEDMFGGTEYDARGWTPDGKYAWILDDRL WI RWDRR YLQTEK $\square$ PG LDDRQPDFVKDYPHGPWFAPGGSKAALIEVRS VPEYTKDYPDKPYKNENRDGYDSGPDWNNDGKYAVLDINT WVDWD P DYVV DYPERE WEKK N R SVVSTS GAYFSRDGQA IV NIR S $R \square A D V V D V Q P F E \| L F E G V E Y I A R A G W T P E G K Y I W I L L D R S$
 KIMHARDMHPFATMFPNVEYIARAGWTRDGKYAWMFLDRP VVWDRAR YP Y L A HVVHWSAA GAP LILVV Q A SIJTHYELCVDFYEKFSWVEY VVRCGWMPN GEHIWQVLNRA $P$ D Y VK D YP E K K WE A K V R EVIPPSAVNFSPD GKYA VV NIR S Y LDLP E PS ANQI ID FNWSPS GSLLIIDVAS D T P DYTEDYPDREWKEEPRKVIPSQVKFSENGEKAVVNDRS $N V V D K E L V Q P F E V L F Q G T E Y I T R V G W T S E G K Y W A I L L D R S$

 VNILKNMELQYP LAHMFPWMEYRVGWTPND DLI WL QVLDRR
 $V \vee W D R E R Y$ E $V$ L A R V H WS E QSAPLLLVQSRD
 Y DKHSDK DAKRLTSDKNEGFD Y SPVWWSDSKS LYFMRWND F PFELKP TNRVEPDSYDTSDQFH GENNVNVIWLNRA TASNDNTAGLWDADTGKQDFVLNHGSWVNN VVFS Y VK D DE S GKVVR RVTK QNDHFEFYPSYSRDGKY VVYT TVDD K S L P D GK $\square$ K R LT K L K D N $\quad$ S E LDP K WS R D GKY I V Y S T WN D QLDVQQLKDSL S Y $\quad$ Y Y L L A V K WVD DNGTD RLVVSVWTNRY VTDAGL
DVV DK

## UniRef90 K8ZDS6 UniRef90-F9Z5H7 UniRef90-I9PNA4 UniRef90-UPI0004089473 UniRef90_V4PFK6 UniRef90-A3HTV3

 UniRef90-E2LPO3 UniRef90_Q9P7E9 UniRef90_H9J918 UniRef90_UPI0004232CE5 UniRef90_C3JC57UniRef90_E3FIW1
UniRef90_UPIO0047EE659
UniRef90-B4CZA3
UniRef90-F4QOSO
UniRef90_C3QW08
UniRef90-H1H6L2
UniRef90_UPI000478254A
UniRef90-H8MYF3
UniRef90-J9KJX5
UniRef90_UPI0003A8345D
UniRef90-H3F980
UniRef90-K9E3V8
UniRef90-H1Y341
UniRef90_UPI00020F656A
UniRef90_UPIO0037D051B
UniRef90-F8ENM4
UniRef90-UPIO00331696A
UniRef90_A2TZK2
UniRef90-A7RPQ4
UniRef90_B7GE82
UniRef90_UPIO003B5D383
UniRef90_R5BF94
UniRef90_G8YDA8
UniRef90 W5X6S6
UniRef90-R5PCU3
UniRef90-E9GU52
UniRef90-R5BER2
UniRef90-R5B7L7
UniRef90_L7UM93
UniRef90-W5JJG7
UniRef90-X1J394
UniRef90_C4Y481
UniRef90_D5QIG2
UniRef90_UPIO0036978D8
UniRef90-UPIO0040A56F6
UniRef90_UPIO003FAD461
UniRef90-R518H4
UniRef90-H2LL06
UniRef90-R7J360
UniRef90-D1W127
UniRef90-E6MTB6
UniRef90_JOLHI4
UniRef90-V4PBR8
UniRef90 Q20C81
UniRef90-G2PJY5
UniRef90-B1H219
UniRef90-F6T4Y7
UniRef90-W0ADL1
UniRef90_G1WC06
UniRef90'A4IHZ7
UniRef90-A7HD36
UniRef90-M7NB71
UniRef90_UPIO004799EE9
UniRef90_A0A023D4Z8
UniRef90-LOG2K1
UniRef90_UPIO003990691
UniRef90-B4IEW1
UniRef90-J3SEA3
UniRef90_UPIO002B45C2B
UniRef90-K1KXL5
UniRef90-UPI000255B863
UniRef90_UPI000426E70E
UniRef90-H3B2E9
UniRef90-UPIO0047A8202
UniRef90-J9K1F8
UniRef90_A5DLE9
UniRef90_S4RMG4
UniRef90_UPIO0037E5E50
UniRef90-K9VG83
UniRef90-B7RTU7
UniRef9- N6US41
UniRef90-Q468D0
UniRef90-V4H460
UniRef90_UPIO004726A14
UniRef90-E3MB75
UniRef90_A0A010RIW5
UniRef90_UPI0004423318


RGNYERVTSLID DSSRKTTDENTEVSEHPLALTSSLHLKY QNLTVYSSCYA PNWTCTES HSEKATDEPWLEVHQQ Q LVVYQADPQTGKSTVTAREAVKP』VTVT
QNH NEVNRYDAQSGARLATLFVE DDPKY DEPQ

 RGHQLYRIIGVKAATGTTRAVVEEKSATFDD YTK

 RSQAETNLREYNVATGRLVRTLDKETHPKYDEPSTPDRFLD RDGKRLDLVAVDPLTGKRRRVLREERKETFVAALFSVGGW QNESHLVHYHISNN KAEVMEMMEFRQKNGWLNFQQS




 RDRKKYDI NVADLETGEYKTLI MQVLAEDTSEERFNTY Y






 QSQA HVLLCRAPEFNGEAGLLEPDTRSVLQDPAGAGGGGS | $L Q N T N Q V M L G A D A R T G R T R T V L T E R D K A W V D$ |
| :--- |
| $Q T K A A T V I C R A P E F N C Q T V H T E V T V N D G W R N S A N L K R N Q Q$ | Q KA A LL CKRAPERNCQTVHTEVTVNDGWRNSANLKRNQQ LT DKHHA DI YDVPT GRRQVFYRFADPAQVRPDWQVAWAP QQSQLCLLAVDPETGATRTV QDNKDRWILKKLDPATNKDTLLDRQRDEAWINGGVGUGYG



 QTEV R RLLAADPSSGATRRLL


 QNRSALLRRIPSSAFCTVNSSNHVNEKDADLDDEKSDYWFN
 T DNKDRWI GL QKRLQQVLIVIDDDMERQKLVTPGIIYEETTDDWDNDHDI AVERMLVVVSPSQVKGDWRGVRESRMYTSFGSSWH

DNKDRWI MRLDLNASPAETLKLTVLDRQHDDAWDGGPGD


 QSLTSIRRVNAN
HNIFVI ATCS NQQAYNCSEFHVEKEHEHDGWTEPVFH


 GHQRLRVI G N NSDGFRAAVEESSDTEDD

## UniRef90 K8ZDS6

 UniRef90＿－F9Z5H7 UniRef90＿19PNA4 UniRef90－UPIOOO4089473 UniRef90＿V4PFK6 UniRef90－A3HTV3 UniRef90－E2LP03 UniRef90－Q9P7E9 UniRef90－H9．9918 UniRef90＿UPIO004232CE5 UniRef90－C3JC57UniRef90-E3FIW1
UniRef90_UPIO0047EE659
UniRef90_B4CZA3
UniRet90-F4Q0S0
UniRef90-C3QW08
UniRef90-H1H6L2
UniRef90-UPIOOO478254A
UniRef90-H8MYF3
UniRef90-J9kJX5
UniRef90-UPI0003A8345D
UniRef90-H3F980
UniRef90-K9E3V8
UniRef90-H1 Y341
UniRef90_UPIO0020F656A
UniRef90-UPIoo037D051B
UniRef90-F8ENM4
UniRef90_UPI000331696A
UniRef90-A2TZK2
UniRef90-A7RPQ4
UniRef90-B7GE82
UniRef90_UPI0003B5D383
UniRef90-R5BF94
UniRef90-G8YDA8
UniRef90-W5X6S6
UniRef90-R5PCU3
UniRef90-E9GU52
UniRef90-R5BER2
UniRef90-R5B7L7
UniRef90-L7UM93
UniRef90-W5JJG7
UniRef90-X1J394
UniRef90_W8B7E2
UniRef90_C4Y481
UniRef90 D50IG2
UniRef90'UPIO0036978D8
UniRef90-UPIO0040A56F6
UniRef90-UPIOOO3FAD461
UniRef90-R518H4
UniRef90- H2LLO6
UniRef90-R7J360
UniRef90-D1W127
UniRef90-E6MTB6
UniRef90_JOLHI4
UniRef90-V4PBR8
UniRef90
O20C81
UniRef90-Q20C81
UniRef90-B1H219
UniRef90-F6T4Y7
UniRet90 WOADL1
UniRef90-G1WC06
UniRef90-A4IHZ7
UniRef90 A7HD36
UniRef90-M7NB71
UniRef90_UPI0004799EE9
UniRef90-A0A023D4Z8
UniRef90_LOG2K1
UniRef90-UPIOOO3990691
UniRef90-B4IEW1
UniRef90-BJSEA3
UniRef90-L1KRR8
UniRef90-UPIO002B45C2B
UniRef90-K1KXL5
UniRef90_UPIO00255B863
UniRef90-UPI000426E70E
UniRef90-H3B2E9
UniRef90 UP100047A8202
UniRef90_UPI00036F8076
UniRef90_- 9 K 1 F 8
UniRef90-A5DLE9
UniRef90 S4RMG4
UniRef90-UPI00037E5E50
UniRef90-K9VG83
UniRef90-B7RTU7
UniRef90-N6US41
UniRef90-Q468D0
UniRef90-V4H460
UniRef90_UPIO004726A14
UniRef90-E3MB75
UniRef90-A0A010RIW5
UniRef90_UPI0004423318
 LASDHFDNNYNDII WWSERSGYGHFYHYDREGNLKNAITS NNYRYDLNDGME LWMSERDGWRHLYRIDKEGEVKNQUTR SSSTRPTPELSGDLVWSERDGWAHLYUYGKDGSFKRQLTS NNNUFRRLDNGSFILGTEKSGWNQLYLMNWKGDLINRITD
LS FESLGNपKERYVRQYF乌SNKKRTA $\overline{P V Y S E D G S A F L L L A A V Q E G Q Y Y T H I K H V D V D R Q R I A V L S H}$ SSFLRPAPELGGELDVSERSGWAQLYFIRPDDPDGIPLTR SPMIFLPTNDGRYL WLSRKDGYNHFYLGSTRKNSLQQITR VAAPRIDEETDEV WWSERSGWGHLYLYDRDGKLKNPITG WARQVTPPDDTGFLWMSERDGWRHVYLYOFAGKLVRQLTR KTWRQWLDKTGELLWMSERDGWCRLYLYDVTGTQKALVTP RDQLHFLKKSNALVWGSEQSGYNHLYLVSWEGGDKRQLTS VFVLNDGKDELYRSERTGWGHYYHYDGDGNLKNVMTS QD
 MRNIVFLNEGNDILYRSERTGWAHYYHYDGNGNLKNTITS DFENLPSSKNGFFAILPVPYSDGNTYNH RDN FYPFPVVNQGKDIIWWSDRSGWGQYYHYDSTGKLLINAITA GDAVAYRRFTGGYLLSPEYSLEPGLYGADADGDWQRRVVK PEWSPDGKQLAYVRSTSSENYFM
FPQRDGGDRLCFLRTNECKTGFCHDYKFKCPDEEEVADTS SRPLVLFNNETEMLHWAERDGWAHFYWYDADGNLKNQVTE EPPAPDPPGAFSFLLASERSGFQHLYLYTYCAVLLRTISA STTC
DPLYFTKDSYEFTYRTDNRDGYRSLYपCDT四GKKRLTKC KPLPVDSDHKASYYDRNVFNNQTHLALFPEANSSNPRILT YVKPGGDMI WWSERSGWGHYYLYSNDGKLKRTLTS FVNNGKQLLWTSERDNWNHLYIVDHATATIRQITK YPSPSGDSGFILALSNGQAEDQRLVYHKSPWHKFVSVDL DGMLFGRD GLYMVRSFETGWQQIYYLSYDGSVLKRLTD YRAPFLIGGGKQLLHWSERNGWANI YLYNSDGTLVRNLTE TFPHWLSDGSGFLWRTERNGSAELELRDTTGKLVRSLVP TVPKHLYMLKRLDVRDGSHGYYRHLVLVLLGTKRTITLTM VNDLQWLDDGGRFTWVSERDGWRHVYHVLRSGKKLTLLTP FGGWDEKASPDALVSRNDKTGY DDKVVSDNKVQLAFFDSA RGQGLVVLTNRYGYNQLYHIPTIGARPRADTQ
 GVPAWAPD GRLVRDADEGGARVLAVGDRLLTGAQLQIQ FYPFTQTDEFTFI WVNECKTGFSHLYKITSLLQPGFHCWR TYQNIAYQADGMVIMSARNGDRMQLYKYSYAGALISRLVS EMNYRLVNHGQQ：I WWSDRTGRGNYYRYDKNGKLLHQUTR TVGDGFMPDNEQVWFQSEESGYSHLYTVNLNNGSKKVLTS STAMVSAPQLKGTLVISERSGWAQLYYVAAGSDPNQRLTQ GDLGWMPDDKK WFMSEKTGYSHLYTMDUNNKKSKALTS DTDYFFKDNEVRFIWASEHTGHRHLYLISYCVCTVTPLTC

पFFYRLLHQGRE【IWWSERTGRGNYYDYDGNGRDKGRTTQ LHFFQTRDDEMQFLFASECKTFRHLYRFRCHGKEEVAVTS ASDMGWLPNGRQVWFOSEASGYSHLYLLDVTGGPKKQLVS GAIGWMPDDKS IWFQSEKTGYSHLYVMEVTSKKAKALTS GALGPYALE DGRFLWAAQRGAHWQLELHEADGGLERVLTP GYPQTHEDEGKHVYFQSEETGYSHLYLYNVEKGTKTALTE RNQGHSRSNGGYL LKRGEHGHYRHVVF円SSLDRRPVPLTM FYPFAQPEGETFLRANECQTGFCHLYRVTALLQRKTYDWT $V$ SNALHFLSPYNIDNMEDNNSEYVIRRCQVLTEQPLTQGE GGTFGWLPDNKHIYFQSEETGYSHLYMLDVTNGQKKQLTK YEEMGWLPDNKHIYFQSEETGYSNLYQLNVETGKKTNLTP LHPQTQENEMQFIFASECKTGFRHLYKFQCPINKEEVALTS QGFGPSAGNMNFI WF
 GVPAWAPD GRLVRIADEGGARVLAMGDRALTGGTLQLR
PVFNENGTKALVRDPVKDGDNGHYMHVCETYKGRVRPLTH VYDVMFSPDGKYVATASGDNTAR LWDTDTGNPILIMN GKKILFKKVTGGYLLSGDWSMHPGTYLVDAKGGEAKRVVK GNKVVYRKAKGGYITPPEWSQNPGLYVLDLDKEQP
DENTVTSYENTLYFLLPHDDRYQQAALSTGNPRTPQFDQD
KINRRLIMDTDELIWASERDGFNHLYLFDQSGKLKSQMTV

## UniRef90 K8ZDS6 UniRef90-F9Z5H7 UniRef90 U9PNA4 UniRef90-UPIOOO4089473 UniRet90-V4PFK6

 UniRef90-A3HTV3UniRef90 E2LP03 UniRef90 Q9P7E9 UniRef90-H99918 UniRef90_UPIO004232CE5 UniRef90-C3JC57
UniRef90-E3FIW1
UniRef90_UPIO0047EE659
UniRet90-B4CZA3
UniRet90-F4QOSO
UniRef90-C3QW08
UniRef90-H1H6L2
UniRef90-UPIO00478254A
UniRef90-H8MYF3
UniRef90-J9kJX5
UniRef90-UPI0003A8345D
UniRef90-H3F980
UniRef90-K9E3V8
UniRefo -H1Y341
UniRef90-H1Y341
UniRef90-UPIO0020F656A
UniRef90-UPIOOO37D051B
UniRef90-F8ENM4
UniRef90_UPI000331696A
UniRef90-A2TZK2
UniRef90-A7RPQ4
UniRef90-B7GE82
UniRef90-UPI0003B5D383
UniRef90-R5BF94
UniRef90-G8YDA8
UniRef90-W5X6S6
UniRet90-R5PCU3
UniRef90-E9GU52
UniRef90-R5BER2
UniRef90-R5B7L7
UniRef90-L7UM93
UniRef90-W5JJG7
UniRef90- X1J394
UniRef90-C4Y481
UniRef90-D5QIG2
UniRef90-UPI00036978D8
UniRef90-UPIOOO40A56F6
UniRef90-UPIO003FAD461
UniRef90-R518H4
UniRef90-H2LLO6
UniRef90-R7J360
UniRef90-D1W127
UniRef90-E6MTB6
UniRef90-JOLHI4
UniRef90-V4PBR8
UniRef90
O20C81
UniRef90-G2PJY5
UniRef90-81H219
UniRef90-F6T4Y7
UniRef90-WOADL1
UniRef90_G1WC06
UniRef90-A4IHZ7
UniRef90 A7HD36
UniRet90-M7NB71
UniRef90_UPIO004799EE9
UniRef90-A0A023D4Z8
UniRef90_LOG2K1
UniRef90-UPIO003990691
UniRef90-B4IEW1
UniRefo- 3 SSEA3
UniRef90-L1KRR8
UniRef90-UPIO002B45C2B
UniRef90-K1KXL5
UniRef90_UPIO00255B863
UniRef90-UPI000426E70E
UniRef90-H3B2E9
UniRef90-UP100047A8202
UniRef90_J9K1F8
UniRef90_A5DLE9
UniRef90_S4RMG4
UniRef90_UPI00037E5E50
UniRef90-K9VG83
UniRef90-B7RTU7
UniRef90-Q468D0
UniRet90-V4H460
UniRef90_UPIO004726A14
UniRef90_E3MB75
UniRef90-A0A010RIW5
UniRef90_UPloo04423318


VNTSFLSDLYLINNTLYFTATSSGS
PFSRVYRLC GKVEVAETLAWDQENNLVYYLGSADRPGQRQVYVVRDPNR GDWEVDDIAHVDAADRTLDGRERDRNPYYRALYRVTVNG GEWRAGRVLEVDAKNRLI YFGGNAREPGENVYYTHLYRGR GAFPDHQVAGVAPKGDFLDASADSTAPYEHLLYRGSLKGG NDVVVKDVLGFDATNTKINYDGTTNNGLDRQLFQVDLKSG GQGVVRNVEKVDEEKREVWYLASGEDPYHQHLCRVNFDGT GDWVNVDSAWHDETRKLVYFVANKDTPGQNHLYVTSLDTJ GEWVTGYINSIDTGKRKVYGYGYGKDKKVNPFYYMLYEVD GAWEVKELMGDDEASGYIYFTSNKDYPLIGQDLYRVS


GEWYVREVLRVDEDNQQ YFSANGVQPGEDPYYYRDGFDG GNWTAGRLLNIDTLGRGIYFYEQNSNPNYAYLYKVGFDGK GEWEHGSKUWVNEETKLVYFQATKDTPGEHHLYVVSYESS

GE WEHGSKПWVNEETKLVYFQGTKDTP LEQHLYVVSYEAA GDYHVDSFEGLDEKSRTLYFTANGQDPYYGHTYKINLNGS GDWEDTKTVWVDEERRLIYFTGTKDTPLEHHLYVVSYDDN
GEWIVESTVGVDMDRDVVFFTGTYDSLERHLYKANGMDS

NADVAYVANDGKYVYYTSAEVSPVENHRFRKKLKDS DSAKWESPIEYDHSRKLLYFVATIRSSMDAHLMALDUS GPFRADR VDVDADKGTLFFREAGENPYYHHLYRVNLDGK
 GENWRVSLVDVEEGKAVKGFDGSTSKVLFVAERDSRVRSA PGAGFSSLAAYVEGEETVYFNGGTSTPESY乌WRVRKGQAP GQFEVTEELGYDERRRLVYFMAPYHKPGQRHLYK GEFDVDSVQSVDEKGGWLYYDASPDNPTQRYLYRFRLDGS SSQNYSKLLGPVYYNSPLAYDA EGGVVYGLFGTDFNHTFS GPWEDESFVADPVHGRLYFTANQTGYAQRQVYRVGM
 SVLDIGVSD LVVASAGETAAAPE DGETHVYRVN
GPWVAGPITNGDTLKRTVYFFEKNVDPYYYMLYKVNDDHP GEYEHGSKYWVDEAAQVVYFQGTRDTP TDYDITKYYGADAVGNHYFQAATPTPIDRSVLRRDAKGA GDLVAGRDEYVDTLKRRLIFMGYGDKQAYDPEYAYYYVAD GK FEVSGPQUSKDKKSWYFTANKVHPGEKHFYKMPLNGG
$G D W E V N V A D A P V L V G G I G R E P G V N P Y F R S L Y K V G L D G A ~$ GKFVVDSULHWDTHDVIFYTANTEEHPEQMHLYAIRAVTT GAFELYDAFLSKDKNSWYFTSNKTHPGDRQFYSMPLKGG GDWEHGAKVWVNEATQLVYFQGTKDTPREHHLYVTSYQNP

GDLVAGRDEY DDLKKRRLVF DGYGDRQAYDPEYAYYYVAD GEWEHGSTIRVDEVNKLVYFEGTKDTPDEHHLYVANYETP AAAGFVALAGYDGEADELVFTAAPDPTRTVVQRARRGGS GTFEVYEPRLSQDGKWWYFHSNQQHPGERHFYRMPVQGG GEFEVYDPQDSKDKKRWYFTANKNHPGDRQFYSMPLRGG GEYEVFSPMLSRDGKHWYLTTSA VHPGERHFYKMPVMGG GEWEHGSNVYVDEAKKLVYFQGTKDSPGEHHLYVVNYENP GRFEVTEVVGWDEPHEVVYFMAPEKRPGERHLYKINYVTS GEWEHGYKVWVNEETKLVYFQGTKDTPGEHHLYVVSYESP WDVDSEKD WLDERNDLVYFLUGKDTPLEKHLYCVSLTTP GNFEVEDPKWSNDGKFWYLSTS EEVHPGERHYYMMPLMGG TDPSYDVLSAPMNAANRLFYTGNGVNPYEQHVYRLDTSGG GDYEVFDPI ISKDEKNWYFTSSKTHPGERHFYKMP ПMGG GEWEHGSNIWVNEAEKLVYFQGTRDTPGEHHZYVVNYENP TDPSYDVLSSPIIAGDALFYAGNGVNPYEQHVYRLKMSDG GKFEVQQVQLSKDKKFFFL QTNEVHPGEQHYYRMAVTGG GNWECGKGLWVDGKYQVVYFMAVRESPGEKHLYAVSLKSP WEVTKDSPDVYNSDDNRVYFVATDRSSMDAHLMAVDLGGG AVLDVGAVDVLVSASAGEEAAAPET GEDHVYRVAERG
GHEDRVRSVAFSPDGEWLVSGSSDN
GAFETVQVLVWD
HNGSVNNVVFSRDGKY TATASDDK TA SGDNPHFGADPKRपYFSVASSETS REपKSVDपNGH
GAFDVTS TDG TNKETKTLYYHAAAPRPQQRS पFSFN TAGD GKWNVKEFVRFDEEARVVWFSACGVVPGQDPYYTH LLAR

## UniRef90_K8ZDS6 <br> UniRef90_F9Z5SH7 UniRef90-I9PNA4 UniRef90-UPIOOO4089473 UniRef90_V4PFK6

 UniRef90_A3HTV3UniRef90 E2LP03 UniRef90-Q9P7E9 UniRef90-H99918 UniRef90_UPIO004232CE5 UniRef90-C3JC57
UniRef90-UPI0003045C1D UniRef90-E3FIW1
UniRef90_UPIO0047EE659
UniRet90-B4CZA3
UniRet90-F4QOSO
UniRef90-C3QW08
UniRef90-H1H6L2
UniRef90_UPIO00478254A UniRet90 H8MYF3 UniRef90-J9KJX5 UniRef90-UPI0003A8345D UniRet90_H3F980 UniRef90-K9E3V8
UniRef90 $-H 1 Y 341$ UniRef90-UPI00020F656A UniRef90_UPIO0037D051B UniRef90-F8ENM4 UniRef90_UPIO00331696A UniRef90_A2TZK2 UniRef90-A7RPQ4 UniRef90-B7GE82 UniRef90_UPI0003B5D383 UniRef90-R5BF94
UniRef90-G8YDA8 UniRef90-W5X6S6 UniRef90-R5PCU3 UniRef90-E9GU52 UniRef90-R5BER2 UniRef90-R5B7L7 UniRef90 L7UM93 UniReffo-W5JJG7 UniRef90-XIJ394
UniRef90
W8B7E2 UniRef90-C4Y481
UniRef90-D50IG2 UniRef90-UPIO0036978D8 UniRef90-UPIO0040A56F6 UniRef90-UPIO003FAD461 UniRef90-R518H4 UniRef90-H2LLO6 UniRef90-R7J360 UniRef90-D1W127 UniRef90-E6MTB6 UniRef90_JOLHI4 UniRef90-Q20C81 UniRef90-G2PJY5 UniRef90-B1H219 UniRef90-F6T4Y7 UniRef90-G1WC06 UniRef90-A41HZ7
UniRef90-A7HD36
UniRef90-M7NB71 UniRef90-UPIOOO4799EE9 UniRef90-A0A023D4Z8 UniRef90_LOG2K1 UniRef90 UPIOOO3990691 UniRef90_B4IEW1
UniRef90 J3SEA3 UniRef90-L1KRR8 UniRee90-UPIO002B45C2B UniRef90-K1KXL5 UniRef90_UPI000255B863 UniRef90-UPI000426E70E UniRef90-H3B2E9 UniRef90-UP100047A8202 UniRef90-UPIO0036F8076 UniRef90-J9K1F8 UniRef90-A5DLE9 UniRef90-S4RMG4
 DDEK SKVT LTPEEATHEVIFSPSKRYIIDAYSRPDLPC TGFQDGTPE LNQNANHKVILSKDRSYFVDVYSRPDLPP GAGRNLTPEPLD GDFTHDVTVADDGKTFIDRMSSPTMPT FDGSELTL LTPENSFHDVSYSPGSDYFVDNYSTVAEPT
TKSLILSEDNDQDGSGDFGDKVSNDQNYLLVNYDGPEDPK EEPRCLTCELHYANCSFWRAIFSPGDTHYVLECRGPGPPGL NFVDLTPDE GVHRTSLNASKTAFIDTYSSPSTPR TDGSDLT NLTPGDANHRVWLNPSKGFVVDSYSRVDLAP AKKRSSGS KTDQLTTIS GFAQLTQGD G NVVRLTKEGFDHT GNHEVTFSP
 KTEQDTTL SGTHSVVLNKSKSLFLDQFNNLETPK

LKRPRVERTTEGNGTHYVWLSPDFSLAMDRFSNLDTPS
 KDLVCLTPEEGMH
K QMLLTTA
GE\|VRLTTPGF
DEREHLHGAE $\square$ T
NATHNVFTSKDRKYLVDNYSRTDLEP SHSCSMSQNFDMFISHYSNVSTPP

GE\|VRDTMPGF
GMRTLDPGNFTKRT STTEVQRLTEGGF

SHSCSMSQNFDMFTSHYSSVSTPP SMSDSNQYFVSNYSRVNTVP SHSVSMNENFTRFITVSSSVNETH

FGLNRPORDTPETGWHOSMSPDCSRFDDRYSSDNPG KRDNNLINVTDTSKDGYYDIQFSYSAKFLSLSYMGPFLPW GLALLDPGDAD FDGKNLTC LTPAKGNHSVKYSFDHKYLVDTYSMVDKAP AMTECLSCQDMADNCNFVDAKFEPNTDFYELQCLGPHDPS
 TRVTTGGPALEWGRV SKNGALIVVTSEGPTSMK
GKAERLTPQ SQSGTHRYR $\square S P D$
TQPTCLTCDNTPKNCLYNK凹YFSKDYSYYVQECLGPESPS SVSDEDASLKVLQENGKFMPIFSPDGQFVDDEYAGPSDPW TPELLTRTHGTHEVVFSPGFDHVADRFSNDITPP ELGVERVSEGVGVHTAVRS
EMVQLTS FT ELGVERVSEGVG

GAHEVELS ESLELLTSGNAHHASS VAVSRLTKPGF
$\qquad$ PDEKHLAI RYSYSNKPW ASRLTKGF SHVSONFDFFVSHYQRVDLIP TRVAV PGSADGSGTD LNGKHQQLGSTPGNGTATHEFSDNRQYAMYSFSDKDTAP E
EMTQLTSGT
GAELDFSPDHRFAIDSYSRMNLPT
 KWEQLT GE EVVRLLT MTSGYYTVTLSEDDAA NMVGRNDVVLSPNEQ VTTSLGPGUPT
 ERGYSHSCTMSPNFDVFVSQYSSVSCPP QFGYSHAVSMSKGCEQYVSVSSNIH

LNGKRQQT LTYGNGTHELQFSEDHRFATDSYSRMDMPT GEVTRDTDLGF PE T ITALGEDRPT信ARAVAAGKGGAVAVTWTTLTRAA KAEQLTRGE GRWDVTLSPDEKWMAQLYSTGNRPP KFQQLTQMT SRGGNEVVLSPDERKMAGLHSYTNKPT

 ELGVERVSREPGVHSAV RAGGVTVLVSAVPDKPG EWDERMTLLGY SHSVTLSKDCSYAVILSS STVTSGT KLEQLTSMT GNNDVVLSPNEKHMALLYSYSNKPW
K PEQ GQNTGYPSPDGQNLVVLHSNDTAPH KMEQLTSMT GKNEVKLSPDEKHLAITYSYMNSP GD\ILLT ERGYSHSCCVSQNFDMFISKYSNQETPP E E
G
G
D
G GRVRTT T MP
 HSGECLRVEFTGEGAGVHSAV RGVGAVTVLSSARPDAPG

GLWDDAATEVLNHNGPVYGVVFSRDEKY VATASGDNTAR EERSHFKGEYUFD YGUVSPDGNYVAFIEHFNTFVAPF
SKSNVNCLTCTDTNCTWAQAQTDEEMKKA VSCKGPVAPH VNFDGTGFKVLTDGDGTHHWTVSPGHRYFFDTWSRVDSPP

UniRef90_K8ZDS6 UniRef90-F9Z5H7
UniRef90-I9PNA4 UniRef90-UPI0004089473 UniRef90 V4PFK6 UniRef90-A3HTV3 UniRef90_E2LP03
UniRef90 Q9P7Es
UniRef90 ${ }^{-}$H9J918
UniRef90_UPIO004232CE5
UniRef90-C3JC57
UniRef90 UPI0003045C1D
UniRef90-E3FIW1
UniRef90_UPI00047EE659
UniRef90 B4CZA3
UniRef90 F4Q0S0
UniRef90-C3QW08
UniRef90-H1H6L2
UniRef90-UPI000478254A
UniRef90-H8MYF3
UniRef90-J9KJX5
UniRef90-UPI0003A8345D
UniRef90-H3F980
UniRef90-K9E3V8
UniRef90-H1Y341
UniRef90 UPI00020F656A UniRef90-UPI00037D051B
UniRef90-F8ENM4
UniRef90_UPI000331696A
UniRef90-A2TZK2
UniRef90-A7RPQ4
UniRef90-B7GE82
UniRef90 UPI0003B5D383
UniRef90-R5BF94
UniRef90-G8YDA8
UniRef90-W5X6S6
UniRef90 R5PCU3
UniRef90-E9GU52
UniRef90-R5BER2
UniRef90 R5B7L7
UniRef90-L7UM93
UniRef90-W5JJGG
UniRef90_X1J394
UniRef90 W8B7E2
UniRef90-C4Y481
UniRef90-D5QIG2
UniRef90 UPI00036978D8
UniRef90- UPI00040A56F6
UniRef90_UPI0003FAD461
UniRef90-R5I8H4
UniRef90 H2LL06
UniRef90-R7J360
UniRef90-D1W127
UniRef90_E6MTB6
UniRef90 JOLHI4
UniRef90_V4PBR8
UniRef90_Q20C8
UniRef90 G2PJY5
UniRef90-B1H219
UniRef90-F6T4Y7
UniRef90_W0ADL1
UniRef90 G1WC06
UniRef90-A41HZ7
UniRef90_A7HD36
UniRef90 M7NB71
UniRef90-UPI0004799EE9
UniRef90-A0A023D4Z8
UniRef90_L0G2K1
UniRef90 UPI0003990691
UniRef90-B4IEW1
UniRef90-J3SEA3
UniRef90 L1KRR8
UniRef90-UPI0002B45C2B
UniRef90-K1KXL5
UniRef90_UPI000255B863
UniRef90 UPI000426E70E
UniRef90- H3B2E9
UniRef90-UPI00047A8202
UniRef90_UPI00036F8076
UniRef90-J9K1F8
UniRef90_A5DLE9
UniRef90_S4RMG4
UniRef90 UPI00037E5E50
UniRef90-K9VG83
UniRef90-B7RTU7
UniRef90_N6US4
UniRef90 Q468D0
UniRef90-V4H460
UniRef90_UPI0004726A14
UniRef90 E3MB75
UniRef90-A0A010RIW5
UniRef90_UPI0004423318
$\square$ ME 460
LF SLHALDGTLLQVVE


RTLLRSADGRIVAEL
NSVVRDKTGKiVHEG
QF $\$ Y S $\square$ HEDKV
AGLHDARTHKLERILYDTRPYR
RTVVRDADGRIVIEL

LRDMVSTDGKTRFRLTDASALDEL
E!SILLNDKNK
TELRRSDSGAQVCELE HAEVQALL
TSEIYN
K 1 M L K D R R GK V DMEL
VTIVNADSKKEQQVLES
VEQLIS LK GKRVREL
VWDVVSTEGRP
VNIMKT NGDHDTA WETNKKLT TELKNV
RFTLKDNNGRVI

RTVVLDNKGHFVQQ!
CVHVYKLS GS

K SEVVRANGRKVMDLET AD $\square$ S Q $\square$ FAS
RAMVYDDSHDQV
S VKI Y EVSKN ILARLLANDPAPELLK
VT QVR D S N G N L L Q R V S T S P D P LD $\square$ Y A Q C Q QKLID
TAVVRDESGKQVLELEDLSRLKET
VTELRSADGSLVSTLETADISKLMAN $V \operatorname{HVLA} A D D S A L L A T L A D D G E L R D L L E$ QVWI YD
A V A L F S A T GKRTA DLE T
S S SVLKGDGTRLGEL

AVARVLRDGTE $\square$ ATVASHAE
ELYVMDNK
TTAQVFRDGKRワTTVANHAE
CPVVRNKHGKIIMEL
YKLTRSEDDPLHTVPE
LYTMCTAAGKTLRTLLDNSEYRATYADM
VF QVIDVRHPSHR
VYNVVDVDN
ELYVQDNK
RTLLRSADGRIVAEL
TAVYDFWDGRIMM
ELFIKDN
CVHLY R $\square$ N GNPL

VYNVVDVD
$S \mathrm{SVHLFHL} \mathrm{T}$ G S
$R T V V L G R D G A R L A E L$
ELFLQDN
VTVRDA ATGAVIAT
ELYLKESNTK
CVSLY R L T GPE
VYLVETASNDK $\square Y$ VLNAGDVLRHR $\square$ S QL
CVHVYKLS GS
A RVQVLRDGTRDATV
Q V NL CKIDNAK K K K L
$E L Y$
$E$
$Y$
$V$
$V$
Y V $\mathrm{H} \square \mathrm{F}$ K L T G T
ELYVAGSEDGTTKK $\square$ T
ELYVTD
S CQVFR $\square$ EHNDMTVLVENSEVNSVLQS
QRLV
A V HL
AVTQVLRDGKQDAVVASHAE
$\square K L W N S H S G E C L R T$

T T
$R T T$ RSETGELVVH LE GDEGDSHRLE
QVIS

UniRef90_UPI00047D87C5 UniRef90 B2IXC4 UniRef90_UPI00047C0387 UniRef90-B0D207 UniRef90 V5HJJ3 UniRef90-B5H9Y9 UniRef90_M5U4Z0 UniRef90_D5BDW4 UniRef90 UPI0003F8633A UniRef90-Q0V1C5 UniRef90-UPI000382E893 UniRef90 U1HS5 UniRef90-B0D1L8 UniRef90_UPIO0047D0FC4 UniRef90 UPI00047C1CAE UniRef90-A0A024KAP2
UniRef90-M4AHLO UniRef90-Q2HCS9 UniRef90_UPI00040C69AC UniRef90-E2SE51 UniRef90_F5ZFR2 UniRef90_S3ZQF2 UniRef90 S4RIM0 UniRef90_UPI0004716E02 UniRef90-E4YDW0 UniRef90 H9JYS2 UniRef90-B4VP88 UniRef90-JOXGW7 UniRef90 L7U0P6 UniRef90-UPI000375A25A UniRef90-Q6V1X1-5 UniRef90_D1A9K8 UniRef90 BODWE2 UniRef90 UPI000316416B UniRef90_UPIO00302EA45 UniRef90 F4KVP7 UniRef90 W5WBE4 UniRef90-G2NFJ0
UniRef90_UPI00035FC59C UniRef90 D6DAU5 UniRef90 D5MT79
UniRef90-S7RLI7
UniRef90-E8JIW0
UniRef90 E4YP69 UniRef90-K1RE36
UniRef90-F4X388
UniRef90_K7RQ70
UniRef90-UPI0004757712
UniRef90-H2BWB8
UniRef90_E7C5X4
UniRef90 14VPG6
UniRef90-TOIZJ8
UniRef90-UPI0004026A96 UniRef90 Q82l|9
UniRef90 F3NMJ5
UniRef90-F9Z585
UniRef90-D6WD50 UniRef90 G1RSG9 UniRef90_Q01TV4 UniRef90_UPI0003486AB6 UniRef90-A0A023GC20 UniRef90 K9QSN3 UniRef90_UPI0002000B53 UniRef90-W2TIB4 UniRef90 W2UJH9 UniRef90- W0A486 UniRef90_UPI00036BE8EA UniRef90_F4XNH8 UniRef90 A4FK92 UniRef90-W4H355 UniRef90-W8BNE4 UniRef90 UPI00040D9A78 UniRef90-D6TQG2 UniRef90-R9FAC9
UniRef90 S3ZTJO UniRef90 G7XTKO UniRef90_UPI0003AAD8D8 UniRef90_Q0REB4 UniRef90-T1AA99 UniRef90 UPI00029A40E3 UniRef90-T0Q7U5 UniRef90-Q54U01
 EVQGIS FSPDGKMLASDDNTVKLW K V A S VAFSPDGRH $\quad$ VS WDKT $\square R$ VW

T E M $\square \mathrm{F}$ T E N G K L F L Y
$\square A S \square S F N L L H T D D T R V S W S P D G N W \square A T T D G N L I L I$
S $V$ S Y S S D GRH $\square V S$ GSRD $\square R$ VW
GDNRLDEYWPSWSPDGRQWAFQMFHVRLI $\square T \square E M \square Y$ T EP $\square$ GTRPMAMTWSSDGSQLAF $\square$ WND $\square W V W$ E VWDGDFGTK $\square$ EP $\square$ NW DAVSDNAGDPAGV $R F T \square G V P R S \square T V A P D G R T V R F V R T S D G V T R T G G D L R E I$ IDHSPKWSPDGEYLLVSKGEIWMY
 LMFDDMWKGKLSSKSFNPSFSNPNQYFCTENKDIDEY

S $V$ NFSPNGQ $\square$ MAS F DKK $V$ K $\square W$
VT QEKFRL LINSPAWSPDGQY IVARKGEVWMY
LA WHPNGHHLASHDGTARTW SVAFSPDGDHIVSGSDDVRVW $\square R A L A W H P E G Q F L A S G G D D I R I W$


S $V$ A WS PDGET $\square$ ASASAD $\square K \square W$
PEVGNGTPAEGANPCSNRQGRLAFA YSVVSVAFSPDGKHIVSGSDDVRVW $Q \| L G G Q S D D V T A V A W S P D G A Q L V S R D G T V R V W$ $\square K F D E V W N G K L S S K S F N P T F S N P N Q Y M C T A R K N V N G T$

A NGYR LHWQP VIEANFQSVSSV NYYSIRWSPDGSYLSNEEGKLYVRM
ADDLEPAWSPDGRQLRSGNAETYAA DVQRVKWLDNTHFWYRDHDRVMEM SMAVSASPDGKWLAVDQGTLWUI

DD $\square$ GDRMGPNN VIGWTPDSKH LIFRTRQFTFN QPTSLRLQW QCVIVENFPSLSST

LVYSNAGDLFTF RNFQ $\square$ SPDGERVTF $\square R G R L W Q Y$

VFS $\square$ A WS P N GQT $\square$ AS GSAD $\square R \square W$
GLLRSPTSDVHFVGDA!VYENDNQGYMRD QS QLLT ID QVMK GEFVGYLPTIE WK D DSERIYFSWNP

VFAETFGG Th SVAFSPDGQFLAMGYNQVHLY T LMLDDLEKGEFRGHIWSVAYSPDGAYVASGSSDVRVW
 HEWDPSWSPDGKRI AFVSDRIYVM GGAWSPDNTRITSTDGTARTW
lupas 21
lupas_14
lupas_28
jnet
conf sol25
sol5

UniRef90_UPI00047D87C5 UniRef90-B2IXC4 UniRef90_UPI00047C0387 UniRef90_B0D207
UniRef90 V5HJJ3 UniRef90_B5H9Y9
UniRef90_M5U4Z0 UniRef90 D5BDW4 UniRef90 ${ }^{-}$UPI0003F8633A UniRef90_Q0V1C5 UniRef90_UPI000382E893 UniRef90 U1HS50 UniRef90-B0D1L8 UniRef90_UPIO0047D0FC4 UniRef90 UPI00047C1CAE UniRef90 A0A024KAP2
UniRef90-M4AHLO UniRef90_Q2HCS9 UniRef90_UPI00040C69AC UniRef90_E2SE51
UniRef90_F5ZFR2
UniRef90-S3ZQF2
UniRef90 S4RIM0
UniRef90_UPI0004716E02
UniRef90_E4YDW0
UniRef90 H9JYS2
UniRef90_B4VP88
UniRef90-J0XGW7 UniRef90-L7U0P6 UniRef90 UPI000375A25A UniRef90_Q6V1X1-5 UniRef90_D1A9K8 UniRef90_B0DWE2
UniRef90_UPI000316416B
UniRef90_UPI000302EA45
UniRef90 F4KVP7
UniRef90 W5WBE4
UniRef90_G2NFJ0
UniRef90_UPI00035FC59C
UniRef90_D6DAU5
UniRef90_D5MT79
UniRef90_S7RLI7
UniRef90-E8JIW0
UniRef90 E4YP69
UniRef90_K1RE36
UniRef90_F4X388
UniRef90 K7RQ70
UniRef90-UPI0004757712
UniRef90_H2BWB8
UniRef90_E7C5X4
UniRef90 I4VPG6
UniRef90 ${ }^{-}$TOIZJ8
UniRef90_UPI0004026A96 UniRef90_Q82lI9
UniRef90 F3NMJ5
UniRef90_F9Z585
UniRef90_D6WD50
UniRef90 G1RSG9
UniRef90-Q01TV4
UniRef90_UPIO003486AB6 UniRef90-A0A023GC20 UniRef90 K9QSN3 UniRef90_UPI0002000B53 UniRef90_W2TIB4 UniRef90_W2UJH9 UniRef90 ${ }^{-}$W0A486 UniRef90_UPI00036BE8EA UniRef90_F4XNH8 UniRef90 A4FK92 UniRef90_W4H355 UniRef90_W8BNE4 UniRef90 UPI00040D9A78 UniRef90_D6TQG2 UniRef90_R9FAC9
UniRef90_S3ZTJ0
UniRef90 G7XTK0
UniRef90_UPI0003AAD8D8
UniRef90_Q0REB4
UniRef90-T1AA99
UniRef90-UPI00029A40E3 UniRef90-T0Q7U5 UniRef90_Q54U01

$N \square R K A S K K E L I D$
$\square G E R \square 1 D P Q F M A D D S K \square S F \square L N$

SAKTGEKKNL NYETSRSYTDSEPSFSPDGRYLAFARH DA Q T GHSVMYPLKGHENC VTSVSFSPNGRHVVSG

LE WAS SVQ $\square S P$ D G Q NVVY QR N SPDGKSTCALTSGEYDD TYPSWSPDGKQI AFSST

$N \square V N K T E D A V K$ VFWDDGSGKADQYATVQPGGREMRDETY STTDYK $\quad$ TRQLTYTVERE $\quad$ TNPAFS GDDQRVVFTRG DVAT GEEAVLADPSRSRESAAGVVGYDVDPAGRWACFALS $H N T G G D G L Q \amalg K A R N H G K K D Q Q N I A D P D F S H D G K H D Y F T E N$

GAYSREEELLRERKR■GTFGDTSYDHH KTSGTFLFQASG
 NGESDDCSTGFMVTKTEKFSEWYTKYY LGSPDEKHVLARKN
 QRTTVSSGI SSYEFDPTSSTLLYS D $H R S G G D G V Q L T E R A N D Q \quad K D L G E P A F S P D G R F V V F S Q D$
$D T T T G Q T L H T L H G H T D D W D L A W H P N G H H L A T A$
D A Q TGQSVM DP LKGHSSLVTSVAFSPDGRHVVSGSN DAHAHTCGQ L $D T S T G Q E \square K T L T G H T \quad N W W W G V S F S P D C K M L A S S A$ $\xrightarrow{\perp L} P$ T GKPEKVSLEE QRNLIGGGGVYS RDF S

NTRTGQS L N S LQ GH T N $\square$ VYSVVWSPDKK T L A S A S A RERAREGGTGIVGYSADDDGNRIVFTDN



 WMDTGQTALVV $\quad$ T NVTSSSSNDTWSPDGKYIAFTMS

D A DGGNPVNVSTHEATD
DTATGKAAPAFDQAKLAAA $\square$ SKATGKPVPANKVPAYF S
 DAATGEERLVADPAAGDVPGEGQVGYAVDRDVRQAVFTLG

DF T G QLMTVPA E G GEAVE $\quad$ DP LK N G GFS Y S P D GK K L A Y N Y R NKFSREEQLLWERKRLATWGUNTYE $\square H$ SESSGK IIIFPASS

DNTTGKTTQLTKTTDAE TNPRFTQDGKRDSTTRN VTETGAVTALADPSAMREHGGG\VSYTVDDAFTRAVFTLS
$D \square K$ T S Q C WK $\square L Q$ G H T S AVA A VA WS P D GRTDA S A
$P$ LDTMKPEPLLDRSS GAGITAYTADARARRVVVALP

 NTETGQLIHTLEGHTDD

VT D $\square$ A F S P D GK Q IL L G S D

CVGHT GWVTSFE LHKPS GKVVFP
QVA D GK QQVV
$C$ VGHTDWVWSVSFSPD GKVLASSGK $N \vee E N G A C V R \vee L$

D A A T S T LQQT LE G
DADGKNPRN LTNSHVGE
DSTT GHHQLTLTTGHTDA
HDDSV IS $\square$ A F S P D GRK L VS G
LT GGAWSPDNTRILT T SD
DARTGRTGLSS IHNDRDREWRYGLVNYRWSPGGHHLLAANG

UniRef90 UPI00047D87C5 UniRef90 B2IXC4 UniRef90_UPI00047C0387 UniRef90_B0D207
UniRef90 V5HJJ3
UniRef90-B5H9Y9
UniRef90-M5U4Z0
UniRef90-D5BDW4
UniRef90 UPI0003F8633A
UniRef90_Q0V1C5 UniRef90_UPI000382E893 UniRef90 U1HS50 UniRef90-B0D1L8 UniRef90_UPI00047D0FC4 UniRef90 UPI00047C1CAE UniRef90-A0A024KAP2
UniRef90-M4AHLO
UniRef90_Q2HCS9
UniRef90 UPI00040C69AC UniRef90_E2SE51
UniRef90_F5ZFR2
UniRef90-S3ZQF2
UniRef90 S4RIM0
UniRef90_UPI0004716E02
UniRef90_E4YDW0
UniRef90 H9JYS2
UniRef90_B4VP88
UniRef90-J0XGW7
UniRef90_L7U0P6
UniRef90 UPI000375A25A
UniRef90_Q6V1X1-5
UniRef90_D1A9K8
UniRef90 B0DWE2
UniRef90-UPI000316416B
UniRef90_UPI000302EA45
UniRef90 F4KVP7
UniRef90 W5WBE4
UniRef90_G2NFJO
UniRef90_UPI00035FC59C
UniRef90 D6DAU5
UniRef90_D5MT79
UniRef90_S7RLI7
UniRef90_E8JIW0
UniRef90_E4YP69
UniRef90_K1RE36
UniRef90-F4X388
UniRef90-UPI0004757712
UniRef90_H2BWB8
UniRef90_E7C5X4
UniRef90 I4VPG6
UniRef90 ${ }^{-}$TOIZJ8
UniRef90_UPI0004026A96
UniRef90_Q82lI9
UniRef90 F3NMJ5
UniRef90_F9Z585
UniRef90_D6WD50
UniRef90 G1RSG9
UniRef90-Q01TV4
UniRef90_UPI0003486AB6
UniRef90_A0A023GC20
UniRef90 K9QSN3
UniRef90_UPI0002000B53
UniRef90_W2TIB4
UniRef90_W2UJH9
UniRef90 ${ }^{-}$W0A486 UniRef90_UPI00036BE8EA UniRef90_F4XNH8
UniRef90_A4FK92
UniRef90-W4H355
UniRef90-W8BNE4
UniRef90_UPI00040D9A78
UniRef90_D6TQG2
UniRef90_R9FAC9
UniRef90_S3ZTJ0
UniRef90 G7XTK0
UniRef90_UPI0003AAD8D8
UniRef90_Q0REB4
UniRef90_T1AA99
UniRef90_UPI00029A40E3
UniRef90-T0Q7U5

NKTKKVYEKNGDTF LVDLLS SNEKTRTTHTNADEENPHFTD
 DKTVRVWD A Q T G Q S VMD

K G D A YVTSVRFSP
$R E L P$ T P G P VLD P R P S P
D

N A F $\square Y$ D LD K G S $\qquad$ $\square T$ K LT N $\square \mathrm{N}$ | GTK R E E K K E K |
| :--- |
| PV V |

$\square S P$ Q VS D $\square$ F T L E $\square$ P HEENAR VEAR QLT K WN R WCGNP VWS A
SRDGT\GLWDAQTGQSVRLKGHDDWDTSVAFSH YMDVMSDSRRSRLWLVS RDAKN HVVKLTSHDVRESSPA WS P R S G T E D I WTV D VR G G S L H RI T T A K T D E S QPA WS P GE $\square$ $L \vee A A V D G A V T P F A T G A H G A S A L A A S P$ $M D P K$ I C P G H P A GHVWRVE GE GEQAVYR VE GWGLRKEGS GE ILAERKVPVK $M \mathrm{NLLFSITPDNGLLSQLTDFKSGTKKADSKP}$
 RELPAPGPVIDDRPSP S LF Y C Q D G GTNSTF LT S P LIK P TEVVRTTECA GSRMDP KICPP A MK QWRHGGGDN $\quad$ GW W M M K R D G S D A K Q $\quad$ T N E S F R L N N A V WT P QWRHSYFADYYVYDLT TEQ】SAE!ANFKQVQYATWSP

DK TVKKLWDLEGDLLKTLTGHDKSVNSVAFSP


DP F V S GPGGS IRPTPSR
TVRELTVPGPVIDPRHAP ETSCPN RRMDPKLCP
SHDGTARワWDTT TQTLHTLHGHTDWVSALAWHP D D TVRVWDAQTGQSIMD P P K K GHDHIVTSVAFS P SFDQTIRLWDRQGDCLKVLSGHTNGIWSLVWSP
 $R K$ VF S R S G DVV L L E VA T G K V Q Q I T N T L D N E GSPR F T G R ELLATATPVIDPRPDP

DRTVKVWNTC T S QCLLK T LQ GHS N S VLTD P R P S S P GRLFLTDDD WNDPHTRELAGEWLDEDPAMYTPVLNPRDAP DEE F NVD VYLMKADGSNPARLTTDRWVDTEPAWDP



 VDAKEKP LDVKMPKKPEGAKWSPKFQYITKARYQA
 FKD DMTDKNLSNLWMANFDGTRNRPDT TGNSRDFNP IWSP RD GNS DLYLMMSAHAPEDEPVNLTYDSAFDPSWSP PD GHYD $\square$ D LMGKHYQCDLRGGECTAKAAAKTGNEPGILSP $R D G G Y$
 D L WT $\square K P D G S D M$ $G Q L Y$ VA DLLGGE $\begin{array}{llll}1 \\ V & R & L & P \\ R & A & T & P \\ V & F & D & P \\ R & P & D & P\end{array}$ REL L R VP G P V





S Y Q Q AVK L WD TKTQCL NT LQGHTNVVLS LRWG
 TS D QYRHSFNATYA I S I LN RET L LA YKVGI A K QR $\square F \square W N P$ D F K WK VY E K G G D LF L K NL DNY TVVKRITNTLSWESNP QF S G


CFSDLYQCFDTGYNTSPLFPRQLRTCPQWAADPQ DCP DK NITKLWDVNSEC LVTMQQGHSNGDA SVAFAP
 SWDRSVRVWDLTTSTHQTLKGHEHYVYSVVCFSP

G R H W
$H A \square G W$ $R I Y V I D A D G K N Q H I L T N N D F H D W Y P S W S P$
 $T L A R V Q G W P T$ Q F S L L S P
$W P L P T A G P A V D P R P S P$

UniRef90 UPI00047D87C5 UniRef90- B2IXC4 UniRef90_UP100047C0387 UniRef90_BOD207
UniRef90_V5HJJ3
UniRef90 - B5H9Y9
UniRef90
M5U4Z0
UniRef90-D5BDW4
UniRef90-UPI0003F8633A UniRef90-Q0V1C5 UniRef90-UPI000382E893 UniRef90 U1HS50 UniRef90- B0D1L8
UniRef90-UPIO0047DOFC4 UniRef90_UPIO0047C1CAE UniRef90- A0A024KAP2 UniRef90-M4AHLO

## UniRef90-Q2HCS9

UniRet90 UPI00040C69AC UniRef90-E2SE51
UniRef90-F5ZFR22
UniRef90 S4RIMO
UniRef90-UPIO004716E02
UniRef90-E4YDW0
UniRef90 H9JYS2
UniRef90 B4VP88
UniRef90-JOXGW7
UniRef90 UPI000375A25A
UniRef90-Q6V1 1 1-5
UniRef90-D1A9K8
UniRef90-UPIOOO316416B
UniRef90-UPIOOO302EA45
UniRef90 F4KVP7
UniRef90 W5WBE4
UniRef90-G2NFJO
UniRef90-UPI00035FC59C
UniRef90_D6DAU5
UniRef90-D5MT79
UniRef90-S7RLI7
UniRef90-E8JIWO
UniRef90_E4YP69
UniRef90-K1RE36
UniRef90 F4X388
UniRef90 ${ }^{-}$K7RQ70
UniRef90'UPIOOO4757712
UniRef90-H2BWB8
UniRef90_E7C5X4
UniRef90_14VPG6
UniRef90 ${ }^{-}$TOIZJ8
UniRef90-UPI0004026A96
UniRef90 Q82119
UniRef90 F3NMJ5
UniRef90-F9Z585
UniRef90-D6WD50
UniRet90_G1RSG9
UniRef90 Q01TV4
UniRef90_UPI0003486AB6 UniRef90 A0A023GC20
UniRet90 K9QSN3 UniRef90-UPIO002000B53 UniRef90_W2TIB4
UniRef90-W2UJH9
UniRef90 ${ }^{-}$W0A486 UniRef90-UP100036BE8EA UniRet90_-4XNH8
UniRet90_A4FK92
UniRef90-W4H355
UniRef90 W8BNE4
UniRef90 UPI00040D9A78
UniRef90-D6TQG2
UniRefol_Rofacs
UniRef90_S3ZTJO
UniRef90-UPIO003AAD8D8
UniRef90-Q0REB4
UniRef90-T1AA99
UniRef90 UPIOOO29A40E3
UniRef90-TOQ7U5
UniRef90_Q54U01

NQTKI AFKRNKDIIFTWDIUASGT四QITNFTDKEEKTEEEN DGKMLASASDNTVKLWDTTTGKEIKTLT
TGARVAFVRDGDLWVAALRGDTLSAPQRDTTLARSGVGVE DGRHIVSGSDSTI RVWDAQTGQSVMDPFKGHNDTVASVAF NRDLVAFVASGDLWVHHTASGCEARLTYCRKDGASVSGlP dGRLVAYVAGGALRVTGAEGEEDRALAEPEDEHTTYGLA

KSDKNEWTQDENLELLEVVNQRKEKAEASKVYRKSKARDD TGTHVAYVTDNTLRVIGIDGSGDRALATPAGDDEAW GDA FFRDYNVWYREENGQEDPMSTTGTEDSPFAN
DGQE!LFLRNR\|WRVAAFRNEDARLVENDGESTTSLAFSP DGRCIVSGWDKTI RVWDAQTGQSVVDPLKGHDVRVWNAQT DGTRIAFTSGSEI YVYWLASGKIARLTQ
DGKQIAYTQGNTIESVDIASGKVTTLVQGSQQ
DGSKLAFDAGGALLQVGEAGGTPTRLV GS D FGVAFINNNDLWIANVKTGEERRLTYCHKEDPRSAGVA EGQEKFLKDDQLAMFEVLKERKEKK DAGKKITDAEKAA TGRRTAYAAGRSLRVIA VDGTGDQADAEPEGATETWGQA DGKYVAFVRKTALFLKDUKTGEETPLTTEDERDMQEGFGS DGRHI AYVAGGALRVTGADGGDDRALAAPDEADTVTYGLA EPDVVFARKHGEMWMYHRTGGTGVQLTKRGEPFASPDGKY DGTLKLLWVDNNKDIYFDKFSSSTRVTYDGGWCCIYNGVP

DGKMTATAS RDNTVK DWQRNDEGTFE DPDKTLQEHSDD DSTLVAFVANRNVHI DWKGKVIYSSSTGDNIINGCS DGKQLAFIRKSIVLYVADVASGAERPLYDGLDRDMQ DGRHVAYVAGGALRVV GAGGEDDRALAEPESETVSYGLA DPDWI AFIHSNDIWISNIVTREERRLTYVHNELANMAGVA NGHHLATASHDGTARTWDTTTGQTLHTLHGHTDPDWD DGRHIVSGSNDETRVWDAQTGQSVMDPLKGHDH DGKRLASGSEDHSVKIWDVNRGECLKTSNHSDIFSTAWNP NGKMLASAS ADYTVKLWETCTGTEIKTLTGHTSEVWGVS DEKGLTWVSNNNLYLWDSATGSDTQLTNFKEEWLKEDQMD TGRHI AYVANGELRVVGLAGGEDRALASPEGEQITW GLA DGRHIAYVAGGALRIVGVDGEGDRADAEPEDEHTYGGA DGQTFASGSADFTLKLWDPTTGQCLKTLLGHKSADWSSAD
DGEHVLYTGGSYMLVDTGGELGDRITANPAENTWKIGLA TGGSIVFSSDRDSYL Ni EDGKTYEMVYEFEDYVMDANGS DGKHLVSGSDKT RGLDAETGEEVGEPLRGHESSVSSVAF DSKHILTGSGKSVHIWNTATGTIVLTLNHSSWVRSVAWSP NTTKLVWVTNQKDIYYSTS DDKSNRVTDDGGWCCMYNGVP NSQLLAFINQGDIWVANTEDNQECRLTYTNEDEPLSAGTP NNALI AHTCSGDLYLSHSUTGSSVRLTHARKDDPLTAGTP DGKGVLDPAYTHIFIVSDGGTARQLTS GNYHHNGRLSF RGESVAYVCRGALRVVSVGSGADRAVAEPDGPGVTW GLA DGSKLDFRSNTDGYLMWMDTNQKMVLSDAQESPGADS DSEQLTFVSNRSMFVQPQRFDEE LDDAGFPAWSRNGVA DKTKEAFVRDWNLWVRDVATGKETQLTTNGVKDFGYATDN DGKTIAFSSDRDIWTLDVATGAMKQISSNPRE
AGRRVAYVSGRTLRVIEMDGSDDRALVQPESEQVSY GLA DGRHI AYVAGGALRVVGAEGEGDRALAEPEPAADAAYGLA DGRHVAYVARGALRVVGAEGEDDRALLEPESEGVSYGLA DGNKI YF ASDRNLYVYNGADKTYRQLTFNDQUVGYQGGQL DPAFFSFINNSDLWVANIETGEERRLTFCGGASPSSNGRA DATPEVRGSDSQEYLKKEQKELLQVVRDRVEQRDEAQKKR AGDRVAYVHHGAVRVIDIVVNGDQRVLVEPDGEHVTWGLA NGDLVAFVSAGDLWVTHLGSGAEVRLTHTRSDSPVSVGIP DGQTLA SSGGDQTVRLWD GGERLAFVRDGARHVVRWPGGEGAVLCLVAPEGPDVSYGL VSDDYIFWQDGHLYYSDSADSDTSVRISNGGPNWEH GIF DGRRLAYVATGQLYVRWMASGETARIT
DGRRLAYVATGQLYVRWMASGETARIT
DGRSVAYTPAGSMRVCDLDGNDESLVEPRGNETW GEGQA HGRTVSYLSGGALRVIAADGTGDRALAEPDGDDVGWGAA

NSDLIAY $\square$ S GSD $\square W V T H T V S G H E E R \square T F A H D D D P \square S A G V P$ KGNILASASEDQTVKLWNASTGECLKTLSGHHGRVSSIAF DSKQLASGSEDRSIRI WDVASGECLSTLRGHHNRVWALAY TGRLVAYVHKGA HVLDDADG LDRVVAAPDGKNVTVGLA DGSLVA YVTGGALRVV GADGTGDRALAEPEGDDVTYGLA DGCRVASGSYDHTAKIWDDTSCTHQTL DGKHI AFVSDRD VYVMDADGKNQRRLTENDSPDTGPSWSP DNTRILTTSTDGTARIWDATTGHHQHTLTGHTDTATGG HD HWLSFVFHHTDELVRPGATSEPAPILKAARGMRDGAA $D G S L V A Y A T G G A L R V V G A D G A G D R P L A A P E A P D V V Y G D A$


UniRef90 UPI00047D87C5 UniRef90-B2IXC4 UniRef90_UPI00047C0387 UniRef90 B0D207
UniRef90_V5HJJ3 UniRef90_B5H9Y9
UniRef90_M5U4Z0
UniRef90_D5BDW4
UniRef90-UPI0003F8633A
UniRef90_Q0V1C5 UniRef90_UPI000382E893 UniRef90 U1HS50 UniRef90-B0D1L8
UniRef90_UPI00047D0FC4 UniRef90_UPI00047C1CAE UniRef90_A0A024KAP2 UniRef90-M4AHLO UniRef90_Q2HCS9 UniRef90_UPI00040C69AC UniRef90_E2SE51
UniRef90_F5ZFR2
UniRef90_S3ZQF2
UniRef90 S4RIM0
UniRef90_UPI0004716E02
UniRef90_E4YDW0
UniRef90_H9JYS2 UniRef90 B4VP88 UniRef90_J0XGW7 UniRef90_L7U0P6 UniRef90 UPI000375A25A UniRef90_Q6V1X1-5 UniRef90_D1A9K8 UniRef90_B0DWE2 UniRef90_UPI000316416B UniRef90_UPI000302EA45 UniRef90_F4KVP7
UniRef90 W5WBE4
UniRef90_G2NFJ0
UniRef90_UPI00035FC59C UniRef90_D6DAU5 UniRef90_D5MT79 UniRef90_S7RLI7
UniRef90_E8JIW0
UniRef90_E4YP69 UniRef90_K1RE36
UniRef90_F4X388 UniRef90 K7RQ70 UniRef90-UPI0004757712 UniRef90-H2BWB8 UniRef90_E7C5X4 UniRef90_I4VPG6 UniRef90-T0IZJ8 UniRef90_UPI0004026A96 UniRef90 Q82ll9 UniRef90 F3NMJ5 UniRef90_F9Z585 UniRef90_D6WD50 UniRef90 G1RSG9 UniRef90-Q01TV4 UniRef90_UPI0003486AB6 UniRef90_A0A023GC20 UniRef90 K9QSN3 UniRef90_UPI0002000B53 UniRef90_W2TIB4 UniRef90_W2UJH9 UniRef90 ${ }^{-}$W0A486 UniRef90_UPIO0036BE8EA UniRef90_F4XNH8
UniRef90_A4FK92
UniRef90_W4H355
UniRef90 W8BNE4
UniRef90-UPI00040D9A78
UniRef90_D6TQG2
UniRef90_R9FAC9
UniRef90_S3ZTJ0
UniRef90_UPI0003AAD8D8
UniRef90_Q0REB4 UniRef90-T1AA99 UniRef90_UPI00029A40E3 UniRef90_T0Q7U5 UniRef90_Q54U01
170
180 190
T K D S WY IDD D T V V NMQMSPD GKYVTY|LTVKKEKKERATVIP GHRNSVFG S
FS PD GKMLASASADNTVKLWDTTT
D F A
WA P D G Q T L A I V E T D R T P I RT R L I P
S P DGRH $\quad$ VS GS WDK T $\square F$

SYAFYTG DKQ $\square$ S G $\square S$ S $\square$
EF DA AEGM GRTR
$G Y W \bar{W}$
$Y T Y P S$
$\square$
QSNRLVYSKGASDLNDW
Y H
GQSVIE P LK GHDHWVT F S
PNSQFAVAYRMSLNSTS S GVTP G Q SVIE P LK G H D H WVT F S P D G K H IV S G S Y D K TVRVWHT QT
 F WAAAGDRIVFVEADDTNTRRKA
 GLQYDPNRLMA Y PKE I Y LGEKNVS SQQD EF $\quad$ AA E EMDRM RGFWWAP YFAYF D WMPDSSA VYWTGGG
 TFVIDE EFDRYTGYWCSPESDRLLVARVDEAPVQR VE W V Y Y S E D M S G G S T F E Y N K D P N G Q DY V I R R V D Y T G E I E NV I T EWNYEE EMVSTTNTDYWAPDGQTFTFAAFDVSEDEDMKYS
 SFIAQEEDDRFTGMWWSPGPQKMLLY EQQVDETAVTV ETWA I H GVYP TMA WT R D DKA II FWR VDVAT KKVT PI P

 LA WHP N G H H L ATASR D GTARI WD T DGG ILASAGEDGNITIWD IDDSDRCLKTLQGHGATVWADAW
 MFEVLRWRKGQRDARQASPDLDFVTFRYTKRAESKSTDVP E F I A A E E M S R S R GYWWS P D GMHLL LA A RVDNSSPVQRWY WA




 S Y V MQE E F
 S ANRSDN
Q GA VNKDワFANERFPAWS

WIHTNRAVVNWS
D RLPS WS P D GAR I A Y S GTE G S K TALLYVT A


 TAQET RKPFT LQQARQQLTPDEKYVIVSV FEAAVTAAKA TI

 P DLLVAR GEDGRE E GYWWAPD GA T L L VAARTDES GVAR R D WV Y E E E I F GR GS QVWWWS E R GE K L A F L S R E K T K EK S V M M I




 D WVYS VAFS
VAF S P D GQCLATGSWDK TVK DWNTAS A WS P DNTR IL TTST D GTARIWDA

$\square G F \square Y$ A E E F S R Y T G Y WWS P P M Y T $\square$ C Y $\square E E D E T N D M D Y H \square P$

sol25
sol5




| $D V D D K E L I Q P F E G L F E G V E Y I A R A G W T P E G K Y W S I L D D R S$$R I W D T Y T G Q T L H T L H G H T D W V R A L A W H P N G H H H D G T A R D W$ GSADKTVRVWDAQTVAFSPDGRHIVSGSNDKTVRVWDAQT VLAV VWSPAGQRLASSSADHS IRLWEPDTGKCLKRLQGH LT GHTQGVGWVSFSPDSKMDNTVKLWDTSTGKEIQTLTGH DTKKLEGLYDKPTY L K DYHKGDKPYNPKYDKPREVSIVFS EWDRDAHPYLASVHWSTGGAP LLAVQS QA $V V W D R T R$$V H S L L T$ RYA G $\square$ T GNADVDWDREAYEYVAAVNWRRGHDPLVLVQNRR YV METDGTGLVQLTSSPDWDIQPAWAPDGQHIAFYSGQE |  |  |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  | $L$ WDAHTGKPGIGDPLKGHN

PDSTHLLMKLKHNTHI
ENRYFTRIAFSPNSKSFVMTWSSRAATQSKSVVCNTLTDG GVQHFQLLEPLLTFFPRMEYMVRAGWTPNGKHVYAELDRQ DI E ILEL QYPLH DMFPWMEYMVRVGWTPDAQYVWQLLDRK NITKDIDNSVSNFHWKDNKRIYFQQ PSEPHWDEWDREALPYDATAGWTT GPDGTPTAVFGAQS $\square F V L S T D G G T P R Q L T N S E F D Y E S P V Y G K D G N T V Y F S A N M Q$
$Y Z V R S G A E E E A D N L T E N A N D R D F A W S P D G D R L V F V S D R D$ YLVRSGAEEEADNLTENAANDRDFAWSPDGDRLVFVSDRD RLQLPPQQRCDDISCNSDGHWSDLEWAPDSR D DGKAVSGTENVFPFR DS WGQGGYYYVSDGK $\square R R R T G S R V$ $V A W D R G E F P Y V V D A \square W$ Y Y Y $V$ VWDRAR YPYLAHVHWSEAGAPLILV QA VAWDRA GYPYLARVHWSAAGAPLILV QA WSPDGKWDAYDSDKNGEFNDWLRDAFTGEEKMLTKDLKTY Q V D DCMLELQFSLSMLFPWMEY IVWTPDSEY WVQLLDR KI I STQEVQPFSSLFPKVEY DARAGWT RDGKYAWMFLDRP WVDHGQKKPAGAAPAAANRQMSAPLWSEDGSKAVISARSA


 HMDVQLR DSTAFHYLYGVKWVVMRDEELLVATWANRLD Q $\square K T D E D E G \square F D K P F Y \square K E Y A E D A Q N Y K S D D G K A V V N D T S$ QIT S GA $\quad$ D L $\square H T \square Q G H A N H V T S \square A F S P D G N K I L S G G D D N S L R L W D T E S$ VDWDRASLPYLVA AHWSAHGRPLIAVQS PVSTLL $V C I K D L P Y S L S V V F P W L E Y D V R V G W T P D S N Y V W M Q G M N R K$ I NSLVFSLDSHULASGADDRTVKLWDVNTGECLRTLQGH W】YAVAYSPHGNIVASGSDDQTIRLWDVNTGYCLRTLGGH TGEPVWVEWDRDAFPY LVTAGWTQRLKGTSTVVFTV VRTPEKEEYHPTDGAWTDTTLEMVLRARWDACGVVVWDVS RRRTKDGSDDTDPAWFDPAFVPVFAVSPAGKKFTMWGWFK RIWDATTGHHQHTDTGHTDTATGGAWSPDNTR』LTTSRDG

RPPARADAEGHPAGTWTDRRFEY LTAAGWDAHGPYVEFQT AVQSP $T F Q D S K E \square F D L K T Q F P W A E Y \square T R A G W T P N G H S \square Y Q L L D R K$

UniRef90_UPI00047D87C5 UniRef90_B2IXC4 UniRef90_UPI00047C0387 UniRef90_B0D207 UniRef90_V5HJJ3 UniRef90-B5H9Y9 UniRef90-M5U4Z0 UniRef90 D5BDW4 UniRef90 UPI0003F8633A UniRef90_Q0V1C5 UniRef90-UPI000382E893 UniRef90 U1HS50 UniRef90-B0D1L8 UniRef90_UPI00047D0FC4 UniRef90-UPI00047C1CAE UniRef90-A0A024KAP2 UniRef90-M4AHL0 UniRef90_Q2HCS9 UniRef90_UPI00040C69AC UniRef90-E2SE51
UniRef90_F5ZFR2 UniRef90_S3ZQF2 UniRef90 S4RIM0 UniRef90_UPIO004716E02 UniRef90-E4YDW0 UniRef90-H9JYS2 UniRef90-B4VP88 UniRef90-JOXGW7 UniRef90 L7U0P6 UniRef90 UPI000375A25A UniRef90_Q6V1X1-5 UniRef90-D1A9K8 UniRef90_UPIO00316416B UniRef90_UPIO00316416B UniRef90-F4KVP7 UniRef90 W5WBE4 UniRef90_G2NFJ0 UniRef90_UPI00035FC59C UniRef90-D6DAU5 UniRef90_D5MT79 UniRef90-S7RLI7 UniRef90-E8JIW0 UniRef90 E4YP69 UniRef90_K1RE36 UniRef90-F4X388 UniRef90 K7RQ70 UniRef90-UPI0004757712 UniRef90-H2BWB8 UniRef90-E7C5X4 UniRef90-14VPG6 UniRef90 ${ }^{-}$TOIZJ8 UniRef90-UPI0004026A96 UniRef90 Q82lI9 UniRef90 F3NMJ5 UniRef90-F9Z585 UniRef90-D6WD50 UniRef90-G1RSG9 UniRef90 Q01TV4 UniRef90_UPIO003486AB6 UniRef90-A0A023GC20 UniRef90 K9QSN3 UniRef90_UPI0002000B53 UniRef90-W2TIB4 UniRef90-W2UJH9 UniRef90 ${ }^{-}$W0A486 UniRef90_UPI00036BE8EA UniRef90_F4XNH8 UniRef90_A4FK92 UniRef90-W4H355 UniRef90-W8BNE4 UniRef90-UPI00040D9A78 UniRef90_D6TQG2 UniRef90_R9FAC9 UniRef90_S3ZTJO UniRef90_G7XTK0
UniRef90_UPI0003AAD8D8 UniRef90-Q0REB4 UniRef90-T1AA99
 GKEDT GHRNSVNDIS FSPNGKMLASASFDNTVK LWDTTTG KDRRLLFVANVATGTTRLLVREQEADNVSAEWRAAWSP KGHDDVVTSVAFSPDGRHVVSGSCDKTVRVWDAQTGQRVM QQHLLQLVLFQPEGENPSSADIGPQVLWEENSHVWINVHDV
 KDNKDRWIA QLHLEDGSLTVLDRQRDEAWLAGPGLGWS G G
 GD ANLYIVNVQTGAYRQLTTGRTDNY QRGHQVLRYVGLNQQGQVRSVIGDSSTTFVDYSQKEYHHE TDRLWDAQAVTNRLGPKNKESVDTRCIIGLVITGCNRDFN QLSP DGKSVAFKAGNDEWVSPLGGTPKKVTDDSYYE


DELGSVRDVSARGGKGKVITKQPGHYDEPSFSSDREK QRSALYLAVDPDNGSTR


QNRAYFHFCYVHGHLPNCTTVKQLISTPDESKFYEWVEQF ED IVWDVSFSFNGER $\square A S A S A D G T V K L W E K D S S T N G S H T P$ QDRYALVLIPLDLFGSRQNSAQVVTLLQEQSEIWFNVDNL
QRDQVC LADDPESGSTRMVHADEDPSWLD $\quad \square F P$ QTRLQUVLISPELF DPVPDSVTPLIIYEETTD DW DN DHD D DTTTGQTLHTLHGHTGPIWDLAWHPNGHHDATASWDTTTG VAFSPDGRHIVSGSCDKTVRVWDAQTVAFSPDGRHIVSGS SCWVWGLA WSPDGDTLAS GSDDRTIRLWHPDSGECLKK TNWVWGVSFSPDGKMLASASDDHTVKLWNTSTG DDGKAVVSTRALDNKDRWIVLLDLVTGQMKDRQHDEAWDG RDQRSMLVLAVNTASGKTTVL HEETDERWVEIL P
 $Q D Q V L E V A V A A D G A A L G A T R V L E E H A N E Q W$
GNFEIYVM
SGSDDCTVRVWDTDTGQA VEQFRSTS $\square H D D G W L I S P Q G$
ADSSNGAGE DNKYHGWVGSFGPFKP $\square$ DADNGDYYT $\square Y S$ QKRMSLVLIPVDFFFGRNIPPLTVLYEESSEDWVNTHDUL QQKLEELVLLSIDNFCETPTSASVQVIYSEQSPIWINVNDL

RDQRT LT VFSADPATG
EDRLNSEIYKMDDPSGNVTA LTERQGPDANPVVSPDGKKL



UniRef90 UPIo0047D87C5


UniRef90-UPIOO047C0387
UniRef90-BOD207
UniRef90_V5HJJ3
UniRef90-B5H9Y9
UniRef90-M5U4ZO
UniRef90 D5BDW4
UniRef90 UPI0003F8633A
UniRef90-Q0V1C5
UniRef90_UPIO00382E893
UniRef90 U1HS50
UniRef90-B0D1L8
UniRef90-UPIOO047DOFC4
UniRef90 UPI00047C1CAE
UniRef90- A0A024KAP2
UniRef90-M4АНLO
UniRef90-Q2HCS9
UniRef90-UPI00040C69AC UniRef90-E2SE51
UniRefoto-FFZFR2 2
UniRef90- S4RIM0
UniRef90_UPIO004716E02
UniRef90-E4YDW0
UniRef90 H9JYS2 UniRef90-B4VP88 Uniinefol-JOXGW7 UniRef90 L7U0P6 UniRef90 UPI000375A25A UniRef90-Q6V1×1-5 UniRef90-D1A9K8 UniRef90-BODWE2 UniRef90-UPI000316416B UniRef90-UPIO00302EA45 UniRef90-F4KVP7
UniRef90 W5WBE4
UniRef90-G2NFJO UniRef90-UPIO0035FC59C UniRef90_D6DAU5 UniRef90_D5MT79 UniRef90-S7RLI7
UniRefon E8.JWO UniRef90 ${ }^{-}$E4YP69 UniRef90-K1RE36
UniRef90-F4X388 UniRef90-K7RQ70 UniRef90-UPI0004757712 UniRef90-H2BWB8 UniRef90_E7C5X4 UniRef90 14 VPG 6 UniRef90 ${ }^{-}$TOIZJ8 UniRef90-UPIOOO4026A96 UniRef90 Q82119 UniRef90 ${ }^{-}$F3NMJ5 UniRef90-F9Z585 UniRef90-D6WD50 UniRef90 G1RSG9 UniRef90 Q01TV4 UniRef90_UPI0003486AB6 UniRef90-A0A023GC20 UniRef90 K9QSN3 UniRef90_UPIO002000B53 UniRef90-W2TIB4 UniRef90-W2UJH9 UniRef90 ${ }^{-}$W0A486 UniRef90-UP100036BE8EA UniRet90_F4XNH8 UniRef90 A4FK92 UniRef90-W4H355 UniRef90-W8BNE4 UniRef90-UPI00040D9A78 UniRef90-D6TQG2 UniReffo-R9FAC9 UniRef90-S3ZTJO UniRef90-UP10003AAD8D8 UniRef90-Q0REB4 UniRef90-T1AA99 UniRef90_UPIO0029A40E3 UniRef90-TOQ7U5 UniRef90_Q54U01

330
340
350
360
GGSLGWMPDNKRIIWFQSEKSGYSHLYATNVKTKKTEALLTS KELKTLTGHTNSVNDПSFSPDGKMLASASGDNTVKLWDTT DG GPFKGHDDTVTSVAFSPDG RHI VSGSWDETVRVWDAQ LHFKRSEQPQTDLLWASEESGFRHLYLRSDRVISKVQLTG ESSYEQGFGGGRLVRGADEGGARVLAVGDRVLTGAQLQLR VPLVTYLDNEDEVIYASEKSGYRHLYLVDQSTDTMRPQTQ GGTLGWLPDNKHIYFQSEATGYSHLYVLNVDNG
YYQELTSSNSSELI WASERDGWNHLYLIDDMKGKVKNQDTK TYFGSDRDGTEQIWKMP
I RD SNEMIWASERDGWNHLYपFDQTTNMKNQTTR VLRLVIDPDTGHDNWVTSVAFSRHI SGSCDTDRMWDAQT AYLGYDDKVQTYQVTR DD AWSRGAKGLALSTDKAGFSHLYLIPAAGAEPEAI TE FYPFTTEDEFTFIWVNESKTGFSHLYKITSLLQQGYHHWT KRYYLVSPDTTELLWASERDGWNHLYLYDMKGEVKSQVTK SSGEIGFDNDNNIVFQSEETGYSHLYSLDVVSGKKTALTN

VVYRKFTGGYLLDPKYSVDPGDYVADLDRKTEKKVSD GSPCWSPS GRLVR $\square$ ADEGGARVLA WGERPLTGSSLHVR F HPFQTREDELTFLWASECRTFRHLYRVTACSVTEVALTS EPPMFSDDGDTFDTLLPDGSYWRHTTNVSSTTPRKTADTS DYRKTLQGHNKEVLDVSLSQDGQLI ATASYDTTVQLWTGN TRFLTPVGGDLQFIHASDRDDHTHLFHYTARTCSSRPDTA
GVPCWSPS GQLVRDADEGGARLLAVGER PDTG FHFPQSHEEEDEFIFASECKTFRHLYKFKCPDKEEDADTS QTLHTLHGHTGPlWDLAWHPNGHHLATASHDGTARIWDTT YDKTVRVWDAQTVAFSPDG RHIVSGSYDTVRVWDAQT TLQGHTA WVWAVA WSPDSQFLASGSGDLSIRVWDV TEDKTLTGHTERVKWVSFNPNGKMLASASDDKTVKLWNTS GGGMGWLPDNEHLWFQSEATGYSHLYTDNVNTGVKKALTN GVPAWTRDGKLLRITAREGAYRLVI GDEEVTGPELQVRSV


## D पHFWDPPDH

KKTAGNPKSDLHPFGLETKDGYWNVAKESATGGMTFLTDS HFLPHPNPSEIKFLWASEKSGFRHLYQFKANVIDREVMLTS LYFLKSDDANEVFIWGSEESEFRHLYLITPRITSKUALTQ

AYVGF DDK KQGYQ


TLASGSFDQTUKLWDTSTGQCLNTDQ
SSTLSSDDATYMLLTRADGNSYQHTAKVTTQGDKSSFLS SRPEIGWIDDNSNIWFQSEKTGYSHLYKANVNTGEIIDALTK
 QSGQLLYTYEGHVLAIIAFSRDGNKILSGSWDDTDRDWDTQ KPGWPAWHPSGRLVRISAQDGAYRLVVGDR PWTP KHYMHFLPCTHELLWISERSGYRHLYLYNVPASFHDMTTS LYF
 ■WDपNTPPGRPSRGAGGKPVQHWHADRDTAGLRVGNVLTP
 TP LRTASGAVVVPHVREGTRATRVGEAVSP RTY FSFQFLKSIENQLIWSNEQSGYRHLYLTKWDTCNDNDNDN

UniRef90_UPI00047D87C5 niRef90 B2IXC4 UniRef90_UPI00047C0387 UniRef90_B0D207
UniRef90_V5HJJ3 UniRef90-B5H9Y9
UniRef90-M5U4Z0
UniRef90 D5BDW4
UniRef90-UPI0003F8633A UniRef90-Q0V1C5 UniRef90-UPI000382E893 UniRef90 U1HS50 UniRef90-B0D1L8 UniRef90_UPIO0047D0FC4 UniRef90_UPI00047C1CAE UniRef90-A0A024KAP2 UniRef90-M4AHLO UniRef90-Q2HCS9 UniRef90-UPI00040C69AC UniRef90-E2SE51 UniRef90_F5ZFR2 UniRef90- S4RIM0 UniRef90_UPIO004716E02 UniRef90-E4YDW0 UniRef90 H9JYS2 UniRef90-B4VP88 UniRef90-JOXGW7 UniRef90 UPIO00375A25A UniRef90_Q6V1X1-5 UniRef90-D1A9K8 UniRef90_UPIOO0316416B UniRef90_UPI000302EA45 UniRef90-F4KVP7
UniRef90_W5WBE4
UniRef90-G2NFJ0 UniRef90_UPI00035FC59C UniRef90_D6DAU5 UniRef90_D5MT79 UniRef90-S7RLI7 UniRef90-E8JIW0 UniRef90_E4YP69 UniRef90_K1RE36 UniRef90-F4X388 UniRef90- UPIOO04757712 UniRef90-H2BWB8 UniRef90_E7C5X4 UniRef90-14VPG6 UniRef90 ${ }^{-}$TOIZJ8 UniRef90_UPI0004026A96 UniRef90_Q82lI9 UniRef90 F3NMJ5 UniRef90-F9Z585 UniRef90-D6WD50 UniRef90_G1RSG9 UniRef90 Q01TV4 UniRef90_UPIO003486AB6 UniRef90-A0A023GC20 UniRef90 K9QSN3 UniRef90_UPI0002000B53 UniRef90-W2TIB4 UniRef90-W2UJH9 UniRef90 ${ }^{-}$W0A486 UniRef90_UPI00036BE8EA UniRef90_F4XNH8 UniRef90-A4FK92 UniRef90-W4H355 UniRef90-W8BNE4 UniRef90_UPI00040D9A78 UniRef90_D6TQG2 UniRef90_R9FAC9 UniRef90_S3ZTJO UniRef90_G7XTK0
UniRef90_UPI0003AAD8D8 UniRef90-Q0REB4 UniRef90-T1AA99 UniRef90-T0Q7U5 UniRef90_Q54U01
 TGKEIKTHTGHRNSVNDTSFSPDGKMSGDNTVKDWDTTTG GGW AAVFGFTVTPRGLMVVANEGRAEERHVYRVPLRGG TGQSVMDPLKGHNGRVTSVAFSPNGRHVVSGSWTVRVWDA GDWEVSEKDWVDEVRRLVYF IGLKDTPLERHLYVVSMDRP AVLDIGESDVLVSAAAG A DSAEPETGEDHVYRVN GDYLVRE I HIDESERYVGEYYDDQDPYHRHLIRVGIDDG GDYEVFDPELSNNKKYWYLTTSKEG PDVRHFYKMPVMGG $G D L Q V R A V L D V R D D D V L Y T A S A \quad D D P T Q V H V Y A G D H$ $G E W L V R S V D Y V D E A K R Q \square W \square K V F G A V P G Q D P Y Y A \quad H \square A R$
GEWNVRSVESVDEEKRQDWDKAFGAVECQGPYYAQDARDN GQSVMNPLKGHDHYVNSVAFSPNGRHVSGSRDKTIIVWDA G DDRS I QE DQWTNS GDHFKYDDKGDTKLARTS LKGEVTLL LDGAEVGAA

FSPDGKVIAFQDEKYQTLTVDI GEWEIANFALDSANGKTYFTANIAHPAQRHVYKVALDGG EEYHHVEGNWVNEGTKLVYFQGTRDTPLEHHLYVVSYESP GE WVVRKVERVDWDWLTVYGVVPDQDPYYAHLARVNGDGS

GG $\quad \square$ NPHFADDNSRVYFTESVGGTPYETQLSSVNLQGN AVLDVTEDSALISASAGPGAADPE LGEVHVYRVN GNWEQGSKVWVDVRRGLVFFQGTMDSPLEHHLYVVSYESP SQDFEFYPAFSSDGKHLVYSTWSDDSYGALYKLDIRRKNA

GRFVVTE\|VSWDQKKSYYY DAT TEEESAVQHLYRDSTKGT


A Q LHVRAVLDVTADDVLVSASAGEEEDGETHVYRVN
GEWEVLGRHGVDEVRRLVYFEGTKDSPLEHHLYVVSYVNP TGQTLHTLHGHTGPIWD LA WHPNGHHLATASHDGTIHDW GQSVMDPLKGHDHHVTSVAFSPDGRHVSGSADNTVRVWDA

 $A V L D V G E S D I L V S A T A G E G A T D P E T D P G Q S H V Y R V D A Q G V$ GHTDWVGSLGWSPDGTTLATGSTDDYTVRLWDR
\D WTVT DLDNFLDTKNNYTYFTAARGKETKRHVYRDKTDPT GDWENQKQIWVDEKRDVVYFVALKDSVLETHLYAVSYSKP GDYEVLGK IWVDEVNSUVYFCGLREGPLEQHVYAVSLRRP
 TEDGSVDDPVWSPNATRIAFV SDRTGDREDYSIDADGG

DAALDADPAWSPDGQS VFSSDRVG GLPQLWDRDLKTG GGLQVRSLGVEGDSILFTA SEEPTEVHLYSLDGGDV $P Q L H V R A V L D V T A D D V L V A A S A G E A A P G E V H V Y R V N$ AVLDVSADDVLVSAGAG ARAAEPEDGEVHVYRVN GWYNVSSPNFSKDGKYGVFVSARTFNPTYSSTEWNHVYNN GEWEVLA QNWVDYERQLVYFMGLKETPDEKHLYVVSLRRP GE WEHGSKDWVNEETKLVYFQGTKDTPLEHHLYVVSYEAA GKWEVLGVRQSKDK SRFYLTASADGPFDQFLYEMPGDGG GDDVYVRAVVGVDGDRVLFSGSPAGCPGDQSLWADTRAG GHTHWVFS LS WS PD GQMLASTS GDQ

TARLWDA
GDFDVVELEAYDRDND DMQAWECVSCKFSNCTYQVNHLTS GEFEILDVS $\quad$ SRNKKTFY TISNRVSPHEHHFYHLPVKGG
 SGQLI RTLQGHKSYVNGIAFSPDGNKILSRGDDNTVRLWD


 GHERRVRSVTFSPDGLVLASCSDDS
 GS WRWLGWD

A GLEVREVLGADGERVYFTG SGEPTERHVWVYDPEGG $G P F V V S G V T V I D E T E R S A V L S V R G F D D T M D P Y Y V Q Y V R D N$ NNWMVSSDDHIDEKRKLVYFTGTKDTCLEQHLYVTRFDKP

UniRef90 UPIo0047D87C5 UniRef90-B2IXC4 UniRef90-UPIOOO47C0387 UniRef90_B0D207
UniRef90_V5HJJ3
UniRef90-B5H9Y9
UniRef90-D5BDW4
UniRef90 UPI0003F8633A
UniRef90-Q0V1C5 UniRef90- UPIO00382E893 UniRef90 U1HS50 UniRef90-B0D1L8 UniRef90-UPIO0047DOFC4 UniRef90 UPI00047C1CAE UniRef90- A0A024KAP2
UniRef90-M4АНLO
UniRef90-Q2HCS9
UniRef90-UPI00040C69AC UniRef90-E2SE51 Uninefefo-F5ZFR2 2 UniRef90- S4RIM0 UniRef90_UPIO004716E02 UniRef90-E4YDW0 UniRef90-H9JYS2 UniRef90-B4VP88 Uniinefol-JOXGW7 UniRef90_L7UOP6 UniRef90 UPI000375A25A UniRef90-Q6V1×1-5 UniRef90-D1A9K8 UniRef90-BODWE2 UniRef90 UPI000316416B UniRef90_UPIO00302EA45 UniRef90-F4KVP7
UniRef90 W5WBE4
UniRef90-G2NFJO UniRef90-UPI00035FC59C UniRef90_D6DAU5 UniRef90-D5MT79 UniRef90-S7RLI7 UniRef90-E8JIWO UniRet90 E4YP69 UniRef90-K1RE36
UniRef90 F4X388 UniRef90 ${ }^{-}$K7RQ70 UniRef90- UPIO004757712 UniRef90-H2BWB8 UniRef90_E7C5X4
UniRef90_14VPG6 UniRef90 ${ }^{-}$TOIZJ8 UniRef90-UPIOOO4026A96 UniRef90_Q82119 UniRef90 F3NMJ5 UniRef90-F9Z585 UniRef90-D6WD50 UniRet90_G1RSG9 UniRef90 Q01TV4 UniRef90-UPIOOO3486AB6 UniRef90 A0A023GC20 UniRef90 K9QSN3 UniRef90-UPIO002000B53 UniRef90-W2TIB4 UniRef90-W2UJH9 UniRef90 ${ }^{-}$W0A486 UniRef90-UP100036BE8EA UniRet90_F4XNH8 UniRef90 A4FK92 UniRef90-W4H355 UniRef90-W8BNE4 UniRef90-UPI00040D9A78 UniRef90-D6TQG2 UniRef90-R9FAC9 UniRef90_S3ZTJO
UniRef90-G7XTKO
UniRef90 UPI0003AAD8D8 UniRef90-Q0REB4 UniRef90-T1AA99
UniRef90 UPIO0029A40E3 UniRef90-TOQ7U5 UniRef90-Q54U01

N Fivolt
410
 KELKTLTG HTNSVNGLSFSPDGKMLA SASGDKT QTGQSVMDPLKGHNGRVTSVAFSPNGRHAVVLFSGDWDKS LQVTRLTTTGY SHTIYMNKDLSMFV ELGVERVSDGPGVHAAV RGGGVTVLASSRTDVSG EVISLTDGD MEKLTNMTGNNQVYGSPDEKYMAIYYSYSNKPW QLSTVDGVHSATRSGDVVVLTSWSLDWSGPR VNFDGSDFKILTEGDGSHSWTFSEDRTTFTDTWSRMDMAA

FDGSDFTL LTTSGDGTHTWTWGPDRKYLIDTWSRVDLAP QTGQSVMDPLKGHDHYVTSVAFSPDGRHIV SGSYDKT AENLGGTSTGRPYPGGNYSVANNGHIAY ASGKVTKVLGGGAFSVPGKVSWSADGKTLALAVSGNDRNL D VTQDTQAAGIHVPAYAPAFDLLADIFSDDMTP GDVVRDTKPGFSHCC DFMLLTSGD
QRSRITQQT GTHSWTMFSTNRYFIDTWSRUDQLPP
GAHETVSPDETKLAVRYSQSNVPW
DKRTHLYGADDVSEYKLSHDKKWVAFVYQFKTFVTPF ELGVERVSQEPGVHSAV RAGDVTVLVSATLDHPG GEVVRLTM KPGYSHTCTLSQNFDMFVTQFSNVENPP KPARLTADKGF YTEPTFSPNGKY $\square V Y S K D G G N N H M$
SKPKCLTCETDRNRCLYNTAKFSTDHSNYVLTCAGPGVPD


ELGVERVSREPGVHTAVRS GDVTVLVSAEDHRPG GEVTRLTDRGY SHSCCISQHCDFFISKYSNQKNPH DTTTGQTLHTLHGHTDWVSALAWHPNGHHLATASRDGA QTGQSVMDP LKGHDHYVTSVAFSPDGRQUV SGSADKT DSRGGKCLQVLQGHTYWVEAVWSPDGQLLLASASSDQ KLEKDTTLK GGNEVSLSPDESTLADRYSYSNQPW RRLTEAPGVHSLARGGDVTVHVETGMDHF ELGVERVSEGPGVHTAV RAGGVTVMVSSSLERPG RDGKCLNTLHGHTNMDFSVSWSPDGKULA SGSRDQM

KTPECVTCSLDDEDGGQNSPSRTECTMRFFANCRGDKRPQ SEPVRLTGPGY RPGYSHAVSQSSDCSSFVSVYSSARETT LE TRLLT RPGYSYNSIYFNKECTMLVTVYSS DKTDP


DFKRTLTFCKASGCF पTVDSRLHPYNENRAYSWTGPAHPH EMVKITS RKGGHEVTLSPDEKQLADRYSYTNKPW VVADDLAGGGLDRPYTGGSFSVS DGGTIAYTSSDPTRPA VGTAPVTYAGEGKSYVNDTAFAASGDLVVLSSATPDQPG TGSGQLDYADEGHKSYVNDПAFSPDGKRIL SSSHDHS ERIVRSS RADGFHRPDEVHSATRCAGEVVVVATGSMDEPR NKVALTSGEWEVLHRNDW VDKAQQLVYFI GLRDTPLEKH NTGECLK TFRGHANWLTSVADSPSCQMLA SGSDDHT GKCVRI FKGHDNWI WSVAFSPDGSCLT SGGDDNS TRTEMSFPGADGPSGVHSGLLRGD GSPRTGEPERDSEGPGVHTAAV GGDTVVLDSRTPDGHT SPDVRDQHTLEGHERGVYTVIFSPDGRWLA SGSDDKT

GPGGAGAFRRLSSGPGVHTAAVGGDA LSTRALT RLTMADATHDPRFSPDKSVYDDRYSRDDDPP


|  | 450460 |
| :---: | :---: |
| UniRef90_UPI00047D87C5 | E L L Y $\mid$ L $\mathrm{K}^{\text {K D N }}$ |
| UniRef90_B2IXC4 | V K L W T T T G K E $\square \mathrm{K}$ T LT |
| UniRef90_UPI00047C0387 |  |
| UniRef90_B0D207 | VR】WD A Q T G Q S V |
| UniRef90_V5HJJ3 |  |
| UniRef90_B5H9Y9 | A LVQVL R D G K QVA VVA S H A E |
| UniRef90_M5U4Z0 | V EL R R T K D G S L V A TLA E |
| UniRef90_D5BDW4 | E L Y L K K T G K |
| UniRef90_UPI0003F8633A | V Q V L R |
| UniRef90_Q0V1C5 | $1 \mathrm{~T} V$ R R D A |
| UniRef90_UPI000382E893 |  |
| UniRef90_U1HS50 | $K S V L R N A T G E Q V V A L E E N N$ |
| UniRef90_B0D1L8 | VRVWD A K T G Q S V |
| UniRef90_UPI00047D0FC4 |  |
| UniRef90_UPI00047C1CAE | $\square E L V D V A T G K$ |
| UniRef90_A0A024KAP2 |  |
| UniRef90-M4AHLO | CVVHLY $\quad$ K LTT S L E D |
| UniRef90_Q2HCS9 | VTA L R D A S G A ELA LLE A DAT A E L LA E |
| UniRef90_UPI00040C69AC | ELIV VM D N P D A N K S I N S E Q VT R S T |
| UniRef90 E2SE51 |  |
| UniRef90_F5ZFR2 | V E NGKK K V T 1 |
| UniRef90_S3ZQF2 | SRVSVLRD G K QVA TVA S H A Q |
| UniRef90_S4RIM0 | C V HL |
| UniRef90_UPI0004716E02 | G Y A H G K Q Q G |
| UniRef90_E4YDW0 |  |
| UniRef90_H9JYS2 | $\square \mathrm{I}$ IT N R N S T K M L T WE A N E A V S E I I E |
| UniRef90_B4VP88 | $V \mathrm{~K}$ LWK P D GRLI G T L E |
| UniRef90_J0XGW7 | A A TL |
| UniRef90_L7U0P6 |  |
| UniRef90_UPI000375A25A |  |
| UniRef90_Q6V1X1-5 | CVSLY |
| UniRef90_D1A9K8 | I R I W D $\square$ T S G T P L S T L |
| UniRef90_B0DWE2 | V R V W A Q T G Q S V M D |
| UniRef90_UPI000316416B | I R L WD A R T GECLINAL |
| UniRef90_UPI000302EA45 |  |
| UniRef90_F4KVP7 | EL Y W |
| UniRef90 W5WBE4 |  |
| UniRef90_G2NFJ0 | $T A V R V L R D G E R \square A T I A N H A Q$ |
| UniRef90_UPI00035FC59C | VKLWD T R D G K CL N T L Q G H K S $\square$ Y T VA |
| UniRef90 D6DAU5 |  |
| UniRef90_D5MT79 |  |
| UniRef90_S7RLI7 |  |
| UniRef90_E8JIW0 |  |
| UniRef90_E4YP69 | T H L S R K D Q D $\square$ E Y D I VEE D N E A LQ A T LD K M |
| UniRef90_K1RE36 | $S C V V Y$ K $\quad$ L L H D N R |
| UniRef90_F4X388 |  |
| UniRef90_K7RQ70 |  |
| UniRef90_UPI0004757712 |  |
| UniRef90_H2BWB8 | A D L A V G S K G N T R V L T N VNE D L |
| UniRef90_E7C5X4 | LY R MERDGDEVT RLLT ENE D |
| UniRef90-I4VPG6 |  |
| UniRef90-TOIZJ8 | VCVVD VA T G K V T R |
| UniRef90_UPI0004026A96 |  |
| UniRef90_Q82II9 | $T \mathrm{Q} V \mathrm{Q} \mathrm{V} \mathrm{L}$ R E G K R A A T V |
| UniRef90_F3NMJ5 | S R A QVLRE GKPVVTLAS Y A E |
| UniRef90_F9Z585 |  |
| UniRef90_D6WD50 | V T L |
| UniRef90_G1RSG9 | CVVHVY K LS G |
| UniRef90_Q01TV4 |  |
| UniRef90_UPI0003486AB6 | VR T F V V S N |
| UniRef90_A0A023GC20 | S S AVYWLS HSE |
| UniRef90_K9QSN3 | $\square \mathrm{K}$ LWD $\square \mathrm{K}$ T G K Y $\square \mathrm{K}$ T L |
| UniRef90_UPI0002000B53 |  |
| UniRef90-W2TIB4 | Y Y LG D I IE G K T E N L I E |
| UniRef90-W2UJH9 |  |
| UniRef90_W0A486 | $D \nabla Y V \quad G G R R \square T R L N D T L M A G K A M A R V E$ |
| UniRef90_UPI00036BE8EA | $R E V T V L T N G K W V G E I G W N A E$ |
| UniRef90_F4XNH8 | LRLWWDTD S G QLI R T L Q G H K S Y VND |
| UniRef90_A4FK92 |  |
| UniRef90_W4H355 | I ELR R SVVD G S L V CVLE N Y K P LQ D Q VQ |
| UniRef90_W8BNE4 | L Y V V S L Q R P E HI R L L T E |
| UniRef90_UPI00040D9A78 | ARLWDVN T GQCI HV L E G H T D |
| UniRef90_D6TQG2 | VRLWDVAS GRLL WT |
| UniRef90_R9FAC9 |  |
| UniRef90_S3ZTJ0 | V T V L R A |
| UniRef90_G7XTK0 | $V R L W$ P P A G T L L H L |
| UniRef90_UPI0003AAD8D8 |  |
| UniRef90_Q0REB4 |  |
| UniRef90_T1AA99 |  |
| UniRef90_UPI00029A40E3 |  |
| UniRef90_T0Q7U5 | VE L R R T V V G A L L L H VE S A D $\square$ A A L L A |

VKLWDTTTGKEDKT LT
VRDWDA Q T GQS $V$
$A L V Q V L R D G K Q V A V V A S H A E$
VELRRTKDGSLVATLAE VLYKKTGK
ITVRRDA
$K S V L R N A T G E Q V V A D E E N N$ VRVWDAKTGQSV
$\square \mathrm{E} \| \mathrm{V} \mathrm{D}$ VATGK


GYAHGKQQG
$\square S T Y$ NRNSTKMD T WEANEA VSE $\square$ I A E AATL

SRVRVLRGGE QVAE $\square A S Y A E$
CRIWD TT S GTPLSTL
VRVWDAQTGQSVMD
 ELY W

TAVRVLRDGERDATIANHAQ VKLWDTRDGKCLNTLQGHKS $\square$ IYTVA

THLSRKDQD $\square E$ Y D I VEDNEALQATLDKM ${ }_{\mathrm{T}}^{\mathrm{S} C V \mathrm{~V} Y} \quad \mathrm{KILHDNDR}$

A D DAVGSKGNTRVLTNVNEDL
VCVVDVATGKVTR
T QVQVLREGKRAATV
S RAQVLREGKPVVTLASYAE

CVHVYK L S G
VRTFVVSN
$\square K L W D \square K T G K Y \square K T L$
Y Y $\square G D \square I E G K T E N \square D E$
DVYV GGRRLTRDNDTLMAGKAMARDE

TRFRVLRGTREVAEV
RELRRSVDGSLVCVLENYKPLQDQVQ
LYVVSLQRPEHI RLLTE
ARLWDVNTGQCIHVLEGHTD
$\mathrm{V} T \mathrm{~V}$ LR A
VRLWDPATGTLLH L L


```
sol0
jpssm
```

sol0
jhmm
jpssm
$\substack{\text { sol0 } \\ \text { jhmm } \\ \text { jpssm }}$
$\longrightarrow$



[^0]:    $P \square A F \square P W N P N A F V M Q S Q K D G Y N H Y \square M N T Q K M \square K Q \square T$ TVNNGKEMI WMSERDNWNHLYLYDRTGTVKNQITK DT F LSWNPDQFI LQSDKDGYNHLYLFSTKGTLLKQLTK KRYRYDLKKSNEII WASERDGWNHLYLYDITGKVKNQITK QUFLRWDETKFIYWSQRDGYHHLYLMDTQKPQAGEWTQ KVSWRYLPESNEFVWYSERDNWGQLYLYDTTGKLKNQTTH IV F FLPWDDTKFIYQSQRDGYNHLYLFDTRTCKVKQLTK GANDNVLSSGREAI WYSERDGWGHLYLYDRTGRVKRHLTR KHARQDLDDGAQIVWASERDGWEHLYLYDRSGEVDRQITR

