## QUERY

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 KMVALTMFDDGPNPVYTPQULNVLAKYHAKATFFVIGAHV $K V V A L T F D D G P N P I D T P K I$ MEILKEKKVRATFFVLGGQV


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 KRIALTFDDGPDPRFSNDVLDVLKQYNVPATFFVVLGSKA KFVALTFDDGPSNNRDNDI I NVLESYEAKATFFVLGERDN
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 LM H P QL V VN RIVY D E GHE H


 RRFPHLI QR I KMDGHEI G $\square H G Y H H R L P W L L G P R T V A S D D K$

 K E Y P Q I AQQVVVLD GHAVANHTWSHRY RRMSPADAARE I E EF PEEVVERTATEGHEVANHTWAHADLT GLSAE GVRKDLLE E K H P E L V K R VVK E G H T V
 A NHTWHHWYHRL S PKAAAYEI D ERYPAKVVKK, K K K K GHE


SHSK
K S HQELVKRTVREGHE

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 K Y H P E V V K E l A R A GHV L

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 M WS WD WK S P G V H R $\quad$ VN TVVLK GV K A G N I V L F H D G G GN R A Q T

 $V$ DTND WRYRTSAPVVQQNVSTYAHD GAII L MHDDHQW VTMENHAAKTPKEMADRVLRKVGPGYIILLHDGRLDRSK T SGDAERHSPQASGQVKNVLKGAKPGSIVLMHDGGGNRART LWS $\square D W R H P G A Q A D H D A V L N H A Y N G A V V L M H D G G G N R D Q D$
 GYDWA GCDRDP QKIVVSNVLKD I R D GAI I L L H DVVQPEPBPD NWNVVWK GLS K E QV K D NI L S AVVK GS IVL QHAGGGDVGST

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 MS WD WIRR R A T P E S I C R K V L G RLLR D G A $V D P Q D W R Y R D A D K V F K H V K A N V T D D S$
 A WD IID WQEDPP EVI AS RVVDNDHPGAI I LMHDGTGDRTNT

 | $V$ | $D$ | $S$ | $D$ | $W$ | $S$ | $K$ | $N$ | $A$ | $D$ | $A$ | $I$ | $N$ | $A$ | $R$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $K$ | $S$ | $T$ | $L$ | $Y$ | $E$ | $G$ | $S$ |  |  |  |  |  |  |  |
| $V$ | $L$ | $D$ | $W$ | $S$ | $S$ | $K$ | $N$ | $E$ | $T$ | $S$ | $I$ | $L$ | $T$ | $E$ | $V$ |
| $Q$ | $R$ | $Q$ | $V$ | $R$ | $S$ | $G$ | $S$ |  |  |  |  |  |  |  |  |

## V L LHD I H G E

LWNVDWNRLTGEQVAANVLANTGPGSIILMHSATGEGGTT




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 MI AFTFDDGPYYSVDSRILDTLQAYGGRATFFIVGSRVN KLI A TF FDGPDPTYTPQVLNLLRQYKAEATFFMIGGFRI
 KTVALTFDDGPHPDYTPEILDTLEQYNMKGTFY VMGAHA KRVALTFDDGPNPEYTEKLLDGLKDREVKATFF LLGNQV KKIALTFDDGPSSTTTPEILATLKKDQCQSDGF CTWKRSL KQVALSFDAAWGNEDTRKILDILKKYKDNVTFFMTGGWVE KVVSLTFDTAWGNGQTEDILNILEQYEVK STFFVTGEWA RKAALTFDDVPDPRYTGKVLDVLAKYRVQGTFFVVGGSLA KK円ALTFDDGPKAEVTLAILNSLKKYNAHATFF $\quad \mathrm{L} \mathrm{LGQEA}$ KNIATTFDDGPHPTLTPKLLDILKARNVKATFYVLGPLVE KCVALTFDAGPSENTNRLLDLKREKAHATFFMLGKNHI MVAFTFDDGPNPEYTKRILDVLNANYSHATFFVVGNNA KLI ALTFDDGPSWN TSKLLDVLAKHKVKATFFWLGREME KVIALTFDDGPDPLETDGILEVLHEYQAK CTFFAIGKRII KTVALTFDDGPDPTWTPKVLEVLERHDVPATFFVVGGMA KRVAI SFDDGPSSELTPKVLDILKRYGVHATFY IIMGKHV KQVILTFDDGPDPTYTPQVLDIKKREKVPAVFFVI GDQGE KYIALTFDDGPNTVTTPMVLDVLEKHSAVGTFFLVGNNGN RVVALTFDDGPWTETAQILDILRKHDARATFFVVGSHA KIALTFDDGPDDYYTPKILDLLEDKKVPATFFVVVGQQI KAl AFTFDDGPNPLYTPQVLDIFASCQGKATFFMI GQQIE $V$ VLSFDDGPNPVWTPRILDILNAEGVKAVFFVV GSQA REIALTFDDAPDDIFTPKILDILKEKKVKATFF KRVALTFDDGPDETFTPLVLDELKKAGVKATFFJVVGNR KVVYITFDDGPSPVYTPKVLKVLAQYGVHATFFEVGQNVA KVVALTFDDGPDPAGAGPLLDTLAEAGVPATFYLTGRELA KVVALTYDDGPNPPYTNQLLEILERHQIKATFFVVGKTV RIVALTFDDGPSPVYTPKILTILKDNNVHATFFVLIGSEA KLIALTFDDGPSSANTGRLLDGLKARGAHVSFFMTGQNA KKLALTFDDSWGEERTGPILDILEKKGVKKATFFLSSPWS KLI ALTFDDGPDPTWTPRILDQLEAAHIPATFFVI GENA KVIALTFDDGPVAKQTEELLDVLADNGAKATFFTI GAQDT KVIALTFDDGPNPATNQLDSLKKKGHATFF MVALTFDDGPHPKYTAEIVEALKKNDARATFF AMTFDDGPHUQNTPRLLDMLKERKIHATFFMVGECV RRIVLTFDDGPSPALTPNFLDVLRSKGVKGTFFMIGQQVA KEI ALTFDDGPDQLWTPRVLDULAHYQVKATFF CVGQMV KI ALTFDDGPHAVYTPKLLDGLKKRGIHATFF LIGKNU RVIALTFDDGPHPVHTPALLEVLRRHGVQATFFVVGENA KLIALTFDDSWGDKRTAPILDILQQKGLQKATFFLSSPWS LVLTFDDGPDPVWTPKVLDALDRYDAHAVFFVT GTMA KQVALTFDDGPSPETTERLLDTLKEENVKATFF VLGNAA KTIALTFDDGPNPTWTPQVLAILEKYDVPATFFLVGSMVS RMLALTFDDGPDPRFSEDVLNVLSEYNVPATFFVVLGSRA LVLTFDDGPDPQWTPKVLDVLKKHHAHAVFFVTGGTMT RTVALTFDDGPDPTWTPRILDVLRSHGAVATFCQIGNVMA RVVALTFDDGPTD HTPEVLELLASRNVPATFYLN GSEA CVALTFDDGPGP YTAELLDDLKRENARATFFVVGGVNA KKVALTFDDGPHPTNTLAVLDLLAKYHAKGTFFMIGTSV KVI ALSFDDGPDQRFTPLILNLLNKYDVKATFFVLLGTV M A A TEDDGP CVALTFDDGPNKQLTPKLLDVLQRNAAPATFFGQGQFVN KCVALTFDDGPSPYTDRLLRVLDADARATFFLIGNKVA 1 ALTFDDGPDNDYTPKILDILKKYNVRATFF LLMGSRA KKVALSFDAAWGNDDTASLLATLKKHKVKATFFMTGGWDE RAVALTFDDGPDGRTTPAILDTLKKNDIKATFF VVGTQV KVVALTVDDGPHNMVTPQLLAVLKEKNAK VTFFVLGEHA KI ALTFDDGPHPSSTPVLLDGLAGRNVK VTFFVIGENV
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## A




 QWCPS MLIKR V VKE GHAL
 EK Y P DV A K R I V R E G H A V

 EKYPD T L R L I V S K GHE I ERFP QVTREII R Q GSVI ANHGYGHLNFFHAGVQRMWMDAE K RNPSLVVKRAYEEGHQI CSHTYDHALLTKLSSNSEDRS QLDD ETHPEIVKRIKDMGYEI




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 G G S P A A L V $\operatorname{L}$ K A

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$L$
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$R$











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## a

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## N

## N

## D <br> D



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## K

## K K K

YL K V V Y

VIDDGPF TYTSQLLDTLAANNVKAT TFDCGYENGNTPLI DVLKKYDVPAIFF VTGHFM KWI ALTFDVNWERDNTSKIVGVLTKNDVKATFFVMGKWVA KII YLTFDAGYENGNTVPI LDALKKHHVPATFFVVGNFL

$K$
$K$
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$K$ KEVYLT



 K EVVILT F D D GPAP GKTER L L A T L D K F GVVKA A F $K \vee \vee Y \mathrm{~T}$ | K | I | V | Y | L |
| :--- | :--- | :--- | :--- | :--- |
| K | C | V | Y | L |
| K | V | I | Y | L |
| K | V | A | L |  |



 M I A

## $\mathrm{T} \mid \mathrm{I}, \underset{\mathrm{N}}{\mathrm{Y}} \mathrm{L}$

 1 KTLA TF DDGP NTYTKT IVDTLDKAGGKATFFFNGKNYN AI T F D D GPGP H TPRLLGGLRERNDKATFFVLGSRVA
 $R F V A L T F D D G P D P A Y T P Q L L D L L A Q H G A V A T F C D M V G T G V$ KTIYLTF DDGPAGKVTSDTLDLGKKECVPATFB
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$V$ FIMNCA WN A D D DD S L E T L K N N EVV H DTF F MVVGE WV D

K

TAA L TVALTFDDGPY TWTNNLVDLL KITLTF DQGYENGY K
 TVVYLTFDDGP $\square P E V T P W V L Q Q L K Q H N A Q A T F$






 | $V T R$ | $P$ |
| :---: | :---: |
| $L I$ | $G$ |
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 V Y V D WN A ITT G D S T K N H E N L T P N Q K N E V V L L M H D S S S K K N V $V T R D Y S P H M T S Q G V F N V V K R Y T R N G S I I V F H D S L K A G D R M$


 $K \| Y$ D WN L S L S D G I D Y N T S V D D CVVNPNKI F DTDD WRH Q D D IAA QA EA KF SNVN GN P G H I V L A H D $\square H A D V$ M WS IID WK K P GVVK Y IV N K VI I V N A G G G K I V L M H P T




 Q WN L D T LDD Y T G E E M WN R L K N K K L D G G A I I L S H N G






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 KTIVLTFDDGPSAELTPQFLDLLQRYDAKAVFFCLGEQV KVAYITDDDGPSK YTNQLLDILDTNGIKATFFMIDDGNK KAVA $\backslash$ TFDMGYEEGATPR\|LDTLAAHNAKATFFLA GHWV MDKYDAKATFFLMGTWDD $K V L Y T F D D G P T P D T N W T D D M D D E Q A K A T F F C I G N N I$ KTVALTFDDGPY LYTKDVVTTLSNSNAKGTFFFNGKNFG KVVYLTFDDGPSPN TPRYIDILNENGVKATFFVKNGGKY
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  V Y L

A F T
$K \vee V A$ T F D D GPS R N T P QLLDML NQYG P A T F F KVIYLTFDAGYENGNTPALLEALKKHDASAAF
 KVVVLTEDDGPSETVTPQLLDALKSENVHATF
 KLVYLTFDDGPSPNNTNRILNVLKKNDVRASFFVVGKNV KMVAFMDNVAWGNEYDEPILSTLREKQVKATFFFDGSWLK KVI Y L T F DEGYENGYTPKI L DILLKSNNVSAAFFVTTPYMK
F D IA G GS S N IY DIL DI L D K Y NVVKAS F KIMLTEDDGPDDRYDHDLEEVCDONQVKATF KTVYLTFDDGPSAVTT RLLDVLKSADVKATFFMLSPRMN K T L Y M M F D D D G P S A T T S E L L
 KAL Y L T F D D GPSPTHTPALLELLRRHDAKATFF LI GREA



 | $K$ | $A$ | $L$ | $T$ | $F$ | $D$ | $D$ | $G$ | $P$ | $A$ | $L$ | $D$ | $T$ | $T$ | $D$ | $Q$ | $A$ | $L$ | $A$ | $L$ | $L$ | $D$ | $K$ | $Y$ | $H$ | $V$ | $K$ | $A$ | $T$ | $F$ | $F$ | $M$ | $V$ |
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 K PI A L T F D D G P DA QWT P QI L S A L A A H R A R A T F F VI G E E V A





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 G

K Y P DI F R MVI E H G H R I
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 E Q Q P K L V Q Q I I E E G H T
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 QTAP T E LV Q R M A D E G H L V G N H T E H H W D M S R I A D T


 K Y P E II F E E V R R R G H R L G NHT F N H I S G H L H G DS S Y VR N V A
 EAYPDLFRRIVDAGHKVGNHTYSHRKGWGMSLERYMEDVD K  E LYP P G V VR R I A I E GHE
 K S E P E L V E R MA D E GHUI GN H S Y H HP D T I V K K E K M K E E L E S
 T Y H P E I L K QVVA A A GH TIIGA H T WS HA N NK K L S E D Q R K D E IVE
 Q K Y P E V L R R M K T E G H L L A N H T F S H Q P R N L L H T Q R L I D E I M


 DHPELVKRMVEEGHLV
 N N $\quad$ E E K N R Q $\quad$ V D K L L G G G K V G G L H S W Q H K N A M L Y S Y S Y T K R D F E
 EFK Q AVKRAEKEGHALGLHGVTHNNRFYQTPTSPLKEMQ $R$ Y P A E V K R IV V E G N G L GLLH G M T H R D K F Y A S P S A A L A E M S



 EKFPSLAKRTVKEGHEIANHSYSHPDLTKLSSRDIMKEFK





 LNP E IVVKRE F DE GHY LAASHGY SHVVY QDYA SP Q S V L D DE YN
 Y N N YMKEAANE GHTIGGLHTYTHDYSTYSSKDAYFE DLQ E E N E E S L L K R I V
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 KGQEVFRKLGLKNTKYLRAPTGHFDKRLLEISQRFDYTVV
 FANNLL HTDLDRRPYGQITPTQLSEHYNLDMWDV
 EAENILSKY TVRPKWLRPGGGCNKNSYKLCKSMVHQNNL
 TCQETFLNDTGEVSNLIRVPYGSKPYMPEKSHEADSKNGY

 EDQGLI ANII GESPKLTRPPYGSSPGLNEALRNKVVESGL

 A PQKAYMRSDPAQPTMFRFPYGTCNPASLKAVNDAGMLALI



 KSED DFREVLGDESRDFRPPYGSDTMAQURRSHQUI MWDV QCSDAMTKKDGYDRWLIRFPEGSFAVRNKPGFTEAIASSG
 RNNQVLKS LIGPDFRMVRFPGGHMTWERLQKDYHQVDWNV RAQRVVYDLTGQDPRYFRPPFGEVDGRVAWLASQAALTTI TTNALVASII NKEMILERPPYGVTNPAITKAIKHTKHKVI



 RTITTA 1 QDAGAPQPALWRPPYGRVDAPALMVGAAERNL DCAKTMKK LTGYNMDFDRPPEGVYSQRALKVDKDMWS DA Y RANEYL
RTETALQEAAGDR
KCAEILSQKY IDPRTKVRAPGGTFGNFDQSYFDAMKGAGY
FANDLISQ RTNDALDAAAPDR $\square A Y Y R Q P G G A W T P S V M S A C A D L S L T P L$
 ETELAYQEATGKPPNFFRFPY LTNFNEENLSWLSKWGYHSIV $R E N A V A E V S D Q E E D K Y L R P P R G M F S E K T$
$L$ KGFAAVKWALGANPPFFRFPADQHPPEMVTYLGTRNDAIF KTNQULKDVLLGQDFRAVRFPGGQMTWGKKDPKGVEKMDAA
$R$ K LHNYI KDTFGYEMTLFRPPMGEYSERTLALAQNGGYQSV KCQKSI NKVTGKNCTFVRMPGGSDNEVLASIGRNLLKKGV GTNKEI EQVLGVTSKYFAPPSGDYDSRVVSEAWKQKMLTV
 KAMEEMHRLTGQEPVYVRAPWGGVNDSFLFWCHFKISWSA TTSKKDESITGEKTTMYRPPFGEFDKNSFEVCQELGYKAV
 KEQKMVQDLIGFTPHLIRAPYGSSPQIGEKFRGDDAAAGF EARDTLQDITGYKTDLVRTPYGSKPSLTASQ TRNLEKDGF GDNAVLQKI AGTGTVGIRPPYGSFRDKVLVQGYHLWDWNV

 KQQEFIKDTTGSCCTVFRFPGGSHNDFTANDTKKLNEQGUV KTTRCFEKIIEKGSPLFRPPFGNWNKE LDEDGFPYT IHWN

 QAQN MKEVTGGHPNLVRCPYGSMPGLKQELRDKMVNVGM | $Q N D \\| L D R N I D G K S P V Y M R P P Y G S D N A L V L S A M A T W G Y W N L$ |
| :--- |
| $R K T Q E L K T Y G Q H P L L F R P P A G A T N P R L Q S V L L T E G L Q T V$ | GAGKLI TDVTGQPVTSYRPPYGALNSGVLSSVGLPAILWT RTDALLG

RCDRLLT GMRADVQHAYPHQSYLGFR NCITAI RNAIGMPDYNFRFPGGCDQRALRALSGLGVAV
 DANA LLLKTTGVQTRLI RTPYGSKPYMKDSYRNAMHQGEF N $\square$ S DMV EDVTGEK SMVI RFPGGSSNMMSAQYTPGMMQKGY
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UniRef90－UPI000472966A UniRef90－G5H7X4 UniRef90－R6UV94
UniRef90－B2V1A8 UniRef90＿UPI00037D60DA UniRef90＿L1P3W1 UniRef90－R1HN32 UniRef90＿UPI00047B618A UniRef90 BOTH72 UniRef90－F7MPV1 UniRef90－M7MMUZ UniRef90－A8P2Z8 UniRef90－J8Y016 UniRef90－R5MM90 UniRef90＿H2AFV8 UniRet90－A2QZC8 UniRef90－UPI00035E7B12 UniRef90＿U5ZKG8 UniRef90 Q46FF1 UniRef90－A0A023CTQ3 UniRef90－UPI00037CB373 UniRef90＿U6RUT9 UniRef90－UPI0004082F84 UniRef90－UPI00028979D8 UniRef90－G7M8E3 UniRef90－G1WL53 UniRef90－H6CRB1 UniRef90－S9QDL6 UniRef90＿UPI00040284DB UniRef90－F2AJX8 UniRef90－K1Y427 UniRef90－R7ITJ4 UniRef90－Q2QB46 UniRef90－R6LNZ8 UniRef90－M2ROLO UniRef90＿JONI11 UniRef90－R6DTL5 UniRef90－L1MJU9 UniRef90－E0IAV8 UniRef90－J2JFN7 UniRef90－D9SZF2 UniRef90＿R5CHZ1 UniRef90＿UPI00047A4D93 UniRef90＿UPIO003AAE681 UniRef90－R6GFH1 UniRef90－B1C5D4 UniRef90－UPI0003B719F4 UniRef90－K6SXE4 UniRef90－F3YOS9 UniRef90＿C0E909 UniRef90－UPIO003FCDD94 UniRef90－M1ZHSO UniRef90－D1BVJ6 UniRef90＿A5N221 UniRef90－A7GK60
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UniRef90＿F4NXC7 UniRef90－M1PAA9 UniRef90－UPI00037096F8 UniRef90－K6WDI3 UniRef90＿UPIO00470EF88 UniRef90－H2K5Y7 UniRef90＿R7IUQ5 UniRef90－G2H7W1
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 LS QDYNRRISPRLCLRNVTKHVKGGSIVVFHDSLKSYRNM LDTDDWSNKNADI ITQNIMQNVHDGSVILLHDIHDFSR KMYDWNVDSGDGANHSAAPSTFNNDSVVILLMMCGGYDSKNS



 I SEDA SGASHSQDLYANIAARRPDSILTNHETNDWTAH
 $\begin{array}{ll}C Y F D W N V S S G D N T V I E N C K K V P K S N T V V V L M H D S A V K N T T \\ V & \text { V }\end{array}$ TASDDTKDYNHNQSYDKFVTEDNNGGNLCAHDTKEQTVVT QWDVATGDPDPHESAERMVNEAKPGSIIVNH ANGRGWHT
 LWSCRSGDSSTEDLYNNTVRNTENGSIILCHDGHSGTHEA LGGDWNAKLGTMELFRRLRNSMKGGALIVLHDSGDTLGAD RVWDWT $⿴ 囗 ⿱ 一 一 厶 儿$ SLDWKYNKMPVDAKTNREVI LLHDIHP QS VTRDYSKKMRPEQVLANVKRYVRNGSIITTFHDSSWNNGNL LSGDYHPKADPEKILFETKKRTKAGSIIVFHDQQKTADML YHYDDWNALDGDAEHFKMETPQYHHVVILMHDA AAKK ST R $\square Y D W N D D N C D G L N P R T S P Y K L Y S R A I M L L D H C T D M N K N T$
 NFDDPSGDPTPKRMVDWVLKQASPGAVVVMHMNHK RFPT
 EVDWNALNGDAANGGNKSTKQADNVVIFLMHDTYK KETT
DSKDYFATTPVSVTQRTMDQLHKRGHIILMHDGH GWS DRSFDTDSNKVVIK DDKELHNGAIVLLHDRLPSASVT LWWDPERQPSTEEALKKMEGRLHNGAIVLLHAV FMWSDDTGDANGESVDKVIQNYPNPHLVLEHS A YVDWYQDPTAEQAFSKLIPRDHPGAVVLLHST P $\square$ DDDYEHDDPT LIQQYSKDVFKGNPASSQWLEDGHDDHEQT
$D \| L L W S E H T P T A Q L A R D V A D T A H A G S V I L C H D G R T Q P E G L L$

 TLF D WTVDSGDSVRINVHQSKDSHETIVLLHDSQSHAE S L SRDYSRSLS
L
 T GND


 DYVDWNVDSGDATAIVSVTDDI EDNVVLLMHDLDNKNTTT LWTVD WRKPSTEEMVTRIVRKASPGNLILMHPTKP
 HWPNDWKNPGVDQIVSSVSNHLRGGDVILLHAASDSALQT DGRDWRDERTPDHIMQKI TGLTKEGTIVLLHDSGGDPENT

 $\begin{array}{ll}K M W D W T T D S D D W N D P G Q P D K D H R D K E V I L M H E G & R E Q T \\ V Y W D W T D D S M D W K Y R N M E H S S S S R P N V I L M H D G & P A T\end{array}$ DSDDWKYKENSAKYYNTVMNQVHGNPVVLMHD
NTGDYLPNTQPEDILATILPKCQNGAIVLLHPTEP QKAT
 DTLDVQGREPAELAARLRRQPPRAGDVMLMHDDSDCCR



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UniRef90-UPI0002E170CO
UniRef90-UPI000409FA47
UniRef90-UPI000472966A
UniRef90 G5H7X4
UniRef90-R6UV94
UniRef90-B2V1A8
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UniRef90 L1P3W1
UniRef90-R1HN32
UniRef90 UPI00047B618A
UniRef90 B0TH72
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UniRef90-M7MMU3
UniRef90_A8P2Z
UniRef90- J8Y016
UniRef90-R5MM90
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FFLT GQNA
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 MVALTFDDGPYAPVGNR:MDCAEQYGGRVTFYVLGNRVNV RKVYLTFDDGPVPGVTDYVLEMLDKRKMKATFFMVGDNDR VALTFDDGPDPRWTPVVLDMLSRLGAKATFF VGGEAA VALTFDDGPDPVYTPQLLNILGSNNIPAAFFVVGEKA K 1 AYLTFDDGPSQDVTPKVLEVLNKNG\|KGTFFVLGSMVK RLAALTFDDGPSPGWTPALLDLLRDRQURATFCGLGSQA KLVAFTFDDGPDGTADDRI QKALHDNGCHATFFYIVGRDK
 KVVLLTEDDSWGETNAIPVLNVLKKHGVKATFFLSSASWA KVCYLTFDDGPGP HTNKLLDILKKYNVKATFFVTVGLR
 KSIYLTFDDGPDPKVTPWVLQQLSTYNAKATFFCTGENDK KYVYLTFDDGPSDKTPKVLQQLSDQNAKATFFCVGENDK VALTEDDGPDPASTPHFLDTLDRLDVRATFF VLGESA VALTFDDGPDPASTPRFLDVLDELGVRATFFLLGENVA $K \nabla V^{G}$

C

 RTAALTFDDGPYEDDSGKLLEKGAKGTFFFNGNNWGCIYD K IAYLTFDDGPSNNTHEILDTLKQYNПKATFFVLGSOV KALTFDDGPDPLHTPALLDLLAAHGVKASFFVIGDKVS KKLYLTFDEGYENGYTPQLDVLKEKQVSAVFFVTLPFVK K VALTEDDGPHKRYTEESA KQYGVPAVFFNVGRNLG KQFALTFDDGPS ELTWNLATRLHEEGUQATFFINGKNWE KKAA GNCAWDDRDNDML KKAA GINCANDDRDDLPMLSTLQQNGVHATEFLLGEWA KKVYLT円DTGGDGGDDDTLVKSLKDNDVKANFF KDIGLTDDDAPS QHTSELLKVLNENDAHATFFLIGSQMN KVAYLTFDDGPSETVTPQLLDILKSENVNATFFLIGKYVD KIAYLTYDDGPYNHYSDLLDULKSYGYQATFFITGNNNG KVAVLTFDDGPSPQDTRKVLAALAKECTKATFFMVGEMVA TVYTTFDDGPDPVVTPFVIKTLKGYNAPATF
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 K CND A ETLSDLYKETTGQMKKYYRMPGGYYSRETNLKMDYKTFFWSLL
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 RTQDLLTRLTGGLRPVLFRPPYGDTDASVGRLLAAHGLTEV
 T NQNLIA DVEDEYSKIVGKMPKFFRPPMGEYSEKSLAMTKNLGYKTVIV QTNQAVKQTVGDTPTDFRPMGGHTSQAVVDAGKKQGLSQU ATETLI KQYGVDPKPNFRYPYGGHNAYTDADGYRAWSWTA




 $\begin{array}{llllll}N T E K V & K S V L G D D Y N F F R F P G G S F G R P K E D K Y N Y M D W N C L D \\ A T N E A & R A A G D P G L P D R Y F R A P Y G A W G A S P Q V M T A L A W T\end{array}$
 KNEMALRNILGFDPTYMRPPYGCESDLADLGYHVVYFDLD QAKKVFNTLGUKHTPFDRVPTGNFNKNVLKVVHSFGHTVV KVQAIVEEVTGTVPQFFRPPHGAGNDYLRQMLYMTWSNGS

 $L$ C E Y E I H T A LD K E K EP F R P P Y G R L S K T L R K L L G Y K I V M W D V $K V Y D W V Y Q Q T G Y S P C L Y R F P G G S N N E E M G R R G F T H F D W N V$ RAVRAVHALTGRRPLWYRPPYGILTGGRWAAARRPVLWSA






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
















 E LHEDYMK D T F D Y E M S L Y R P P E GA F S E Q T LAA M V Q Q M WS F A Y


 $L S C Q N I H A A C G Q T P V L F R P P S G A Y N D L V I D C V H R S G C I P Y$
$Y T Q L I A R K L T G E M P R L F R P P Y V K K N N D V V D I G M L T V Q Y D ~$



 K N N A L L K E I L G K D F D T D R F P G GY WS WN GR QPMK D K M I E K G
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 LHEKDWHQDDWNALSGDAESGHKDKALI LMHDTYGKKEET DSEDWKNRNPDMTYKNVMTAGPYTAPIVLEHDAGGPRAS QYFDWNCDSTDDKLIANATSSQAKHDNGMHDTQDAKDTT MWS TDWQNPSPSVIVKRVMSKVHRGAMILMHPTDP
LGSVYPHDPQDSYPRVNARHMVRPGAMI CHD RRRST LWSIDWSNPGVNNDIDRVVKKAHNGAIVLMHPTHNRGGT IYPHDAQDTNWRLNARHTLSMLKPGRIIICHD RRSWT YFDVDTDDYNQDSPNQUQRSKDWFRGNI WLDDQHDTHEQT WSVRDWSRPGANVIVETVLTCDRPGGVILLRGGCPARERT MWT DDWQNPAPDQMARKIIDKSEPGSLVLMHPT
RTWDWTDDSNDWRYQKNPARTKRPVEVILTHD KKGT
MWS IDDQKPGPGTINRVLPNLNNGAIILIH ASAPMPQT RRGFDTRERNPQRVLERLVDGLAARDLLLLHDASAAKDAS DEVGWNSGTGNVIRQ⿴QGQPHIQSHDVILMHDSSGHGEST DWNVDSQDWNSTDABVQSVGRETNGQVILMHD WPANT DADSHEVPVGKDKRNVENQCKNKKDAVILMHDTY YKHFT IWDLDSGDSVGASVASQKSEYDRHPSTLLSDQHEVYETTA WGRDWRATATPDSVFGTVTAGLDGGDTVLLHDADCAWRAT

 MWTVDTBDWQKPQPAQRVLSKVHNGAML MMHTDP
TWDFDGGDSADDNKAHYDQUASEHPDTI LALQHEVYSSTA TWDFDGGDSADDNKAHYDQUASEHPDTI LADQHEVYSSTA LHDDWNSLTGDSEKANPTEEYLMNNLVVLMHDAQA KH WT ADWDPNNQMGYDKALERTCRFDHEGGGYLHAN SKDN

 QWDLDDQGLSAQEIEQRVRRQLAPGSDLELYAGMAEYS ASGDADENASPKEIADYVIDSVRPGSIVILHMNNPDLL
FWDWEPRKNGAEDPYNDIMNNLHDGNIILMHQGSPEN VYPHDAQDSSWRMNANHILSMVRPGAIIICHD RRSWT AEDGGRKNAAQLTQEADKTIGNREKALILMHDTYG KEET IEKLEEENYAYVDWNVTSGDASTPPAVILFHDSAARETT DSNDWRVRSSAPVIARVMAGLKARGGII LMHDTHKW YCNDDWNALNGDAEGKKKDATGALFGVVILMHDTYG KEET LTGDFDQSLSPETCLKRVLDATKPGAVVGHDSLKALERLT UniRef90 T4VYYo


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 VIA LTVNVDWGEEQDPKMLEDLEKDQAKATFFLTGGRWA KLMALTFDDGPSK YTDFLVYALSERNVPATFFIDGDNVV KVVYLTFDDGPGP YTAQLLDVLDKYNVKATFFVTNTRPD KKVYLTFDDGPGSQ TGKILDILKKNHVKATFFVTGKEDA VALT TDDGPDPDTTPQVLDILKAHGIQATFFCIAAKV KTVVLSFDDGPHREYTDEIVALLKRYDVPATFFEVGRNLG $K V A \mathcal{A} T F D D G P D P A S T P L F L D V L A E L D L R A T F F M V G G M L D$ KVVLVT TDDAPDK HSGEMAETLKSQNDPADFFVNGHFES KTVYLTFDDGPSAA TQKLLETLDEQDVKASFFMLEPNMK K 1 AYLTFDDGPNEYTEQILDVLKEYDAKATFFMLKPHM TAFDDGPDPAWTPLVLDILADAGLSATFFVLGEAA KTVFLTFDDGPNASTKEILRLLEKYDMKATFFMVEPNMK KVMYLTFDDGPS QNTQELLDLLDRFHVKATFFVTAESPD

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K

K
 VVYTFDDGPS ENTQKVLDTLDQYDAKATF
 KTVYLTFDDGPT VVTKKILEVLKEEEVTGTFFVTGQLV KRAYLTF D D G P S D Q T G E I L D I L L K E H N V K A T F F V I GRN E R RTVALTFDAGPRAARNPALI ATLIRSLKI PATVFMTGRWAE I ALTGDDGPDALVTPQVLEMLRDYDVKATFFMCGGNKA
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70
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 $\begin{array}{llll}E A E A V I & S R F T K H T E D Q F R \\ E A N A L I & K S K F F R P P H G W\end{array}$ $K \subset A Q Q V N S Q L F R P P Y G$ KNEAAL RNIMGGDPTYMRPDTGSLTKSLVDKGYKIVLWDL




G

## G D R

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


 KTQTTVLEKVSGKRSRVI RTPYGSKPYMKPEYMEAVVKREGF





 ANDDAFRA ILGGAPRYMRAPF LSSCDAACAADMAADGLPHC ENHAYDKENFGYDMYLFRYPTGRFSEQSLALLNNCNYKS


 $R G \square A A D E K A L H P S T P F F R F P G F E S T P A T L D L L Q S H G Q L V F$



 $A V Q T V V R D V T G E A P R R F R P P P F G S G G D A V V K I I A Y M T W S N G S$ E DQRI LA SVVTGEYTHEVRTPYGSSPNDTDQQKTRLKQKGF $K G F A A V K W A D G G A P A P F F R F P A D Q H P P A D T R N V A M F S C D D$ KNEMAFRNIMGGGFPTYMRPPYSSCSSGCLGDMGDLGYHVT
 K A S K A I EAALGMKPVTLFRPPYGADNDDLVSAA DKQQMKT L Y N EMAL R N I F G W $\ddagger$ P T Y L R P P F G S G S C Q D F L A R E G Y H A I S V

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 A A Q Q T L F N IT GMLPKFFRAPA GLRNPF VL SRLLNLT LAAS WS QTMANFKALLGKDFRDFRYPGSHMSWQGLESTDQQWIDWN K T K R L L K E TL G DE NKWFAPPS GDFNA LTV T TA HAH GL S TV RT QNALK K QL GQNFKTWRYPGGHDLSWT GLEAADKQAA Q G I
 Q N K S Q EVF K K L G L E HVVKLLRRSPTGHF DK T T L K I AA D QL G L T V V

 AT E E EII E N A DGGMK P K Y I
 A A QQVL T DLT GQAPRFFRAPA GLRNPFVVLCRLGGQLAA WT K T Q K A V F D Q T GYFP TTMMRPPY GAVNK QV AE E I G L P I I D W W GAEEAI LAA GADPRPLFRFPFGERDARTDEAVNDLGYAAV WAVE A V T E VC GTPPPR WY R P P Y GILLT G G L WA A A R H HVVLWS A EWTSAAMT DPSK LAPFFR DPG LMRADGVISRGQQVWSADF R L K K DVQ K K T G VT T N L V R AP Y GS TY L T D K E Y Q K V K Q D WN $K V Q K D I K E Q T G E E S R L V R F P G G S S N T V S R F N K Y K Y F D W N V$ $D D G A A L N G D K S K L A P F F R \quad \square P G L M R A E D P E A Y L A S Q G I Q V$

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 EYFDWNCSSGDQDIVRNATSCDYEQDMILFHDSSPKT KVWDWT $\quad$ DSFDWKYKNVISNATKNREVI LMMDDHP
 DAGSRPDSTQQVVQNVTEGMQKNNVSIVLQHDDKEF SPD DN NANATKEQVVTGVMQDAYDTAVVLMYDVADKPM T
 WGRDWTSTATPDTVLDALTPDLRGGGTVLEHDSDCTWHSA FHLLWDWNVDSEDWKYKKDHQKVYNSVMKQIHNVMHDQEAT

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 FWYDVNNQPDHASSLQKMKDKLHPGAI YLLH A A ESETN
 MTWSADFPA D DWRHDSSTQQVNYGKGVLLLHDDQAR
DFVDWNVSTKDS IIAAKIQAESEGKNHIVMLAHDSGTTTET TWSRRGFDTNTADTALVCRRLTQNGDILLLHDGNCAQTSA

 QF P WD T L K P P L W F V RWF V R C N A H P G GI L V L H D T PA L L A R T







 NLD S K DYEND DPSLDQ I SK DRIS S GY IIL FHDVH E Q T WGEDWTRRATAHSVVRTVAADLRGGATVLLHDAPGA WRSA



F

A D TVDWKKPSPSWVILQRMSKRMENGVLVLMHPT


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80
 E EGQRAALKKAYDS GHQ I A SH T L S HK D LDD TIS GEEFDS E DS F P WVSTIKRMYA DGHQUA SHTWSHADDLCKIGTSAQRERDEMY A A RPE LVRE VVRRGHEVGNHSQHHPQAWFWGPRRMQREVA RTYPDRVRAI AAAGYPVGNHSDTHPAYPDLTDEQDRADLA
 Y

36D3A8F

K
 Q S C PELVVQRM $\quad$ DD E GHVVGNHTSHHWNPTSKS DDDAA E D DR
 DEEKD KL S Q I HEMGFAI GNHTYHHQKLQDVDEETQKQEI M EKYPETVVRRIAKEGHEVANHTWNHPRLTEI EPDEDREELT $K N$ PE LARA AA ARGHEMSNHAYSHPDMSRLSQSQQLRQQE M NGAEELKQEYNEGMADANHSYSHDYSHLYNQSNY TADFD
 RYT DAYKRIVVDEGHTLGMHSYSHKYVIVDSPEAFRADDE


S
KNPFQARE IGSDPLFEVANH
KN P S L A K MIVDE QHEI GNHAY THPDLLKKLTK QRIVTEELE
 Q GNSSAA QQLVM SVGEI QNHSWNHP DMSSYSYSQVVVDQI S EKYPE IVVKQTYKE GHMVLPHTYSHEYSDYTTLETYYEDL E
 Y D RVD QI R A L HD A GH T L GSH T WS HA DLDT T L D EA GI N DE L Q
 A RWPEHLLAALRAA GHGVEAHGRWHTHALLLSPWREWAQVR REHPALAREIVARGHAIENHSEHHKTFSLHGPRWLAHELG KTNSTSSIQRMHTSSGHQQASHTWSHDDLSVMSKEHRHPQMI
 KNNPELAKMDEES GHEI GNHSYSHPNMKTLSASSLIDRKEDQ

 N N PK LAKMI HEE GHEI GNHAYSHPNMKNLSTNRILEELQ A GNQAAWNAYVNSGFSLQQNHSWTHS QMSSWSYQQVVNDFQ
 EANPGMVKKI AAE GHTIGHHTWSHRWLDK』SQPQADEEDD DQSKEMYQRIVNEGHTLGMHSYSHKYVVYDSLDAFETDFN K Y T D LY K RIVN D GH T L GMHS Y SHKY SELDYASDSFKE D T D
 SEAEAALQRIVVEDGHTLMHSYSHKYKELYESDSFTEDGAA A A RPQLVREILRRGHGIGNHSQHHPQAWFWGPRRMAQEDG
 DHAKP LL ERQDAE GHGVGLHSYSHEYSFLYPHNNIVSEVD $K$ GNEKMLQRRVAE GHLLAALHGMTHRHKFYRTPTTAVREMQ QRHPRCVEA I VARGHAVENHS QRHRHTRSKGPGALRREDA
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 E H P A V V K RMYK N G N GLALDHGITHKRADYSNTSAPLHEMA ATMQPALTREELARRGHCVQNHSHVHRHNFAMGPRGYTAELE NNHPDTSTLLAGSGFEVGSHTASNQTLTKLGPRGRATE\|T
 VAHPDLLAEIVRRGHSIENHSYNHRNLFAFCRKLTDEVLA

 $K N P Q L A M M I K E$ E GHEI GSHAYSHPQMSKLSVEKDDEELD LP WA N I DRRMYREGHQQAA HSWTHPNDQSSLSEDDRRNEMY


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LWTVD WQKPAPSA IVAK ITREAGPGSLILMHPTASSR KASIDWNA LINADAYKHAVESSKGKNLVVLLMHDTYGKEET NYVDWNVSTGDKAKLLRNDKTSQKNVVLLMHDRPESSAY GDDRSGANKDTDYSNIVNNIDPRFKHCIVLMHD SADKKST QWDVDAFATDADAVAEQVLAGVKPGSLVVMHCTRSAAPVT STDVVDFFDPEQLVQA $\square M K R L D K K G K G I L L M H D D Q P H \quad T$
 GADFWASDWTAMSPQQTKRLDNLARKGLIVLHDPQPR
 MWTVDWKKPSPEVLI NRVMSKDDNGSMVLMHPT Y Y I DWNVSSGDASADYDNKEKMLHNVIVALFHDTARNTKM
 GWKGTS GGMSRSGVAERVLGNLQPGGIILMHDGSNPDDGS WSEDDGDANGESVSYSENVYDGVINNFPNPHDHSTDQTTS VA WD DWNAMSGDADVQRPKTVDDPNVVVILNHDTYGKQMT
 I



 $\begin{array}{ll}D W D S N Y M T A E S D A D I M V N A P E D G N G G N L L M H D & R E W T \\ D W T D D W K K P E P T S M A Q R V V D K T D E G T L I L M H P T & S S T\end{array}$ DTLDYQGNGPNSQNUFNSAVSTNAAANKYMADAHDVHQAT GADEWASDWEPMTPEQQLNLSTIERKGIILFHDTHDVHQAT TYFDWNVSSGDATSQAYTADELLNN SVVVLMHDSNTKSTT SAGDDKAGANKDTIYANNNDPRFKHCVVLMHDAAD KKST GWSKRSDDTTNEKI LKK ITTTNLKKGDVILLHD
DSNDWRYKTSSTRVVENTLAKQKEPDVILMHE RKNT EYFDWNVSSGDGGENCTEDUDTRDTSIILLHD SAEKPTT ARGFDGVRCDPADTVAR DARDLRPGAIVLLHEGAAHGHN


 WASDWNKMTPQEEDLVMSRLEAAKGGIVLLHDIGKKAET V MWTVDWRKPSPGSVVDK $\square$ ARG $\square$ GPGSLILMHPTASSR $T V N G D A G A T L P A A K V R A N V L G A A P G S V V I S H M N H P E G G T A$ $\begin{array}{ll}L Q E N G D I D N V D W M L N Y V K K T S K G K N H V V I L M H D A A G K E K \\ D & T\end{array}$ CLGFDFTDPGAAAVSRTVLTGVRPGSVVSLHMGHPG ESTV
 QWDVDAFATDADAVAREVLDGVRPGSVVVLHCTLSAAPTT H $\square W D W N V D S S D W E L K D A R Y V Q Y T \square Q Q 1 I L L H D G K P E T$ RRGFDTRERAPQRVLERLTRDLAAGDILLLHDGHAGRPVL

NWDWQNRDPGK■TKAVTQYAATYTQPIVVLHDTY QAT LWTVDWRNPSPESVVAKITSKAEPGTLVLMHPTASSSK $\bar{N}$ QDLDMRDRGSEPGSTAAVPELDGKGRIVLLNVGGGPTAT AWTRRGYDTVCHNVFRRLVHNLSAGDILLMHDGGSASTVT LLWDWTLDTEDWKSSEDYYARERDEVVILLHEN QRT




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| :---: | :---: |
| UniRef90 D6GSC7 UniRef90 R0PGW0 | AEADPQTI QYYKDQGYVFGVL |
| UniRet90-V71118 | PESLPIIIEKFKEQGYKF |
| UniRef90-S2J432 | IELTSALI DYVKSQNFEFSTVAECDGKNPY |
| UniRef90-O5NXTO | LDVLPRLLAACETAGLRPVT |
| UniRef90-H1VAUO | VYNLEYMLQKF QGKKMVTVGECLGDPR |
| UniRef90-UP100047BE7BF | VETVERLLEMLARRGY |
| UniRet90-M2ZG57 | ADALPAII DGLRTRSYSF |
| UniRef90-D5WFR1 |  |
| $\begin{aligned} & \text { UniRef90-C4ZEZ9 } \\ & \text { UniRe90 R4LNG } \end{aligned}$ | I EAVPRIA ADLAARGLCAGRIA |
| UniRef90-EONL07 | VNALPSIIN |
| UniRef90-UP100036D3A8F | VTATANLLGTATRDGSRFVThD |
| UniRef90-S2JG74 | L VPWI TQYVRQKGLQFVTVSDCDGVAAY |
| UniRef90-UPIO00466EFE5 | AS ILGELTDAVRAKGL |
| UniRef90 H8Z8D5 | A A ALPQFl PQL Q A DGYRFVTVSDLLA QSCYELRPGDNARY |
| UniRef90-R6QKT2 | A A MLGDVVVGLKKKGFDF |
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| UniRef90-A0A015P5K6 | E GMII |
| UniRef90-EOE192 |  |
| UniRef90 M2PNJO | VANSSU1EYYKNQGYTFKTLDQ |
| UniRet90-UPIO004E | DRAVGQVVPELRKRGYRFVKVSELMA |
| UniRef90_W3AJY8 | TAILDELLTGWESAGYTFKSLDEL |
| UniRef90-UP100037E3A44 | AKAMPSLLAALKAGGYKIV |
| UniRef90-S2JRF5 | VNG[P WA K Y K S K N Y K FV T M S C Cobl D Y Y |
| UniRet90_HORNZ6 | VAMLPAFLRYLKDHGYR |
| UniRef90-V6KG79 UniRef90 18 AHE5 | DEAVRTIVPALRERGYRFVKVSELMK |
| UniRef90-8AHE5 | EKAMPIILHELKTRGYRVVHVPATKDLPKTPSEPWQWRDH |
| UniRef90-W1ST82 | ANSLDKLITLIEQRNLKIGTVSELMNEERD |
| UniRef90-C5BU21 |  |
| UniRet90-A8MF37 | AEALEEMI ISLKGQGYTFRTFRDUTQEE LLDTMVKLKK】 |
| UniRet90_UPIO0039F580E |  |
| UniRef90-UPIO003F498A6 | GQVLPYAVPKLQQAGYQLVAVDTCLGGDG |
| UniRet90-M9VET9 | AEAMPSILKWLKSEGYEFGVIA |
| UniRet90-D6S7A7 | VDSLSA |
| UniRef90-Q1JOX0 | PELL A A A Gler |
| UniRet90 UPl00038032DD | LLTAPRMLKKLSASGYMAVTVGDCL GDPKENWYR |
| UniRet90-Q67NY7 | AEALPRLEGLQRRGFKLVR |
| UniRef90-C1H335 | VYSLPYMLERLYAAGYRAVTLGECLGDSP ENWYRWAH |
| UniRef90_UP1000307D487 | TKSLETLIVNMKNKKLH T T V SEALSEERD |
| UniRef90 R9IOW4 | AEASLSEMI KKYFRDRDYEL |
| UniRef90-UPI00040F7F6E | REAPGYMLEYREEQGVHFVTDKDAD |
| UniRet90_W8AE64 | NDGLEEIVNGLRDKGYG |
| UniRet90-E6TS52 | AKGLEMMIEGMKQKNपS |
| UniRef90-UP1000463EB10 UniRef90-B2AAO | LQALPTVVNNLKNRGFGFVTVGECLGDAPV |
| UniRet90-K8PCEE | AKMLPAFLQYLRRNGYKVVHL |
| UniRef90-R7QX63 | VEALGPMI EALQGMGAQILPI DE |
| UniRef90-UP10003B3B95A | VEALPE\IEA】QAMDDTIVPLTE |
|  | LEALPAlIHALKKNGYNF |
| UniRef90-R6FB17 | A ${ }^{\text {P }}$ |
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| UniRet90-M UniRet90 E0QKM | V MPA M M |
| UniRef90 EOQKM UniRet90 UPIOOO40D8BF5 | VDALPS S EMYYGSLGYKFCLL |
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| UniRef90 - B8EP80 | AAMLPQLLREMKRRGFRIVHI |
| UniRef90-F4XPI8 | VESKKPGLPRWK |
| UniRef90-Q0UFD5 | LT GYMLDLMVKKGYKGVTMGECLG DPEANWY |
| UniRef90-UPIO0038FC32E | DADEGMI KAAKRKGLLLVPVSETISEERDEAPVEAK |
| UniRef90-W9AUE9 | AGY A A Al PQLRAAGWEFVPLR |
| UniRef90 $\mathrm{H7CWZO}$ | VEQLPQI DYYKNEGYEF |
| UniRet90_R1E7G7 | VEQLP WLI T WAKQNNLKLVTVAECLG |
| UniRef90_UPI0003746831 | VAAMPAILDGLRTRGLRAVTMSELLV |
| UniRef90_UPI0002880F4E | SEALSSU1 REVKARDMVLGTVSELLSTNRVP |
| UniRei90- L8PL92 | ERAVRTIVPALTAKGFRFVKVSELIGG GDPSENWYRS |
| UniRef90-F7ZOY5 | VKYLPKLLKFlKKQGY |
| UniRef90-A2SFE6 | VLPPLLERCRAAGLRGVTLTAALPPRRTASD |
| UniRef90 F9NUK4 | ADATSGLTEALRHKG |
| UniRef90-W4BQY3 |  |
| UniRet90-FOM1E6 | LEMLTQLISRAKAQGYT FTTLEPLLPSPFVP |
| UniRef90-UP1000465ACE6 | PRLLECFEQHDLH |
| UniRef90_UP1000477E7A3 | DCLNNIA ALKERGYD |
| UniRef90_UPI000476489A |  |
| UniRef90-W7ZX22 | SQGLDAMLKGIKEKNLLVGTVSELMSENRLPRNME |
| UniRef90-S8AD02 | LTV AMLKVIKDNGFETATVGECLGD G G M |
| UniRef90-F2RJY9 | PDMLRRVMNVITSKGYAVAKLED |
| UniRef90-TOR9Y5 |  |
| niRef90-K2G9Q2 |  |

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UniRef90-B9M4W6 UniRef90_E6VA35 UniRef90_F3Z4Q7 LALTFHGQGDPA IANALLTTAEQHGAR पTVLAVGSWL TIYLTFDDGPS YLTGKILDTLDSENTKATFFVTHGG VALTFNDSWGDERADPLLELKRQHIEHATFFLSASWA K CGADSFDDGASATNAYRLDABDKNNMTATFFVVSDWDK KAVALTFDAGQGDRAAPPLI ATLRALKVPATVFMTGRWAE K $\begin{gathered}\text { VALTMYD } \\ 1 \\ 1\end{gathered}$
 VYLTFDDGPDNGNSPTLINNLKSAGCSQATLFVWGNRD VALTFHGQGDPRLITDLLDELKRGGARVTVLAVGTWLA KYVYLTFDNGYEAGYTPKLADKENGVPATFF DTAHYK
 KTAYLTIDDGPT EY K OUIEALKKLNVKATFFFVGNNVK MVSMMINVAWGNEFLVPMLNTLDAEKVK TTFFLDGSWL KEVVLTFDDGP AATTSKVLAALQRECVRATFFLVGTGTA KVFAMTFDDGPY QYSWDLAKSLNAQGURSTFFINGKNFE
 GALTFDDGPY TYTEDLLNLLQDYNAKATFFVTINNDPR RKIALT四DGPHPEVTPRVLDLLDRHGAQATFFMCTGDAE TWGLSFDDGPSP YTPDLLNYLDANNTK STFFVVGSRA VVLTFDDGPASP TPQVLDALAKECAR VTFFLI GRNA RIV/ALT TDDAPTPESTQLILDAIACEERSRATFFIIGGHL WALTYDDGPS EHSPKLYDYLDKMNVKATFFMVGGQV KVYLTEDEGPT ENTDDILDLVQDNNVLVTFHFTVHML

## K

 KLCAYTFELSGGKGQVEQMLQLLQQQEIPATFFATPSWIE WTMDDG AVRDPQALQLIRDSGARPTLFLNDRYVK MVLIFDDGPEPGGTDRVLEALAGRRASATFFVLVDRVR RRVYLTFDDGPS ANTDRILDILAQYGVKATFFV VGK KVMYLTFDDGPS EYTKKIVDILDEHQVPATFFFDGKNVD AFTFDDGPMRDPVDAWLDALEQGGARGTFFLTGEWFD
 RVFLTIDDGGEKD PAFLRLVGQRDLPVSA RKVAI S FDAAWGNEDTPLLIDILERYDVPATFF LVGQWV KVVMLTFDDGPG LADEKLDLLKSNVKATFFQTGVNLD VI YLTFDDGPSTETTPELLDLLEENEVPVTFFILNYSEE VIAPGFDDGPW DYSEDILNRMEAAGDKATWFINGANKG KVVLLTIDDAPEK YSLEMAKTLKELDAGA IFFVNGHFID KVVFLTVDDGVEKD RAFLLRMMSDLKVP KVVALTFDDGPTKNV KCVALTFDDGSYDQTNKRLDAFDANAKAALFVNANFG AITFDDGPT GYTPMIMDELEELDCPVTFHFTVQNRA KEI AWTFDDGPYM WESDLMNKFESKGSKATFFLNGNNYG VVLLTDDAPDGQADE MAETLKALDAPADFFVNDFMES KVVFLTDDDGY VYDAEFVNGVRKEKVPIMTFLTSRYI D KTVALTHGQGDPALARTLLTTAERHGAR VTVLAVGTWL VLALAYDDGPY QYTSQLVDILNNGGAKATFFMTGTLYG TWGLTFDDGP NCSHNAFYDYLRNHKLKATLFYDGTNV MVALMINVAWGNEFLLTPMLDTLDEMEAKATFFLDGSWLN VALTFHGQGDPKTATALLGEAERAGARVTVLAVGSWLD TVAVTFDDGPY LYTADVLDKFKRYNAKATFFJTGNK TVALTFDDGPGR YTGDLLDLLDRYDARATFFVQlDDPN ปALTGDDGPDPEVTPQVLAQLAAAGARATFFLQGENAA K $\square V A T \square D D A P S D \quad H T R G \square L S A \square S A S G A H A T F F V I G S Q V$ $R T \square Y \square T F D D G P S P$ LT $\square T \square A R Y L K S E G \square N A T F F A V$ GRND IT TDDGPEPEVTPRVLDLLDAHGQRATFFCI AERV


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 RYT DVYKRDVVDE GHTLGMHSYSHKYSTLYYS SVDAAFSEDF C $\square Y N Q K L Q N A Y K S G H Q I A S H S W S H P P N F S L S T N D L T T Q M T$
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 $K N V$ E LAAKEDDQKRGHE MSNHAYSHPNMSRLSARAAKLEDS
 $K$
K P P D D D
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 D D Y TYFEDAQSRGTV I GNHT LNHRYLPGLSHDEQKREDC K H P K I I Q R IVAN GHCI GNHSFRHKTADELSFSDYS DDLN

 $\square$ S R P EML QAE YMGGHQLSVHTNSHPTETTLTNEQ』IDAL G


 DMQEVYKR VKKDGHTLGMHSFSNKYSTDYASTEAFEQDFD NHRSLA I QI CQQGHEIQQLGEEQA VCVEQMTAKACRKE LQ TN NDQUKYEYQN GMEVANHTQSHPHLQQLGASQVRSEWE
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R

 O Y G YFR R L R L GAG H N H TLLEHPDLRTLSYAQQRAEI C R Y N R E P L N R M I K E GHA L G NH S Y SH Q D ELLQRTNNNLIKN YR VLP ILQREVAD GHTI GMHAWDHDYAKCYADDNAY LDIE


F

## K <br> S

 DETKA I LIRAA IE K GY A $R G N \square K S L Y R A L E Q N H S V G L R V N P G R$


 DAHPEMARRILDGGHDLGNHTQRHLSVNDMPEAEARAEI T DFARTEYND I I S R GHT L G $\square H$ S F THRAN $\square Y$ ES F DAFKADAD
 $\mathrm{D} D \mathrm{D} P \mathrm{~L}$ H A Q R G L S D G H DVVCVIH T W S H H Y M T T L S D E Q V F A E L

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$Q C A Q R L E R T G S I G R W F R P S A T Q Y A N A M V K E Q A R Q V G Y A H$
$E R G M$ QCAQRLERLTGSIGRWFRPSATQYANAMVKEQARQVGYAH KSKKVFDSLGLKDVHLLRPPNGQFNKDVLKLTADIGYTTV SKLKSIDGTEPSHLMRLPYMDGGGAVKSALYDVPLTDCGL RAYTAFRAAGVTGMPYFRFPGGCYDRRALRALGTAGVTAV KNEMALRNDFGGFPTYMRPPYSSCSDQSGCVQYHVAYFDV RARDTVAAVTGASPLWYRPPYGVLTVSALLACRRPRLWTT
GMHTWMATNYNLQPKFFRPGTAHADNVATVVSAMGEWTV QCNQADQNAGKPKPTKGRDPYAHADNSTAQQACSAMGGUSV ACAQAI HAVAGSPGRWFRPSQTQFATAMIKAYPTCLSYDV KTQVLLQDILGVKNGWFAPPSGDFNQETVDLAAGLGLKTV DLHTAVYQKFNYEMKYDRPPKGEYSERTVAYTNTLGYKTV GMQDVI EKHYGTRPVLFRPPYGNYDRTTLRAAKSCGDTHV KTQDLLKESLGVVNKWFAPPSGDFNQQTVSIAHARGLKTV RGDAAEEAALNPSTPFFRFPFFESTPELLDLLQSRGLVVF GQQDILEKQFGKRPRLFRPPFGNYNTDTLKIAKSCGDTAV KCQNILKPFDTSSPTLFRPPEGRLSFLVWFVDKYHRMQVM FNEAALADLLGYFPTYMRPPYSASNDEYHVTYFNDDTEGY RADTALRRTGARHVPYFRFPGGCFDKESLRAMAPAGKTAV WTREA KQITGVTPNTMRPPYGDIDDRVRIIWTSANGGSF KGDTAVNKALGATAAPFFRFPGFADTPALVADLTSRGYTD WNEDAI KEATGVAPKYFRPPYGDIDNRVRDVAAALGFIPD KQIDAI NKVTGTDTKFARSPVNDGDVNPDDYSIFLENGII K SSYLKDVTGVNSLYYRFPGGDSNVNMAEFVRVLNEKGI K RET GTVTEEPGVFFRDPGGEYNNEVLRTIYACGSYPV NCNTKLKNLIGEPSHLMRLPYLESNGTVQSALNDVPLISC DNSDAFQKAFGQRPTLFRPPFGNYNDDTLRAVADCGLKAV NVDREDDTDGLSGTEVRYASVP DNNGEVNSEMYSGGYTF AGKRELEDLLGIPVRWFRPPYGAQTPAVWRAVRRQGLTPV
$K G H D Y L Y E T G E D C R V V R F P G G S N T V S K S M W D L D Y D M ~$ ELQSYLEPLDGYKTVIIRPPYGDFNNVGEAGFKLWDWS DD AAEASFARPLGCRGSFFRFPFGAQNNRVEKNVEDLGYHPV LLETATFKAADLDKDKWFRPPGGDLDSQKEELVKDVAWWNV ACNDKIEADTGVRPTLIRPPYGDYNDKVVNVIRSLDMEPI ANSQVINDKDIPIRMPYLQHFQGMDYVQQKLNIPFWVRGY LLEEALVNDLGYFPYYMRPPFLSVNAVALQALKELQYHVI KAHQELTEDTEAKDKWFRPGRGRYNPTMLYNRQFALASMU KLNDLIEDIIGERPKFFRAPHGVNTQDADEEQMVLMNWSY
 K LDDVLTVTNGYRPTYMRVPYFAYS AQDEALKDATGEDIKFARAPVEYGDVNTDVYNTFMKNNIV KVETAFIK LGVKPLYFRPPYGEYDDTVLYKKDFMWTHDT LNNDA YKLTGKKPKYFRSGTAYYDEVALK DADEYKDAGF SLSEMLEEVTGEKPQFFRAPHGANTDFARDMLLMNWTYGY RPPYSICGKNCQNVLSTDGYHADYFDDDTEGYLHDD EASDADQKQYGRRPTLFRPPFGSYNETTRRVSKDCGVKSF HMYNYVTELTGRPPRFWRFPGGDY DPYIESLGMTYYDWNV KLEQAMVNITGKKPAYMRPPYDXXXXXXXXXHGDSRDQER YTMRIIKDVVGVTTRCWRPPFGDVDDRTVIWADDTDDWNV KTKKLLQERLGGENRWFAPPSGDFDQQTVKLAAEEGLKTV GCAQRLRKLTGTIGSWFRPSRAQYDLVIRLARRAGYPHVLI KLEDYIHQLTGGKMEDMRFPGGSNNTMSHKYSDDKFMRGY YNEMAFRNILGYFPTYMRPPYSQCAEDNCRLGYHVVYFDV KNEGATRNI GSFPTYMRPPYSSCYHDVLYDDDTEDYKND AA QHTLTGLGAPDPRFFRAPAGLRNPFVLARHGLTDASWT QTQLALAGAAGDTTTLFRAPYDDYSWQVYQQDGEDGYTSV EVQGM| DRAYRDRERYYRPGSGFFSDRVRGVVNRLGYRLV




WGREWERSATPTT VVATVTRT $\square R P G G T I L L H D T H G D W R H T$ TYFDWNVSSGNVTTQVQNASANNRPSVVLQHDSKGF
SAGDDRAGATKET $\square Y N N D N V P R F K H C V V L L H D A A D K K S T$ TNDVDSGDWSGNTPQQSQQKFQQNGHI PLMHETYASTVNT VYPHDAQDPFPHVNAWHVLDLARPGGII CHDG RRWT $L W T \square D W K K P T P D V L V N R V M G R I H N G A T I L M H P T$
$G A E D W L D E D S A E E R S K R I I N Q A Q N G M I I L L H D M E G N F R V T V$

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 $M F N G D S G A T A N A D Q V Y Q Q F L Q L R P G G D L L A H F N R P G S E$
 DWTVDWRHPSPESVI AK ISSKVESGSLI LMMH T MWS FAYDDWDKNKQ
P LWNAEVFVDHWE YREWDRETHPGD VVLTHFRDDWDGTM DSNDWKHKGKPQDTVAFVNKELDGFHKI SPVILVHETKDT LWTVDWKHPAPDAVVQKI TSKVEPGFLILMHPT DSS GADLWASDWNPMTPQEQLTLITGRKGIILFHD PRAQT NWDWRAHDFTQEKSAYQEMDKDTTGTVGHDTDEHEVYNQT PLWEAEAFPDHMEW REEDRKDHPGDIILTHFRGKWKGSM LWS DESGEWGKYSHESADQMFDRQVSDIKPHDVVLMHDNS


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 CPY DYDSP E E F ECMDEGSDPKH HS FI I L M H D GQE G D T T



 QWDVDAS H TKGMMDSDFVYPDVCH
LGT DYE ES K T GK R T I L K Q Y ET H L K P GII Y VA HTRD YAEFW DASGNNDDSSDKLAQSADDELGKKGENNNI LDCDTN NKKTT

 PLWNEEVFADHWE YREGDNRLDRPGD IVLTHFRGQWQGTM
$T W N L D$
$E A D \square D T K D Y E H D T P D F F R D G \square N A G G S \square A L A H D \square H$
Q T T
 EDANGKGADFGRNVI GKVRDQSPKPALILSHSTQDVTHS

 WSAEYYNGTS GPGVGFNGFARFKPGDDILMH
LS Y D DYTSPGAAAVTRTVLADVRPGSVVSLHFGYPG
 GQVHGRRRRQRPRTPL M M M TYATTVQTT QP GGSEPRSK $\square E S N Y Q K\|I K K G Y D S T\| V L T H E I$




 F ID T D WK E P G V P Q Q V





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 LS K LLL EWN G I H TVF SFSYPNGAY D

R GA A EV A L V R G S A GLLLFRPS GTP T S T A VI R A G Y A R C DS Y D | $L$ | $A$ |  |  |
| :--- | :--- | :--- | :--- |
| $R$ | $L$ | $K$ | $K$ |







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Q S M R I FREQL GI E S SYFRP P F G T VVA S R L R QE L A R H WSVDV
 LS K L L L E WNGLPPTVFSFSYPNGAYD

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 TWDY WDKNASASD SEYVVQNTKPGSIILLHVMFKSRVNS S FTVDTGRDFPWDDPYDLDRVPMFEGPI SFKHFRFRLTFSA VAVPRDWDDPGWVSTALAQTAARDHAVVVLHDV PSAC KYTCVLWNSVPRDWADPHGWRDHRHTVVVLHDL PTGA DVLGGDAGATFNTEQIIKQSALVKNGSILIYHFNHPE KDS MW QD WLWAETSTPEKQVDAFKADVAKGGNLVVMHFSYNS T HWVGDWELEEERTLLDRLVKLSGPGHVLVLHDGTKGKAN

$$
V D P Q D Y L D P G T T A V R E R T L A D V R A G S!V S L H L G H \quad A G T
$$ FWWYEDKQPTREEALNKLNGRIHPGAIVLLHST SKTN VMWNDNRGLTPAELMAAAREWFTAQAVIVGHVNQPTDTT SVLGDAGATFSASKVTQQLMSSRSGDILLFHMNHPEGGTT NYNVDAGGTFNQAQIANAFNLASEGSI FLFHMNKPQSDワS TVNGDGGATYSAATVAAEVGRVVPGDIVISHFNRPAAGT IWNQDSRDWTMSDFANWLSGPRTPGLVILAEHEDTADDVTA FHWTQTVDKGKVRYQGEWGKMQPGDI ML M HF RDAYADDF A DNGDGGATLSANAVIAQMSNPAPGAIIIAHMNQPNSRS HWREDTDDWQM

$\square \mathrm{W}$
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TTN
T 1 NGDGGATYPASTVAGEVGRARAGDVVISHFNRPAAGT

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

GSFGDSGLLDEGTLLDAARQWLLAQHIVIGHANFPTVTHL
$A \square P R D W D D P D G W V A R A D T Q C R T Q A W T L M V L H D L \quad P T G A$ LWDFDTFDWKMLDLANNRNEADVFSDVTRFH

## 

FWNHDTFDW
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EDWLWAESSTPNKQLDAFKRDLAKGGNLMVMH Y $L$ HQST A PVTIDSKDFAFNEQLYHVPYRAREAYVKKMKARYIWKQT
 TADY LHD S Q TEELQKSKD VVDQS
SVPHDWDQPDQWVQRCLDDDA HQDWSVVVIHDDPT GAMQ


## NY LGDAGGTYSANAVASALLQASPGD $\square A L L H M N Q P \quad N S G T$

 LWNLDT D D WTPVMWTTSPDGTRTFDTQDFD $\square G D G S V$
LWSDDTEDW
GT LGDERVLREQD IIANARTYFRQQAVVIGHANHPAVTH



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DSKAALLENDTGGKIIDAVAYPEGKYN WT DQ I I H DLTGGVPLYYRPPYGDVDNRDRALAKTFALGDF YTAKVIKDVVGVTPTCWRPPFGDVD



UniRef90_K6T8U2 UniRef90-UPI0001EA89DC UniRef90_UPIO0045618E4
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


[^0]:    

[^1]:    

