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 $M Q \operatorname{A}$












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 $M$ QI G K V I G N V WA T R K E E N L R G L K K F L I V Q P E LP T N E S V G S P
 $M Q 1 A K V C G T V V S T Q K L P T M T G V K L L L V Q F V D R E G E L L P R Y$ $M I L A T V V G S V V S T \square K D E G L H G S K L L L V R A C T P E Q E A B G E P$ MIFAKVI GSVVSTHKDPKLTGKKMLLDKEVNHEGKPMGSY $M R I G R V I G G V W A T R K E E G L Q Q L K L L I V Q Q P I V V D G K P V N S S$ $M N L A R V T G T V V A T Q K S E A L V G A K L L V L E R L N E R L K P L G E Y$ $M L I G I V V G N V W A T R K E D S L N G L K L M V V Q R L D L A H N K L A E S$
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 MFLAR V TGGSIVGTQKVVESMKGHKLLIVEPYRLDTDSTGRT
 $M$ II GKVI GNVWATRKEDALNGLKL MVVQREDACSRSSHES $M$ QI A R I I G S A V S TAAK D P K L T G F K L L V A QRA T P D N QVVY G D P $M K L A V V T G G V V C T V R H E G L A B H D L L L M V E M L D A R G E P D G Q C$ MRLGTVIGNI WATRKEE GLTGGKFLGVQLENPDGTAVDSP $M$ III E KVVGGNVWATRKE E SLLNGFKLLVI KPDDYYHEKEENT
 $M K V G K I D G S V W A T Q K E P R L S G G K L L L V Q P D L S A E K N P T A V P$ $M F L A T V R G T V V S T S K D E R L V G F K L L L V Q P L D V D G G P T G R P$



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

 M QMGRVI GSVVWATRKEEGLNGLKLLI I QPI DSNQQPDRTE $M F L G K V I G S V W S T Q K E E G M E N L K L L I V Q P I D D W K E N E G G P T$ $M I G I K V I G N V W A T R K D E T L N G L K L L V I E S I D D Y G R N Q R G E S$
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## QUERY

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 E V A V D N V G A GVVD E WV L V S R G S A A R QL P G G E Q R P I D A A V V A EVVALDFVGAGFDEWVLVTRGSAARQIPGSETRPSDAAVVAA EVVA A D NVGGA GLD E WV L Y S V EVAA A D SI G A GI D E WV L V S R G S A A R QI PR GE QRPVVDAAVIA AVAADPVGAGUDEWVLVSQGSAARQPQGNQTRPLDAVVMA EVAADVVGAGPGEWVLVTRGSSARQHSGYEGRPVDAAVAB EVAA D NVGAGDNE WVLVSRGGAAREDPGSEKDPVDARVVAA $E V A G D Q V G A G L D E W V L V S R G S A A R Q I D G S E K R P V D A M V V A$ EVATD TVGAGVDEWVLETRGSGARQVLNSENRPIDAAVIAA EVAADIVGAGMDEWVLVSRGSAARQV GENTRPIDAMVVG
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 $E V A G D V V G A G L N E W V L V A R G S A A R K E R G N G D R P L D A M V V G$




 $F$ I A V D R I G A GVVG D R V M V T L G S S A A N M E P E K H L P L D A L I I I

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

 TVVAVDAVGAGEEE VVLYTSGSSARQTSQTKDSPVDAVIVA FVAVDCVGAGDGERVLITTGGSSARKALYNQEAPVDAAIVGG | $E$ | $V$ | $A$ | $V$ | $D$ | $M$ | $V$ | $G$ | $A$ | $G$ | $V$ | $G$ | $E$ | $W$ | $V$ | $L$ | $V$ | $S$ | $R$ | $G$ | $S$ | $A$ | $A$ | $R$ | $Q$ | $Q$ | $Q$ | $R$ | $H$ | $L$ | $Q$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | $V \vee A V D S V G A G I G E V V L V A A G S S A R Q T Q V T K D K P V D T V I M A$




 AV A $\square D S I G A G C G E W V L L V S G S S A R Q A H A H G A S P V D L C V I G$

 $F V A A D M V G A G D G E W V I V V S G S S A R S A T G D N R T P V D A S V V G$
 LV A A DNAGA GFGDLVLVTTGGAARLSDDKEGVPVDAVIVVG $I V A A D D I G A G V G D L V L V V R G G S A R Y A V G N P D C P I D S A V V G$ FVVAVDCVGAGIGEQVLVTTGSSARMALRNQDAPVDASIVG QVAAD AI GA GEGEWVIVSRGSSARFAM DKDAPLDDVIV G
 AVATDSIGAGNGEWVLIVSGSSARRAQSKEASPVDLSI I G
 V I A A D R I G A GI G E NV I V S R G N P A R M L F D N R S V P I D A I V V LI A VD TVGAGI GELVI FTKGTAARDAARKMDAPIDDSIVGG

 VI A ADRI GAGMGERVIVSRGTPAKNIFAHKNVPIDAVIVGG
 $L V A C D T V Q A G P G D D V F F E G G R E A A L A L P N W F N P S D C T I L G B$





 VVAV D HV G A GI GESVLI TTGSS GRLSFDGKSIIPVDMVIVVG F I A V D R I G A G $V$ G D K V $M V$ T T G S A A A A N $H V A V D T V G A G N G E R V L V L Q G A S A R L I L D N K N S A V D A A B V G G$



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 $M$ LI A K V $\quad$ IG S L W W T R K D E K L N G WK F M I V $M F V G K V K G S L W A T R K D E N L N G L K F L V V E R Q L N E H Q S D P A L$ $M$ QLAA K V V G N V V S T S K D E R L V G F K L L L I R K I I D E N E N Y D

 $M K L A D V V G Q V V C T V K H P G V G L D R L L L V E M L D R A G R P D G E R$ MVLAKVIGGVWATKKEEALS GSKLLITTRVFEPDTNKELN I $M L I G K V T G S L W S T R K H E Q L N G M T E L I V A V I T D E Q T S A K R S$ $M L M A K V \square G S V V S T Q K D A S L V G K K D M I I Q P I N S E Q Q D D R F Q$ $M F L A R V E G A V V A T K K D P S M S G R K L L L L R P Q L V D D Q D G K N T$ MQIGKIDGTVVATRKDESLVGSKLMI TQPLNFRNEDEGKP
 $M K L G K I V G S V V A T R K D D R L V G H K L L V V Q L L M P G G K D E G G F$ MRVGKVI GNVWATKKDEGLEGFKLLVIDQINPRTKEHDKT MELGGKVI G S VWAT K K DE K L N G N K L L V V Q Q T DA YA K P S K GV $M K L G L I$ T G H V V A T R K D E N L V G A KLL LI I Q P I L P P G G S S A G Q P $M L L G K V D G N V V A T R K D E T L V G T K M L I D T D V D L D G N P A G Q P$ $M L I G K V T G N I W A T R K Q D G L S G F K L M I V E L I N D S E Q E T G Q S$ MF M A K I T G S V V S T K K E D S L T G K K L M V V Q P V D A N G E N V R S E
 MKVAKVIGNI WSTRKDEKLRSYKLLVVQPI NLTGAKAAAP $M Y$ FGRVVVGSVWAT $\quad$ KK S P QMVGGQRMLVVQPLTPELKNTGKP $M N L G K V I G T V V A T R K D E R L T G C K L L I$ TQQPVDYKYKPFGNP


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

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




 $M Q L A R V E G S M I A T R K H P S L N G W R L L I D C Q P L D A D G K A E G T P$ $M$ QLAA K V V G N V V A T K K N D F L DG T K L L I V QPM E K E E S K N G E L
 MF LGKVVGSVWATQKEVGMEHLKLLLVQPIHADGTDAGTQ M Y L G K V I G T V V S T $\quad$ KK T P S LLT G S KF L I V E K I N Q D L T A K K Q T

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

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



 MI I A KVVGTVISTRKNSNLVGNKFLIVEPIDEMNFKSKSR MI A GKVIDNIWATRKSDSLKGLKFMLIEAI GGKESGKY

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VV|AAD T|I GA G $\$ GE TVVLIVN G S A R M A L G R K D IP |I DA IIV V $I V A V D S I G A G I G E T V L I V S G S S A R T A V G R P D V P V D A T V V G$

 $A V A T D N I G A G A G E W V L L V S G S S A R Q A R H N E G S P V D D C D V I G$



 CVVAA D S I G A G D G E W V L V V $V$ Q G S S A R K T I S N E $F V A D D V V G A G S G E L V L V S E G S A A R H S A T T T G Q P V D A D V M G$ LI A AD QI GA GEDEIVVMVAS GS SARQS LVNHNDPI DAABVG $Y \vee A V D A V G A G E G E L V L V S A G S A G R F T A T T R D T P V D A D I M A$ $V V C A D A V G A G V G E V V L Y A S G S S A R Q T E V T N N R P V D A T I M A$


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




 $H V A S D S L G A G N G E W V M L A A G G S A A R Q A L A E V R A P I D D L C V V G$

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$-\perp>$
 VVAMDCVGAGKGEIVFYVSGSSARMTADTEGKPSDAAIV

 $M V A A A D R G G A G E G E W V L V V$ S G S S A R M V D GT G Q TP V D L




 EI AVD TVVGA GDGETVVIVVGGSSARMSNGKKDDPVVDAAI I G
 H I A L D Q L G A G E G E WV V MV V A G S S A R A A Y G E K N S P V D D









 I I A A D T I GA GI G E RVLI CGGS SARKMLLGKD DVVDVAVIV G





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I I DVVDVVE
I I D DKE: NTNVL

| $I$ | $V$ | $D$ | $T$ | $V$ | $E$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $V$ | $D$ | $S$ | $V$ | $E$ | $T$ |



| $I$ | $V$ | $D$ | $E$ | $L$ | $T$ | $V$ | $E$ | $K$ | $G I$ | $A$ | $N$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | IV DEAVSGGKVIFHK I D S V EMNE I D S F D

V D V VEVED
I D SL E V V E S G A T F R K $\vee D$ S E L Q D $V$ D E VVVVGGKLT F H K $L$ D S L E V D G A V T F R K I K K
D SMEVS GEVT F RK
$V$ D L V E M G G DVRFRK D NMDV
D S V EV D E S L L
$\vee$ D RI E ENGQVVFRK V D S I EVSH
I D S V D I G G K R V F E K
$\checkmark$ D T V E V A G K V R Y Y K
V I D S I
I DKV DYHSDEEY
V D TVEME
V D K V D I A D
$\vee D$ S V E V S
$\vee$ D K V Q V M E A LI Y D K
$V$ D EAVL D G S L L Y R K
V D QVDL N K
I D S V D R G
I D TFD
$\vee \mathrm{D} T \mathrm{~V} \mathrm{D}$ V G K Q $\square \mathrm{F}$
$\vee D N I D V$
V D S L D L N D R
V D T V D V
I D T L EI
$V$ D S V V V E D D E
$\vee D S V D C P G$
V D K L E
$V$ D N M E V S
$V$ D S F D
VD SF F D IDEES
$V$ D DQE L H P E VL
$\checkmark$ D E V H V

| $V$ | $D$ | $R$ | $V$ | $D$ | 1 | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $D$ | $S$ | $F$ | $E$ | $G$ |  |

$V$ D S V V V K K
D T 1
HV D T V E V M G K R I

| $L$ | $I$ | $N$ | $T$ | $V$ | $D$ | $I$ | $G$ | $G$ | $R$ | $E$ | $I$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $F$ | $S$ |  |  |  |  |  |  |  |  |  |
| $L$ | $V$ | $S$ | $V$ | $H$ | $L$ | $G$ | $A$ | $K$ | $S$ | $I$ | $F$ |

V D S I E

V D A I I D S S l E I I D Q D L L I D S L E E I | I | D | F |
| :--- | :--- | :--- |
| D | D |  |
| L | S |  |

VDDQEDDRSVL
DEVTGGTETWFKK
V D S L E L
I D E
$V$ DEV HMD
I DVVQ $\quad$ QQ G K $\quad$ VF S
$\checkmark$ DEATEE
$V$ D N $\square E \square E$ E A S L

D S F E
$\begin{array}{lllll}V & D & S & F & E \\ V & T & V & E \\ V & \square\end{array}$

DEVSAHHECCYGK D HIDDMDGERTF
D E

D T VTVA S G MLLY S K | D T | I | $\mathrm{D} R$ |
| :--- | :--- | :--- |
| $\mathrm{D} E$ | I | D |
| D | V |  |

D E I Q T S D
D E V D T G S
D K
D TVE

D N I
D E
$\vee$ D E Q E $\square$ S
1 VD
$V$ V SFEVFDE

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 MEIG TVVI G S V WA T K K D E A I S G Q K L L V I DVMKRYR Q E N G S L

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



 MII A K V V G T V I S T R K N Q NLI G N KF LI V E P V S E M N Y D S K N R $M \mathrm{Y}$ A R V I G N V V S T S K N E K L I G M K L M


 MI AAKVI DNIWATRKADSLVGLKFMLVEIL GGLDAGRL $M L D G E V I G N V W A T K K Y D G L D G L K F L I V K T E D N \quad K R$
 $M L 1 A R V V G E L V A T Q K H P S H E G R K L L L V Q P L N L D G S D R G D A$ $M T V C T V V G H V W A T K K E N S D S G L K L D V V R E E R G G R K T A P E$ $M$ VI GKI I G NVWAT R K DE S L N GLLKFMI AQLEN G G K
 MEMGIVVGRVTATRKDERLVGTKLLVTQPI GLDGVPLDSP $M \perp L A K V V G N V V A T K K N D T L V G Y K L M V V Q P V N A D L T I N G N Q$
 $M L I G K V T G S V V S T R K S E N L V G S K F M I I D V Q D H M G O S G Q K Q$


 MHMGKVI G SVVVSTQK D D S L V G R K L M IV Q EI NS D L Q D G L R Q
 MYA AKVTGSVVVTHKDKSLHGLKLVI QPVNDQLDEDK








 $M Y I A K V V G N V V A T K K N D T L M G S K L M L V Q P V N S A L K K E G P E$ $M V T A K L I G N V W A T R K A E S L S G F K F M M A E D I S S G T R T G E R$ M Y M A K V V D S V V S TVK D P S L IG R K L M V VQ PI N S D G Q A VR H Q

 $M N L A K V V G T A T S T V K H P S M Q G W K L L V V Q P Q Q A D G T P D G H P$ $M M L A K V V G T V V A T R K E Q S L S G L K F L L L R Q V D L E G K E A A A B$
 $M I L G Y V K G N V V A S A K Y P C F E G Q R L L I V Q P \square D E K G D D K G D S$
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 $M Y M G K V V G S V V S S Q K D T S L D G R K L M M V R Q V D S N G D P M N R E$ $M F V A K V I G N M I C T H K N D N L R G L K L M V V Q P V D D Q L E E K G K P$ MLI GKLINNVWATKKAHALDGFKFML AEEI QGSNKGRR


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UniRef90＿C7M1Z4


$F|V| T D S V G 0$ 50 A G｜I $G \operatorname{D} Q|L V| T K G 0$

S V T Y A F D N ${ }^{70}$
80 MVAIDTVGAGINEIVIVVTGSGARKASNTIDIPTDASIVG HIAMDQLGAGEGEWVMVVAGSSARAAYGGDESPVDLCVVGG $V V A S D \square I G A G \square G E K V L Y V N G S S A R A A A G G Q E \square P V D A A V V A$ I VACDATQAGI GDRVFVVDSREAAFALPDHATPTDATI AG VVATDVIGAGGUGERVMIVNGSSARRTEGLENAPVDCUIIGG
 VA
 AI AVDTVGAGNGEIVIVTCGSAARRTAGKEQSVIDAAIVG $M I A B D N I G A G \square G E F V L V A T G S A A R \square G C D M E N V P V D A A V V G$ YVAA DLTGAGUGEVVLVVTHGSAARVDQNGQFAPTDAABV SVATDSIGAGNGEWVLVVGGSSARRAQHSEASPVDLDSII G
 MVAVDNVGAGVGETVLVAVGGAARVAVGKKEAPIVAAIVG LVAVDLVGAGVEEIVII SQGSSARQTEITHQKPVDCVIV G
 $F V A V D T V G A G A N D T V I V V T G S G S R N S S D S Q D D P I D A S I V G$ FIVADTIGAGlGDRVIVSTGSGARRMLGDDNIIPIDAVVI G YVAIDLAGAGVGEIVLVTDGSAARVDSDGHNAPTDAAVI A EVAADSVGAGVGEYVLLVRGAGARRANRNEEAVNDCSIVG EIAVDSVGAGTGEYVIVTNGESAGYVFGTSTSSIDSAIVA LVAADVIGAGVGDKVLICRGNSARMVVGNGKTPVDAAIVG
 IVAIDTVGAGI SETVIVVTGSGARYLATDKVVPADASI MG IVAVDNVGAGIGGEVLVATGSAARVGCGMPDAPADAASVG





 II A A D TII SAGI G DRVLVVSLGSSARKMMDREDVVIIDAAIV G $\bar{M} V A F D S V G A G I G E K V I I \quad S T G S S A R N \square H K M K D V P V D A A I I G$ L V A A D VI S A GI G D R V L V A T G S S A R R M L E N D N I P



リース＜

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

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 $M Q L A K V I G R A T S T V K H P T L K G W R M L L V Q P L G P N G \bar{V} P D G A P$

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I V D E V D D

11 DE

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VVDKVNLE
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V T Y DCN
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I VDRID
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DHWEPD
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1 VDSTTVT E E
LPDP P
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VDS $\square \mathrm{D} \square \mathrm{NGE}$ G VYRK
I DE
i I DHWSED

I I DHWPPTEEGTAS IV DTVEVSG
$i \vee D K M$
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I DYWD
1 I DKWE
V D R L H
I I DE
I I DRWEEE
VDS
I DRFD
, I D Y W WE S D
IVD
I I DHWEAD D S V S M H A GVT
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V D Q
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VD ADVDPREV
I DQW
I D E
V D Q V H $\square$ GPKE $\square \mathrm{FN}$
VIDR
AD TVITH GEVTYSK

I DHWDPSGSQT
I L DQMEVDH
VIDQW
IVDN
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I ADTVDRDGAVTYRK
1 VDTLSR
1 VDN
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I QD
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MQLIGRVVVGTATSTIIKHASFQGERLLIVQLEGVEGKPDGEP MIAAVVTGNDWSSRRDDGLPNGALLRVEALES REESGDR
 MULAKVVGTVVSTRKEPKIEGIKKLLLEKINPSNMQKGDY MQLARTDGTTTATTAHPSMVGAKFLVVRELNLDLTPKSST MGKVDSNVVSTRKHEALQGYTLLVIEDMHQN SREY MTRGRVTGRVWSTKHVETLPNGALLEVETED GGGR MKIARV GGVTLSRMHPSMNGYKLRCVEVVDDAKPDGGDT MEVWRVVDELVCTRRVPEMGSASLRILK MLAGKVVGSIVSTRKHDKLVGNKFMIVEVVEHMKEGAG Q MK ARVVGTATLSRLHPSLHAARMRCVEVVERKKVPANDL
 MQPARVIGHTRATVKHESLQGRRLVLVQPTGVGEKPDGAP MLLCRVIGSVVSTHKNKNLAQAKLLFVKPVDVNQKFTKER $M D I G V E G P L V C T R R D D G L Q K V S L R L L R D A N$ GKR MLLGTVVGNVWATKKLQSLTGQAFLLVDPEGAG VNGTA MEUMQVVSELVVTRRVPGLKQSSLRVL EPVHHMDATGKL MDAATVTGNVWSTRRDEG|PAGAFLEVEVDG $M Y / G E V T G R V V S T V K T E G L K N D P L V V Q L D E K G R T G R M$ MLLAKVDGHVVATQKSPELKGSNLLMIATLDDELNPDKKT MDTGVVTGQVWATRRDDGLPAGAFLEVE ADGGBSGAR MRVVDELVVVTRRVPGLFTASLRVL MKLGKVIGNVVCTQKVESFQGIKLLLVQPLNEKFEEIGDP MDIMQVERSLVCTRRDPGLQSVSLRVLR MYLAKVTKRVVSVVKHEAYNGKKVYVVKPVLPDGRALETE MDKATVGGPVWATKRLDGFPSGALLEVQR D DETAER MQILQVKKQLVLTSRLKDLGHL MRLAHVIGKVTLSVADPSLRGGRLVIAQPLNREKFATGNS MRLCRVLGSVVATVKHPVYNGLPLMIVQPLDDAGRDAGAS MQUSVVRDLVTTKRVFWLASKSLRVVE


 MQTARVIGHARATVKHESLVGRREVIAQPLLLSGDADGPP KLALITFVDRDGNEDSEV $M R \square A E D V G K V T \square S R D H P S G Q G A Q L K L A V P L M D E D D R E A E F$ MGGVIGKTWASKKVKELEGCHLYVVQPVSSESNPVGNP MEVMRVRSDLIATRRUPGLKNLSLRVMES DATGKV MRIAKIVGTVTLSRCHDTFVGASLRLAVPMTLETQPAADE MKLAVVTGQIVCTVRHHGLAHDKLLMVEMDDPHGNPDGQC MRIAEVIGRVTLSRSHPSLRGARFVLLEALTEDSDKRGED MRLGVVGRVTLTQKEPVYNGGRLLIVQPWTRAEFPKGSS MILARIDGHATSSFCDASLKGQTIVLVQDAAGADPEQGTA MLLAKVTGHVVATQKCDELRGSNLLLITRLDDDQQPRKDRS MRTGEVIGKVTПSKCDPMVSGGTWMLVVPLKPDGAEAGSP LGQVAGKVWATKKSPALTGQAFLTVRV
$1 H Q V K Q T L V M T R R L E G L G Q Q S I K V L H S V N$
GEREL
 $M K \square G T V I G T V T F S H L A P Q F R G G K W V M V S P M G S E E Y S Q A S T$ LVLKTIDDNGTPSGDA MRLGTVIGRVTLSQAVGSLKGARWLLVSPFNKEHFQNGAE MRI GQVI GRVTLNRAVHGFVGARLPILEPLPFEADANPEE MRI GEIIGHVTLSTYHPKLRAWKLAVMKLSALQGDPAGRS MKLAVVTGQIVCTVRHQGLAHDKLLMVEMIDAQGNPDGQC $M R L V K V I G S V T S T M K D D T L K G F K L L M V Q T V G T D L D E A G E Y$ MNLGKVIGTVVTTISHPDYKNRRLLVVQPLTLPGDPPQGD M LLAKVTGHVVATQKCDELRGSNLLLITQLDDNQQLKDRS MVLGEVVGKVWADR\LPPLQGRRLVLVRV

NVRSE MKTGTVIGRUVASKRLPELPAGALLEVQLDYPKEYNNN DVN PVNDKEEPQGNS MRLAEVIGRVTDSKCDPTVLGGTWIVHRDTTMTVRGREEA $M \square L G E V V A K V W P D K \rrbracket L P T L Q G R R L V L V R P$ RSEGPD

|  |  |
| :---: | :---: |
|  |  |
| UniRef90 C3JQC4 | AWDTCGTGI GDWVALAEGPEAAQPF SDVKPLDASIVA |
| UniRee90－UPIO0047C6F44 | MVALDVLGCGVGESVLITTGSVAAAYFTK】KAPVDALI IGG |
|  | A MD |
| UniRefs | VIAVDSVGAG！GETVLVAQGSSARQTTFTKNKPVDAVIMA |
| UniRet90－WC | VLATDPLNAGLHQRVLFTDGSATRDLVKDSHSPLRNLVFA |
| UniRef90 D6Y0M4 | AADM GAGKGEHVL |
| UniRef90－F2AL46 | VAWDLVGSRNGDWVALIEGPESAAPFRPEVKPVDASIVVA |
| UniRef90－Q3SR50 | SVATDPVGAPPGKWVFTAAGTAARMAMPDRTVATDLAI CG |
| UniRet90－R9N | LVAVDNIGAGDGDYVLVAQGSAARKGCAAADAPVDAAI ${ }^{\text {a }}$ |
|  | AWDLCGAGEGDVVALAEGPEAAAPFKPDVKPIDASIVA |
| UniRef90－13BS | LVATDPIGVPAGKWVFTSSGSAARFGMGDADIQTDLT L G |
| UniRet90＿Q3S | AVAVDPVGVPEGKWVFTAGGSAARYGAGDYRILTDLT |
|  | AL |
| UniRef90＿B3QS52 | QVATDPLGARAGNRVFTVNGSAARYAQGDYSVLA ${ }^{\text {a }}$ |
| UniRef90 UPI00 | AGAGPGDRVLVATGSAA RVAAGAGVPVDAAI VG |
|  | NVAMDPVGVPPGKWVFTVAGSAARYAAGDFEIUTDLTIGG |
| UniRef90－R7CL | LVA』DMI GAGVGEYVLVAQGSAAR\｜GCGVETAPVDAAIVG |
| A1 |  |
| UniRef90－B4EYG3 | YVAVDSVGAGINDVVLTGSAEEYFALNKDRYKAMSVVA |
| UniRef90－B1ZR94 | AVDPLGAGLHEVVILTDGSATREFVRDPKSPLRNLII G |
| 0S283 |  |
|  | G |
| X1H |  |
|  | A |
| $\begin{aligned} & \text { UniRef90_D3RQ43 } \\ & \text { UniRef90_I6Z2G5 } \end{aligned}$ |  |
| UniRef90－Q0RVS4 | YVALDHLGSGPGDHVLVADGSAVAHHLPG STPADALII G |
|  | DGLGAAQGDLVVITDGKTVRETVKAEDSPIRFMSLG |
|  | AMDPVGTKDGDWVFTUANSAARDAAGDKRLLTDLTVGG |
| UniRef90－WOIU19 | TVVYEALGAAEGQIIGFTEGAEASAPF DKPTPVDAYAAA |
| UniRef90 DOLNL5 | VVD |
| UniRef90－A5EF | DVAVDLVGVGAGQEVLVTSGTAARVASGNPSSSADAAIVG |
| UniRef90－Q75W35 | LVAMDPIDVKPGDWVFTIANSAARDAAGDKRLLTDLTVGG |
|  |  |
| Unil | IVAFDVLGTGVGERVLVAQGMSAARRFPD NAPIDALI |
| UniRef90－M5UC28 |  |
|  | VA |
| UniRef90－A0A023DIU0 | VICADRIGAGHGETVIVSRGSSAR ILITSKDSPVDAVVVG |
| UniRef90－A4A2L8 | EAAQPFYPEDKPVDAYNAA |
|  |  |
|  | AVALDPIGCKVGEWVFTIANSAARTASGDDRFLTDLTISG |
| UniRef90－D0KZ87 |  |
| D2QXB1 |  |
| UniRef90－LODA62 | VVVYD ${ }^{\text {a }}$（ GAGPGSLTGLSEGREAANPFGKVKПPVDAYCAC |
| UniRef90－ 1 1Z | VIVYDELGAGIGSIIGFTEGAEATMPFTG DAPVDAYCAC |
| UniF | YVAVDTVGAGVGEVVLVATGGAA RVAAGADAPTDRAVVA |
| UniRef90－B5JM34 | G |
| UniReef90 A0AO23S751 | WVAVDSVGAGMHDVVL |
| Un | VAVD ${ }^{\text {a }}$ ， |
| UniRef0－UPIO0029AF676 | VVAYDEAGASPGAKIGGFSEGGEAANPFAPNYKPLDAY |
| UniRef90－U2 | LVCADCVGAGEGETVLVATGGAARVAAGAE LPIDAA VG |
| UP | GDDRLLTDLT AG |
|  | AVDSVGAGVGELVLLCSGSSARHVFSGPNEAIDLAVVG |
| Ref90－x1vc | LAAADSRRVGEGELVHYS |
| B5JM35 | PVVYDKLGAGVGDQLYVEGAEATQPFPYP |
| UniRei90－UPIO003615227 | DNLGAGVGDVIIGFITEGVAANPFSDPPIPI |
| UniRef90－E8R089 | DDLGAGTGLLVGFSEGREAANPFGENP迷AVDAYVAC |
|  | A |
| UniRef90 UPIIOOO3EB5B1C | AVGNRRVGTA GQRQFRAPGASQRUITGRSVR |
| UniReef90 M5 | REMTKHENTPARWSVIGG |
| 析 |  |
|  |  |
| UniRef90－H6P4E4 | DSVGAGVGELVLLSGGSSARHVFSGPNEA【DLIVVGG |
| $\begin{aligned} & \text { Unire } \\ & \text { UniRE } \end{aligned}$ | WVAVDSVGAGVGDVVLVARGNAARSVFAEPNSATDSATTA |
| Uni | VAVDPLNAGVGTTVLVVTDEAAAAVAG ETTVDAAIVA |
| UniRet90＿UPI00030FAA99 | VCYDPMGCGI GERVMITIGAAWWFAPAHPRVVADALI A |
| UniRef90 | LVAIIDRVGAGI QSIVIVSTGSSARVGLHKDNVPIDATII G |
|  |  |
| UniRef90－D5SXL | DELGASPGDII AISEGAEASAPFHPDSKPLDAYNAC |
| UniRef90＿F4FAP8 | LVAIDPLNVGVGTVVLI |


| UniRef90 LOD9R7 | L ${ }^{\text {P }}$ D R |
| :---: | :---: |
| UniRef90- $33 J Q C 4$ | S I D R |
| UniRef90-M5RF17 | LLDEVDL |
| UniRef90-_UPI00047C6F44 | SIDE |
| UniRef90-X1D6D9 |  |
| UniRef90-17A0F5 |  |
| UniRef90-WOIYQ8 | 1 V ${ }^{\text {d }}$ |
| UniRef90-D6Y0M4 | 1 L D R |
| UniRef90_UPI00047BEFFE | SI D E |
| UniRef90-F2AL46 | 1 L D HCEV |
| UniRef90-Q3SR50 | 1 I DGWEEEG |
| UniRef90-R9MJ75 | 1 I D |
| UniRef90-M5UHA7 | 1 L D HVEEDD |
| UniRef90_I3BSV2 | 1 I DYWDEE |
| UniRef90-Q3SES0 | 1 I D Q WDV |
| UniRef90-L7CGX5 | L I D E |
| UniRef90-B3QS52 |  |
| UniRef90-W9VXP3 | 11 D |
| UniRef90-UPI00047C6939 | I V D HVE |
| UniRef90_UPI0004636120 | 1 I D F WE |
| UniRef90-R7CLN3 | 1 D |
| UniRef90-A1U9B3 | SID |
| UniRef90-B0P8J0 | 1 I D T CH |
| UniRef90-B4EYG3 | 1 VEKVYRDSKE |
| UniRef90-B1ZR94 | 1 V D |
| UniRef90_10S283 | SID |
| UniRef90_B8GQP3 | IID H WD D D E |
| UniRef90-X1HQN0 |  |
| UniRef90-D2QXA9 | 1 CD |
| UniRef90-D3RQ43 | 1 I D W WD |
| UniRef90-I6Z2G5 | I V DK $\square \mathrm{D}$ Y NENEL |
| UniRef90_Q0RVS4 | V I D |
| UniRef90_D5SXL3 | L V D |
| UniRef90-Q31HD4 | 1 I D DWQ |
| UniRef90-W0IU19 | 1 I D T 1 S |
| UniRef90-D0LNL5 |  |
| UniRef90-A5EF45 | 1 D D WS E E |
| UniRef90-X1G138 |  |
| UniRef90-Q75W35 | 11 DDWQPE |
| UniRef90-R5EHE9 | LVDE |
| UniRef90-UPI0003606129 | SV DETSTTHR |
| UniRef90-M5UC28 | L V D |
| UniRef90-LOMA84 | I V EKV ${ }^{\text {d }}$ R |
| UniRef90_K6ZFT5 | I I DEVTSNKSSWFKK |
| UniRef90-A0A023DIU0 | 1 V DSFE |
| UniRef90_A4A2L8 | 1 L D TVHLR D Q |
| UniRef90-17A034 | L V D S V |
| UniRef90-F6DAY5 | 1 I DNWP ${ }^{\text {d }}$ D |
| UniRef90-D0KZ87 | 1 IDHW |
| UniRef90-D2QXB1 | IIFDDLDRDD |
| UniRef90-U1A7Z3 |  |
| UniRef90-LODA62 | LLDRLS |
| UniRef90_B1ZR95 | 1 V DQVD |
| UniRef90-F4CZ24 | 1 AD T V I R S G T V S Y R K |
| UniRef90-B5JM34 | L V D |
| UniRef90-A0A023S751 | 1 VEKVFRD |
| UniRef90-X3EPB0 |  |
| UniRef90-E7C203 | 1 V D EVYESENT |
| UniRef90_UPI00029AF676 | 1 L D T I EVD |
| UniRef90-U2B907 | 1 L D E |
| UniRef90-UPI00036C2B92 | 1 I DRRSCD |
| UniRef90-W1H7X9 | IVDSLSR |
| UniRef90-X1VCX8 | HVERID |
| UniRef90-B5JM35 | L D S FQ |
| UniRef90-X1TZ14 | I L E HVS $\mathrm{V}^{\text {N K K E } ~[~ L ~ N ~ K ~}$ |
| UniRef90-UPI0003615227 | L V D E |
| UniRef90-E8R089 | L L D QVD |
| UniRef90-FOSHA4 | 1 LD HLDIED |
| UniRef90-UPI0003EB5B1C |  |
| UniRef90-M5RRE2 | L I D Q |
| UniRef90-X0XLB7 |  |
| UniRef90-X0U345 |  |
| UniRef90-H6P4E4 | IVD T L S R |
| UniRef90-T5V4S9 |  |
| UniRef90-L8E886 | I V D S D |
| UniRef90_UPI0003720465 | L |
| UniRef90_UPI00030FAA99 | SL D N Y D |
| UniRef90-S6ER62 | 1 V D E |
| UniRef90-X1FRV5 | I V D MVEEY C (1VFKK |
| UniRef90-X0RLI6 | 1 V D A |
| UniRef90-D5SXL1 | L L C L E L |

UniRef90-F4FAP8

```
11 D RWD
I V DK \(\square\) DYNENEL
V
1 I D DWQ
```

1 DD D WS E E
1 DD WQPE
VDE
SVDETSTTHR
i V EKVHRE
I I DEVTSNKSSWFKK
IVDSFE
VDTVRDQ

- D N WP LD
1 IDHW
L L D R L S
1 V DVD
L V D
IVEKVFRD
IVDEVYESENT
1 L D T I EVD
1 I DRRSCD
IVDSLSR

| HV |
| :---: |
| L L |
| E |
| R |
| S |

I L E HVS $\square$ NKKE【LNK
LVDE
$\left.\begin{array}{cc|cc|c|c}\mathrm{L} & \mathrm{L} & \mathrm{D} & \mathrm{Q} & \mathrm{V} & \mathrm{D} \\ \mathrm{C} & \mathrm{L} & \mathrm{D} & \mathrm{H} & \mathrm{L} & \mathrm{D} \\ \hline\end{array}\right]$ E
L I D Q
IVDTLSR
1 VDSFD
SLD N Y D
IVDMVE E Y DK $\quad$ VVFKK

| L L | D | K | I |
| :--- | :--- | :--- | :--- | :--- | :--- |

lupas_21
lupas_14
lupas_28
jnet
conf

ol25
$B$ B $\quad \mathrm{B}$

| $\substack{\text { sol0 } \\ \text { jhmm } \\ \text { jpssm }}$ | $10 \mathrm{~B} \quad 20$ | B B | 30 |
| :--- | :--- | :--- | :--- | :--- |


|  |  | 50 |  |  |  | 70 |  | 80 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| sol0 | B B B | B | B | B | B |  | B | B B B B B |
| jhmm |  |  |  |  |  |  |  |  |
| jpssm |  |  |  |  |  |  |  |  |

$\square$


