QUERY
UniRef90 E31617
UniRef90-A8TZ2 UniRef90-UPI00047E884E UniRef90 UPI0001D2F1F2 UniRef90-A1BH38 UniRef90-UPI000467B6B8 niret90 A1VNA4 UniRef90-KONNA9 UniRef90-W7T038 UniRef90-H6SJA2 UniRef90-UPIOOO3754B72 UniRef90-WODTF3 UniRet90-G2GZZZ7 UniRef90-A5GBX7
UniRef90-UPIO004632BF9 UniRef90-D5WX21 UniRef90-U3R5K6 UniRef90-A0A011MFG0 UniRef90 UPIOOO3B55596 UniRef90_UPIO0047DD051 UniRet90_UPI0003632232 UniRef90-V6F4UO UniRef90- N8QOM9 UniRet90_-_3SA95 UniRef90-E8WND6 UniRef90-UPIOOO42882F4 UniRef90_C7RQ70 UniRef90_K5YTJ1 UniRef90_S5Z1G3 UniRef90-UPIO0046361C8 UniRef90_BYAE4 UniRef90-Q221C9 UniRef90_UPI00047AOA47 UniRef90_Q12HL3 UniRef90_WOSDQ6 UniRef90-M2Y4Y4
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UniRef90 - 66 H 1 M 8
UniRet90_S6A9D4
UniRef90-UPIO0037AC875 UniRef90-A3Z165 UniRef90-10GDDO UniRef90-A8GUQ1 UniRef90-UPIO00301FA37 UniRef90-10IRJ3 UniRef90-UPIO0035FBFEF UniRef90-UPI000366ACA8 UniRef90-HOTBW2 UniRef90-UPIOOO47D1282 UniRef90-K9RN14 UniRef90-F8B3M1 UniRef90 AOAO11MG73 UniRef90-UPIOOO36E56FF
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UniRef90-F6ETE6

MTHWQVQDAKAHLSEVIERAQGEGPQIITRHGAERAVVLS TWSVQDAKNHFSEVVEAARRGGPQTVTKHGKPAVVVLS м H MK
MK

M H T W WQLQ ABAKNHLSEKVVRNATVNGPQAIVTLHGKPSAVVIS
WQLQQAAKSRFSELVVDLALSEGPQLVTRRGQDAVVIVVS
HH
NE
NLVETAQQKGPQIVTKHGKEAVVIVLS
 MS GWQVQEAKQRFSEVVRRAVSEGPQVVTRHGEEVAVVI D
 REWQLLQEAKNRRDSQVVDSALVHDGPQTITRRGGKPAAMVVM MKS WPVQDAKARFSDLLATTVKEGPQMVTRRGVDMAVMVP KTWQLQDAKNRLSELVNKAMRNGPQMITVRGKPAVVVVS MKAWPVQDAKARFSEFLDACLSDGPQMVTKRGAEAAVLVS MQT WQMQTAKAQFSDVVKRAADEGPQEITVHGRPVAVVIS MQSWPVQDAKARFSEFLDRCLDQGPQMVTRRGLPAAVLVP M E WQTQE AK AKFSEVIA CALT DGPQSITRHGRDLAVVLS $M$ H A WQ VVQ D A K A R F S S E L L
 M Q E

WQLQEAKNRLS
$M H T W Q L Q D A K S R F$
$M R T W P V Q D A K A R F S$ MREIQLRDAKASLS

MWTLQDAKNRFS

WHLQ
T WQ
MAN
MNT
MHTWPVQDAKARFII
MNTWQMQEAKARLS
MRTWQMQEAKAHL MOTWQIQEAKAHLSELVRDTESAGPQEITWHGRVVAVVVS MQS WQMQNAKARFSELVKHAAQEGPQDITDHGKSVAVVLS MNTWKLQDAKAKFSQVVENALKMGPQYVTRRGKDAVVVLS MSVWQVQEAKARFSEVVKKAETEGPQDITLHGRPVAVLLS MQAWPVQDAKARFSEMLEACTTHGPQMVTKRGVEAAVLVP abler MHKWQVQEAKARLSTVLRSAEQDGPQDVTHHGRSVAVLLS MKSWPVQDAQDHFNELLEACLTDGPQVLTRRGADTAVLVP MQS WQLQTAKARFSDVLKSAKQDGPQDITVHGKSVAVVVS

TWSLQDAKNRFSAVVDAALLGQPQWVTRRGKPVSVILS | MKTWKLQDAKSHFSKLVEQALKKGPQYVTRRGVEAVVII S |
| :--- |
| $M Q T D P V Q E A K A R F S E L L D T C L A E G P Q V V T R G V E A A G L V$ | M MRAWQMQ

KTWQMQDAKARLS
MWTVQDAKNKF
$\qquad$
TWQLQEAKNQFSKVVDLAVTVGPQIVTRHGEPVAVILS MSRW

WKLEDAKARFS
WHLLDAKNNFS
WQMQEAKQRFS $R T W Q L Q E A K A R F$
$N T W Q L Q D A K K F$
N
$\qquad$ NTWQLQDAKSKF
MWTLQDAKNKFS
mTRWQLQDAKARLS
MQ WHLKDAKNNLSKFVRQAREQGPQTITVRGKPTAVVLS MQAWQLQEAKARLSEVI QKATNEGPQDISLRGRPAAMILS MQA WAVQDAKSRFSEFLDACLEQGPQVVTRRGVEEAVLVP WTLQDAKNRFSAVVDAAARGEPQKVTRRGTWVSVVLS
TWTLANAKARLSEVVDRAQTGGQVITRHGRPNAVVVS MNKWQLHEAKNKLSNVVDAMQGTPQCITKRGEEAVVVIS MDSWSVYDAKSGFGELLDACVNKGPQMITRRGVETAVLVD KQWSLQDAKNKFSAVVDAARQGKAQVITRRGVPSAVVLS MREDQLRDAKATFSAVVDQAVHGTPSVITRRGRKEVVVLS MATWQLQTAKARFSEVLETAAAEGPQIVTKHGKDYGVIMS
KYWQLQEAKNKFSEVVDKADNEGAQVITRRGVEVAVVVS SWQVQEAKQRFSEMLRAVAQDGPQT SRHGQDAFVVID MREWALQDAKARLSEVVRLAMEHEPQEITLRGEPAVVVLS WQLQDAKARFRDVVRRAVEQEPQHVTVNGEERAVVVS
KSWALQDAKARFSNVVKKAENEGPQFISVRGKPSVVVIS

| WK | $L$ | $E$ | $D$ | $A$ | $K$ | $A$ | $R$ | $F$ | $S$ | $E$ | $V$ | $V$ | $R$ | $L$ | $A$ | $R$ | $S$ | $E$ | $G$ | $P$ | $Q$ |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


| QUER | \GEEWR R L Q A A |
| :---: | :---: |
| UniRef90_E31617 | MEDYRRLAAGS |
| UniRef90-A8TZ22 | A NEYER |
| UniRef90-UPI00047E884E | VEWNRLTNAA |
| UniRef90_UPI0001D2F1F2 | V DE WRRLT |
| UniRef90-A1BH38 | FDEYNK |
| UniRef90_UPI000467B6B8 | VE E Y D R L T |
| UniRef90-A1VNA4 | AK ${ }^{\text {a }}$ YRRMS GGA |
| UniRef90-K0NNA9 | 1 K E Y K R |
| UniRef90-W7T038 | 1 A E Y R R L |
| UniRef90-K2CQ20 | YAEYEK |
| UniRef90-H6SJA2 | VEE WDR |
| UniRef90-UPI0003754B72 | I A E Y R R ${ }^{\text {L }}$ R GE |
| UniRef90-W0DTF3 | I EMWRQLQSSA |
| UniRef90-G2GZZ7 | I T E WKRLNSAA |
| UniRef90-A5GBX7 | FEEFKKL |
| UniRef90_UPI0004632BF9 | 1 DEWKRLT T GAA |
| UniRef90-D5WX21 | VQE Y ER |
| UniRef90-U3R5K6 | A A EWRRLHAAA |
| UniRef90-A0A011MF | RELFDRLSGNS |
| UniRef90_UPI0003B55796 | VTEWQRLQAQA |
| UniRef90-UPI00047DD051 | REDYDRLR |
| UniRef90_UPI0003632232 | A EWKRLNQSA |
| UniRef90-V6F4U0 | QDEYER |
| UniRef90-N8Q0M9 | E EWQRLT SAA |
| UniRef90-F3SA95 | YEEYRRL |
| UniRef90_E8WND6 | $\square E E Y K K$ |
| UniRef90-UPI00042882F4 | APEYRQLA |
| UniRef90-C7RQ70 | V D EWRRLQATA |
| UniRef90-K5YTJ1 | F E E W |
| UniRef90_S5Z1G3 | A E D Y |
| UniRef90_UPI00046361C8 | AEEYEA |
| UniRef90-I3YAE4 | VDVWRRLQ A A |
| UniRef90-Q221C9 | NADYRRLQARS |
| UniRef90-UPI00047A0A47 | MPDYRALT |
| UniRef90-Q12HL3 | RAEYARL |
| UniRef90-W0SDQ6 | 1 A D WK RLR G S A |
| UniRef90-M2Y4Y4 | V HEYER |
| UniRef90-UPI0003B58F52 | L DE WKRLQSAA |
| UniRef90_C7RLJ9 | RAT FERLS GS |
| UniRef90_UPI000374EFF7 | KAEYERLT G |
| UniRef90-A1WS01 | REDFDRLS G |
| UniRef90-15B7K7 | VKEYQK |
| UniRef90-UPI000345C551 | IE E Y R H L |
| UniRef90-UPI00036F3D44 | QKQYESLS G |
| UniRef90-W1S5I4 | A AEWHRLQSRA |
| UniRef90_UPI0003FA08F9 | EAE |
| UniRef90-UPI000348FDF9 | RADYDR |
| UniRef90_L8NSN4 | MAEWVRLT |
| UniRef90-A9BWR5 | MQEWRRLHPAA |
| UniRef90-K2DHU3 | RELPDRLS GNS |
| UniRef90-H8Z0F6 | VEAYERL |
| UniRef90-E1YE57 | 1 K D Y A A |
| UniRef90-UPI00035C14C9 | V DEWRRLTAAA |
| UniRef90-E9UPZ9 | D D Y R R |
| UniRef90-A0A024ILT1 | KEDFDRMS G |
| UniRef90-W2U0L0 | WEAYARLAG |
| UniRef90-D5AVI5 | VEEYRRLLA G A |
| UniRef90-L7VZA1 | MS EYRKLVA |
| UniRef90-UPI00034AC7F6 | VTEYRRLLG |
| UniRef90-Q7N103 | VA Q P K L |
| UniRef90-UPI00047AC474 | PEEYER |
| UniRef90-K0F938 | IDEEWDQK |
| UniRef90-F7YED6 | AEDYDRL |
| UniRef90_UPI0003815CB9 | A EYRRLRGE |
| UniRef90-UPI000362EA3E | WATYTRLRG |
| UniRef90-13C067 | F EEYTK |
| UniRef90-K2BUZ6 | QEDY $\mathrm{L}^{\text {A L }}$ |
| UniRef90-F7ZB12 | ASEYARLQRAA |
| UniRef90-Q07J23 | ADEFRRLQGE |
| UniRef90-UPI000377E500 | DETYEAM |
| UniRef90-X6H1M8 | PENYDRLVGA |
| UniRef90-S6A9D4 | HADYEML |
| UniRef90_UPI00037AC875 | VEVVWR R Q Va A |
| UniRef90-A3Z165 | AEEYERL |
| UniRef90_I0GDD0 | A DEWARKTA |
| UniRef90-T1CZS1 | AEEWERKT |
| UniRef90-A8GUQ1 | MKYYEQL |
| UniRef90_UPI000301FA37 | CADYRK |
| UniRef90-10IRJ3 | VA LDW RLS QEA |
| UniRef90_UPI00035FBFEF | LEEFEKFQ |
| UniRef90-UPI000366ACA8 | Y E E Y K K |
| UniRef90-H0TBW2 | Y EEWERLS |
| UniRef90-UPI00047D1282 | Y T D Y H |
| UniRef90-K9RN14 | Y T E Y R Q M I A S |
| UniRef90-F8B3M1 | IEEY Y R L K G |
| UniRef90-A0A011MG73 | VEDCRHLA Q |
| UniRef90-UPI00036E56FF | FEDYEK |
| UniRef90-UPI000372DC15 | A QEYDRLTGH |
| UniRef90-K2BTM6 | QGDYFALI ${ }^{\text {a }}$ |
| UniRef90-F6ETE6 | A DELE |
| UniRef90_UPI00045EAD87 | AEEYARL |


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| :---: | :---: | :---: |
|  |  |  |
| UniRei90-UPIOOO479E06E | EWSVADAKARLSEL |  |
| UniRef90-ToY | ILQ |  |
| UniRef90-D1KCR7 | S WQLQDAKSKFSQLVENAMHNK | KHGNNAVVVLA |
|  | ENWQL QKAKNQFSDLVRKAQEKG |  |
| UniRef90 ${ }^{\text {-W }}$ - <br> UniRef9 | $1 \text { WALQDAKN }$ |  |
| UniRef90 S9Z | MQDAKNR |  |
| UniRef90-G8NY) | T WQLQEAKAKLSSE |  |
| UniRef90_M5F5S8 |  |  |
| UniRef90-UP100047A | E |  |
| UniRef90 D7B3Q | QQVQEL |  |
| UniRef90-K7 | SPLQEA |  |
| KOE | V | D |
| UniRef90-A0AO21VS87 | V $Q$ | D |
| UniRef90-W6S7C | QLQDA |  |
| UniRef90-A3K710 | QDAKNRFSAV |  |
| UniRef90-A3XES2 | MWTLQDAKNKFSTV | KSAVVVLS |
|  | SWKLEDAKARFSEV |  |
| UniRef90-F5Y1A0 | T Wo | A |
| UniRef90-M5F318 | MRTMQVREAKASLSALVEAAANGE | S |
| UniRef90-E8TNZ7 | ETWQMQEAKARMSELVKRAQAG |  |
| UniRef90-E8TZZ4 | wovo |  |
| UniRef90-B9JDD4 | WSLET | S |
| UniRef90-C4K534 |  |  |
|  | MWTLQDARNRFRSVVEAALAGVPQ |  |
| UniRef90_UPIOOO47A | A WK |  |
|  | WQLQEAKARFSEVVRRAVECGPQHVT | $S_{A}$ |
| UniRef90- A1VLJ9 | AWR ODAKA FALVNARGD | S |
| UniRef90-M1MPB2 | QTWKLED |  |
|  | RTWP |  |
|  | wa |  |
| UniRef90-X6CJQ4 | M Q |  |
|  |  |  |
| 隹 |  | Sic |
| UniRet90 E8WXD | MATWG | RYGR |
| UniRef90-W9H4A1 | MREISLEEAQATLSAMIDDAV | R H |
|  | TWNLEAKNRLSEVV |  |
|  | 1 WQ |  |
| UniRee90 UPIIOOO379963B | K EL |  |
| UniRef90-K2NX21 |  |  |
| UniRef90 U1YXP4 |  |  |
|  | , |  |
| UniRef90_UPI000465BD89 | HAKSRLSEL |  |
| UniRei90 - UPIooo3b57672 | L | S |
| Un | W |  |
| UniRet90_UPIIOO0469A615 | QVQ |  |
|  |  |  |
|  |  |  |
|  |  |  |
| UniRef90 A7BS83 <br> UniRef90 UPI000361D831 | MQE WAL | S |
|  | WTV | VGkPsVVVVs |
| UniRef90-W4M528 | RLAEAKNKFSELF |  |
| UniRef90-X6GIW4 | H $\square \mathrm{NI}$ REAKATLTAL | RHGKPVAAIVP |
| UniRet90-UP100036 | MQWRLADAKNRFSEV |  |
|  | S WTV |  |
| UniRef90 UPIOOO35E5B6C | R RWSL |  |
| UniRef90-U10 |  |  |
|  | $\begin{aligned} & T \\ & S_{1} \end{aligned} \underline{L}$ |  |
| UniRef90-AOAO24J513 |  |  |
| UniRef90-V5BJW4 | MRTMTSVEAQNRFGELLDAAQREPV | RRGRPV |
|  | MRTMNYSEARQNLAEV |  |
| UniRef90 V7FN39 | MRESSLKDARTTLSALLDQVVAGEP | S |
|  |  |  |
| UniRef90-B1WUX3 | MKKLAASDAKNRFGEMLD | GRNVAVVLS |
| UniRet90-W11Q08 | MK\PAQLAKNQFGELLMKVQRE PV | K CVAVVMS |
| UniRet90-K6YNE6 | MKS TATEAKNNFGDLLMNAQS AP | S |
| UniRef90_F1YHW8 | MTTVPLGEAKARLSALVDSAEQTHD |  |
| UniRef90-S310S | KTLGASEAKNRFGELVDLARREP |  |
| UniRef90_X6G |  | P |
| UniRef90-UPI0002D9E547 | mstostk | P |
| UniRef90-A5EZ12 | MHTLTANDAKRNFGELLTSAQREPV | KNSKNTVVVMS |
| UniRef90-S5EKU8 | MHILTANEAKTQFGDLLLKVPGEPV | RNGKPVAVVVS |
|  | V |  |
|  | S | A |
| UniRef90-Q1 | RYWKVEEAKANFSRLLRAAEKEP | RHGKPVJAVIP |
|  | MKP |  |
| UniRef90 D5EPU9 | MKRWK |  |
| UniRef900 ${ }^{\text {Q8 }}$ | M | VAVIMS |
|  |  |  |
| UniRef90-G7UNN0 | M | S |
| UniRef90_EIYJGG |  |  |


| UniRef90_H8Z6B3 | H\|L|R G Q A |
| :---: | :---: |
| UniRef90-E6VPR6 | ADEFRRLKG |
| UniRef90-UPI000479E06E | VEE W |
| UniRef90-T0Y5K4 | A E F R R $\square \mathrm{K}$ K G |
| UniRef90-D1KCR7 | FSEYEKM |
| UniRef90-B3EPA2 | MK ${ }^{\text {P }}$ R N |
| UniRef90-W4M4K7 | VQDFQQLSAG |
| UniRef90-S9ZPI4 | V H E Y R R M S A A |
| UniRef90_G8NYX9 | MDEYE |
| UniRef90-M5F5S8 | VEEFRRDKG |
| UniRef90-UPI00047A40F5 | FKEWERVS |
| UniRef90-D7B3Q9 | MEEYRRLKGES |
| UniRef90-K2JTF4 | $\square$ ¢ E WRRLTAS |
| UniRef90-Q746J1 | WETYARLTGE |
| UniRef90-K0EQ88 | 1 N EYRRL |
| UniRef90-A0A021VS87 | 1 A S Y R RLA |
| UniRef90-W6S7C3 | AREYDAL |
| UniRef90_A3K710 | A EEYARLVHAA |
| UniRef90-A3XES2 | TSEYRSLLADA |
| UniRef90-K0VS40 | VEELLEQLIKA |
| UniRef90-F5Y1A0 | V DAHEATQPA |
| UniRef90-M5F318 | 1 D E G R K |
| UniRef90-E8TNZ7 | YSEYERL |
| UniRef90-N6YMF9 | RET F DRLS QA |
| UniRef90-E8TZZ4 | $\checkmark$ A |
| UniRef90_B9JDD4 | V E D Y D R L M P A |
| UniRef90_C4K534 | FTE WN |
| UniRef90-A4WZZ3 | VED Y H RLLS A A |
| UniRef90-UPI00047AFA97 | A A P ARLAPTA |
| UniRef90_LOH1G9 | T E D Y VRL |
| UniRef90_UPI00036DF711 | RADYDGL |
| UniRef90_A1VLJ9 | EQDFEALQRSA |
| UniRef90_M1MPB2 | ADQFAK |
| UniRef90-K7QYZ6 | Y E D Y L A L K G E |
| UniRef90_UPI0003B5A4DB | REDYEKL |
| UniRef90-X6CJQ4 | VEDLQKLYPA |
| UniRef90-X6B0M5 | PDDYDQLIGA |
| UniRef90_U1GXM4 | AEEWARRTA |
| UniRef90_E8WXD7 | \DEWKRL |
| UniRef90_UPI00046464FB | FEEWERLAKA |
| UniRef90-W9H4A1 | F T EWERLS G |
| UniRef90_G7ZV55 | A ARYDELVG |
| UniRef90-F5YGU4 | M D K Y G L M G |
| UniRef90-UPI000379963B | YQEWK |
| UniRef90-K2NX21 | VEDYKRLSTEA |
| UniRef90-U1YXP4 |  |
| UniRef90_14Z275 | WDEFR |
| UniRef90-UPI000465BD89 | A AEYERLNRGA |
| UniRef90_M2ZI37 | 1 V D Y R R L A G G |
| UniRef90-UPI0003B57672 | VEEY |
| UniRef90-F5YG37 | CREYQKL |
| UniRef90_UPIO00469A615 | Y D E WL R L |
| UniRef90-SOFYK5 | VA E Y E K |
| UniRef90_UPI000399D70B | AEEWER |
| UniRef90_A0A011SSE2 | VEEFERLAPE |
| UniRef90-A7BS83 | LK A Y E KLNQ |
| UniRef90-UPI000361D831 | VEAYAK |
| UniRef90-X6JTD6 | AEEWQR |
| UniRef90-W4M528 | AS D Y R R T G S |
| UniRef90-X6GIW4 | IE E A R K |
| UniRef90_UPI00036634A2 | LQD Y Q RLLG |
| UniRef90-A7IQJ4 | AEEWSRK |
| UniRef90-UPI00035E5B6C | AEEFDRLQRPA |
| UniRef90_Q1QKD5 | FEEWERMSKA |
| UniRef90_UPI00047DF76F | 1 E D G R |
| UniRef90-A7ICQ9 | VEEYERLTVA |
| UniRef90-A0A024J513 | AEEWQRKT G |
| UniRef90-V5BJW4 | QHEYDALSQA |
| UniRef90-W1FNU8 | AEEFERYQAA |
| UniRef90-V7FN39 | FQDYEKL |
| UniRef90_UPI000463E4FF |  |
| UniRef90-UPI0003829ACC | V E E |
| UniRef90-B1WUX3 | TEEFERL |
| UniRef90-W1IQ08 | PEEYDQF |
| UniRef90-K6YNE6 |  |
| UniRef90-F1YHW8 | ADDLEEL |
| UniRef90_S3IQS9 | 1 E EF |
| UniRef90-X6GYC8 | VAEGRKL |
| UniRef90-J8VNY2 | A GLWERVQ |
| UniRef90_UPI0002D9E547 |  |
| UniRef90-A5EZ12 | $\square \mathrm{K}$ D F E E L E A |
| UniRef90-S5EKU8 | AEDYEQIEA |
| UniRef90-V5BRE9 | YEDFNA |
| UniRef90-B8EIW6 | $\square E E Y A R L R D G A$ |
| UniRef90_Q1J2W7 | GAE |
| UniRef90-V6MG59 | K VEFEA Y Q A |
| UniRef90-D5EPU9 | MEEYEQF |
| UniRef90-W4LMV3 | QDVY EQLQ |
| UniRef90_Q82T18 | VQE Y Q M K |
| UniRef90 Q2J2M4 |  |
| UniRef90-G7UNN0 | TEA Y ERLQ |
| UniRef90_E1YJG0 | I K D Y QR\|L |

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UniRef90-I3X6F7 UniRef90_UPI00034D93FD UniRef90_F4XRV7 UniRef90_D7CT99 UniRef90_UPI0003A1B6B1 UniRef90_UPI00047EE1FE UniRef90_G4T437 UniRef90_A0A022GBT3 UniRef90_UPI0004677BEF UniRef90_I4HWQ8 UniRef90_Q0APF0
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UniRef90_A7HJE8
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 MTTFSAQEARQHFSEVVI NKAFAKEPVIITTRSGKNVVAVI S $M K S \square S Q D A K N Q F S K V V Q K A R F E G P Q V V T V R G G R T A B A L S$ MKSIISSKEAQNHFGELMNQAVKS PVVINKYGKPTVVLIS
 HTMS M K T L Q $M K T V A N E A K S R F G E V L L R S Q R E X V Y Y$ M K T ST I A E A K N N L S QL I H QLLE S N E A I H L

$N T$
$K$
$K$
K QFS I A MS S $\square G V K E A K A G L S G L V D D A A A G E F V T$ $\begin{array}{llll}Y & S & L & A \\ Y & S \\ L & A & D\end{array}$ $M Q S \square S A R D$

A
MQT $\square$ GSRQA

## MQT■T A QEA

$M Q T H T A Q E A R S N F S$ $M T E$ A AT DAKNRFGQLLEMAMSE PVAI EKKGRRVAVLLS
 MTEMTVVTDARNKLADVI DDARTHAPVELTRRGRRVAAVDD $M K I Y S V T D A K A K F S Q V V E S V L Q G E E V I V T K M G K P A V T I S A$


 MCRTS A IVEARNNF SALLVMKARARE



 $M Q T L T A N N A K T K F G D L L M K V Q R E \quad P V Q 1$

YS L A D A K A R F S QVVVE E AK T K D NELSARRDARAHFAEVVI T RAQGGT PTII T

 $M M T$ LDLA ARNNLSKVVDDVERTHDVTI MKVVSAREAKHHFGQLI DEARAER VVVTRNGKPSAVVLS

 $M K T \square S L S E A K M K L S A L V E T L Q S N E E V L I T K N G R P A A V L V S$
 MK T L G A S E A K N R F G E L L D L A R R E P V V KI T K K G R N V A V V I S $M L T L G A R E A K N E F G R M L D A A Q R E N V V I$ EKKGRPVAVVLS
 $M E S L S A N E A K T H F G D L L L R V Q R E \quad P I Q I N R N G K A V A V V L S$ MT TMPLTEARNRLSELVD DVERRHERRVV

SMAEVRKHLLADVIDRARRDEPTII
M
 $M N M D P$ L A D A K A H L S D




 $M C R S S S$ S $M K R L S A T D L R R R F G E V I E D A K L E P V L I E K S G R P V V V V L S$
 $M Q T L T A N D A K T R F G E L L D M A Q R E \quad P V Q V$
 MUY LSASEAKQNFTEFLDKAQKE P I T I $M$ Q S V S V S E A K D R L S QL V E S V T T H E A V T
 MK TM M V A D A K A H L L S A L L A A E V E A G D G V I I T MKSVVS



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VE
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AHDYDADRAG
HEEYEKFNQ VDEYNRLKRE V
1 EDFEALEDA
LREYQRLASE
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A D D L E SLQ
EASYQRLAQ
WS QYRLL VGS S
ARNWAAKT

A DE HRHLDA
QQEYERLS
V
Y DKYTKI
YEKYNKI
$\square E E F E R L T A K A$
FEE WQRLSQ
$1 E D Y E L L G G G E$
PEDYEAMR
FAEYQRLT
AEEYDR

| A | $D$ | $D$ | $L$ | $E$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $D$ | $D$ | $Q$ |  |  |

Y Y E NKR L
YEENKRL
AEEFDRLNRA
MAEYER[GT
AEEYKQFK
AEEFDQDEA
YSEYE

ADEYESL
AEDYQRFRAG
MEEYHSLLEA

DEDFNALEDA
M
VEDYQAL
AEDY


PE EYER RL
PDEFE
PEDLDSLQ

AD D L E S LR

| $\begin{aligned} & \text { DE E YQL } \\ & \text { I E E M D } \end{aligned}$ |
| :---: |
|  |  |

VD D Y LiN L ES
PADLEAL

| 1 | $E$ | $E$ | $Y$ | $R$ | $R$ | $L$ | $T$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | $D$ | $E$ |  |  |  |  |  |  |


AD D L E SL
VQSARR
KASYEAYKKA


$\stackrel{A}{1}$ A
VA
ADAYQ
Y EAYR
YENYQRLQ
KESYEAYKRA
MQEYERLT
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AEDHQR\R
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VEEYEAL
I E D Y Q ML


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 M

## 





## $M$ $M$

Y S I A $A$
Y S
1 LP SVSDAKANASSEVVRRAA AGESVVGTRNGKPVAVLLS Y S I A E A K A K F S K V I D E S $\quad$ R E N N V I I T K N GKK P V
L


## $M$ $M$ $M$ $M$ $M$ $M$ $M$ $M$ $M$

 MKTITATEAQNNF GDLLMNAQSE PVSIT

MT TMSAREFNRDVSAAKRAAAEGPVVI ARGRPAHVLLS
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 T RMGKPVVRI T R



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

 TRRRSK P E A V $L$ L $L$ P T R N G V P V A A L V

 | $T$ |
| :--- |
| $T$ |
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| $T$ |
| $T$ | $\begin{array}{ll}T & K \\ T & V \\ T & R \\ T & K \\ T & K \\ T & R \\ T & R \\ T & D \\ T & K\end{array}$ M Q T Y T L T E V V N Q H G K|I F D R A K L L E P V

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$M R Y \square P A F E A K A H F S A L I D A V H G G P F V I A K A G K P L V K V V P ~$
 MDDSTIAHAKNHLPKLIHVAEAGDDIRISRHGKLVAVIIS MKT SVA AKAREAE VERAL GEEVAKMKP A MQSIGSFEAKTHFSSLLQKVEKGEQVIITKHGRPVAKLIP MTVEPGRDVRNHFSDVIDRVEHEERVTVTRNGRPVAVILS MKTVSDRDAKNRLTEEAREVEEGETIVVTRNGRPVFDLVP $T A P L Y D V K A R L S E Y I T Y A E N G E V V E I T K H G T V S A V I I ~ S ~$ MIIVPLAEAKNNLSKLVDDAAAGKVITIAKHGRPLARLVP MTKYSVAEAKAKLSQLVNDTKNKDVVVITKNGHPAAVLMD MTTCTVAOAKAHDSEKKASRSGPVVIVRGRPAHVLIS MRTLSLAEAKTHLSSVLDQVQAGEEIIITRRGKRVARVVP MDTVNIHHAKTQLSKLLERVEAGEEIVIARHGKPVARLVP MKUSNIHEAKTQLSKLIGEALAGEEIVIAKAGKPLVKLI MKN■TVVEAKARFSALLAEVEAGEETAVT KRAARNGPVFI MQS $\square P V V E A K A R F S A L L A A V E A G E E V V I$ MLSFTANQAKTQFGDLMTKAQREPVSI MKTMSYTESRARYAEVLDSVVDDEEVVI MATVSARDVNTDLSELVDEAVIKGGSVAT MAAYNIYEAKTHLSALVEQAVNGEEVILAKAGKPLVKVVP MGTYTLAHTKTHLSEILHQVENGETVIITRHGRPVAKVES MYELSANEVKTHFGDMLDRAQRAPI QU NKNGKLVAVVLS MKTMSYSESRARYAEVLQSVVDDEEVII TRSGHESAVIVS MSTDNTDDARARPELLTVVESEPVFIERRGQRAAVLLS MQTVNIHEAKANLSRRLIDAALSGEEVV MQTYTVTDARNRHGEVFDRAAQEPVL MKTLPLSEVKMKLSRG1DEVGSRDEQVI KNQFGAVLEKATADGAVA MSTTNDAEAKAHLSALVDRVEDGDTIT, MSHTSFTQARANLAKLIQQSQQGEKAF $M R T V A S K A R Q G F A E L L E S V A Q G P V V I$
$M D T V G V E A K T H L S T L L D R V A A E E V V I$ KKATKDGPVF MEQMNVAEAKAKLSELLDAAADGNEVVI

## SASEAK

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 KRAAEHGPVFI
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#### Abstract

KRATRDGPVIIT 


 EKATADGVA TRNGKPAAVLI S TKHNTPKAVLVS TRRGKAVARLTP KKRTGEEVVVIA ERQRRGVAVVMS TKHGRPVARLVG ARSGRRVARLI P IKNGKPIAVIIS TDRGRPAHVLMS








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$M T T Q S L A A V K A H E S Q V D E A G T H E R V T V T K N G S P V A V V M A ~$ MTQVSIARAKNKLAELLARRVEAGETITVTRNGKPVMELVP


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EARANFQELI


 MRVYSVGSARANLPALLDDVQSGQVIQVT YSDAQAKAKLSEVVKESQKDDVLITKNGVPYAALI G MESVNMHDAKSRLSQLVDAVESETEIVI ARNGKPVARLVP MPIESTRDVRAHLAEVVERAERDDPTVITRRGKEVAAVVS MVEVN KEARSHLSELVSKAEKGEETLI MTSUPLADAKAHLSEVISRVKHHERVTVV

KQYNVAEAKAHLSDLLTRVESGEEVMI ARAGRPVARVIA TIGAFEAKTHLSALLDRVEHGEEVVITKHGRPVARLLP TFSSREFNQRASEAKRAASQGPVFIT MRSAPVVEVKSHFSAFLAAVEAGEEIVI MNALTAQELKRRGVAAVEELLGNGPVHVI METVSAFEAKTHLSELLKKVQSGEVFMI MSDLPVSVARSRLDDAVDDARAHEPVFL MKITNIQQAKSQLSKLIEAVLQGEDVII $M K T \sqcup S F S D A R S N L K A V L D R V V D D M D T 1$ MRTVNDHEAKTHLSRDDAAMKGESFI ARAGKPVVRVSP

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RVMTVAESKAHFAELLRFAETGEICVI AKN FGEWHDKAMREPVVI


A
AEEYKR $\square$ AAS
$\stackrel{V}{\mathrm{~V}} \mathrm{~A}$
A
$\square E \mathrm{D}$
KAEYE
A
VD D DE GL KEEWDAI QA DEDYRR品GG YE
1
VDDYETMR
APRY
YDSMTGSS
ERAFDR
LLEDYQA LIE ETA
Y E D F E R R L
ADEYRRFK
EEDYTGLQ
A HDYGA DRAG
! E DYER $\qquad$
A
$\square$ D
YRKY
$\square$ A QGKR
A EA $\square A R R R Q A$

- V E
$\square D$
$F$
$Y$
YDEFRRLSG
EEDWNAI N F E GYQRLT Q
YE Q WKK
TDRYDAL


F
LS DYEELDETA
VE E Y T KLKA

| A E E Y E R $\square$ T G I E |  |
| :---: | :---: |
| VEDYNAF |  |
| ED HRR |  |
|  |  |
| 1 E VLRKYQ |  |
| 1 D D |  |
| $L E D \square Q$ |  |
| 1 E A Y EA |  |
| PEMLARYQA |  |
| DeQYee ${ }^{\text {a }}$ |  |
| $\checkmark$ E E Y E RLK |  |
|  |  |
| G E $\square$ S R |  |
| QEQYD |  |
|  |  |
| 1 D D Y ERDAGH |  |
|  |  |
| PDVLRDRRAE |  |
| YDEYERLS DG |  |
|  | K P PRR |

AE
AE
1 D
DEEYQRMT T
QELLE
A D Q AR
AETFQKL




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 MA QL N I A EA K A HFS EEVVRRAARGEEVVI AKDNHPLVRLVP $T$ N L A D A K A R L S E L A E R A A S GE N : I T R R GK AVV
 MS TVVTVADAKARLS DLLA QVEAGEEVVI TRRGQPVA $M T I V N I H E A K T Q L S R Y V D Q A A A G E E I I I$ ARSGKPVARLVS $M$ DTI TVSSAAARASSLL

 Q S I $\operatorname{N}$ N T A D A K K E E F S E L L
$\mathrm{M} \square \mathrm{T}$ VT Y S R A R E NLGVVL MITVTYSRARENLGVVLDQAIDAGEPVEI


 M D



## E A K T H L S R L LA A VERGERVT

$T S T \square H E A K T N L S K L I Q R A L A G E E V I$ MKA DSYAARANLAKTMRKVEDHDPVI MASFTLTDLGNKSGEVVEAAFR GPVDI MA A Y N I Y E AK T S L L S A L V V K K A A A G E E V VI
$M K Y \square$ S S T MKII NFTDARAKLS DI HKTAVVGEPVII $M$ QSES DR QVRD H L A DVVVDRA DRE E P TVV I MK TMTATEASRNFASSVDSAERGETIVVI

M


 Y N MHEAK T QLS RII D R V E H GE EV I




$\square S \square S K$ A K A K L S




 | $N$ | $M$ | $H$ | $E$ | $A$ | $K$ | $S$ | $K$ | $L$ | $S$ | $Q$ | $L$ | $V$ | $R$ | $A$ | $E$ | $A$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

 MN $\square R P \square S D L R N R Y A D V E R$ KAAANGPV K R A A A N GP
K R A Q A GE E I HiL

 $M K S Y T$
$M L K$
$M$
$M$ UniRef90_B8GV80

| UniRef90_G7Z1J2 | $\text { YD T Y R R L S GE }{ }^{50}$ |
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1 VRD ${ }^{10}$ AKLLSEYLDKARTGDEVJVI ${ }^{20}$ HGKPUARU4 40 MRTTSYSDLRKNLAATLDRVEDHEPVVITRRGKPAAVLI S MKTVNDHQAKTNLSRLLARVEHGEEVISSNGDPVAKLVP MSNVGVAEARKNLASVIERAQRE PVVIARRGRAQAVVVS MSSYSVAEAKNNLPKLLDRMLAGEAVTITRRGVPVA MQTFNIHDAKTNLSREVEQASKGEAFI ARAGKPLVKVTAA MRTVNIHEAKTHLSRLIEEVAAGDEVVIAKAGKPVVRIVP MSGVTIAEAKAHLSELVERAARGATVRLTRGKVIJKI AP K R A A K H G P V T
SVSDARNQLAA!I MTTTSSRDFNQGASR AKKAARKGPVYSRRGRRAAVD MKIVNILEAKSTLSKLIDAVEREKEIVIARHGRPVARLTK $M R Q V T V A E A K V Q R S S L D V V E Q G Q P V V I T R R G K A I A E L V P$



 MESVNMHEAKTRLSOAVARAAKGEAFL

METVNTHEAKTHLSRLVDQAARGEPFII A
MKVVNIHDAKTNLSRLIAAAVAGEPFVIARAGKPLVKVE MREVQASEAKTHLPQLLDDVERGETLITRHGRPIARLVP MQKYSVTEIDNHLSTLIHQMEETGPI ELL MDADTYTHARANLAGTMDRCNDHEPVIITRNGDQSVVILS MA QFNHADAKAHESELVQKALLGEDVVI A MAVVPLGEVRNRLSEYVAEVETHERITIT MSEGGLREVRQNASEVVRAQAGERLTIT MTTVSVTEANSRLSALLRDST EGDVIVERHGRPVGAVI S MARVKLEEAEARLSELLDRVEAGEDFELLRHDKPVAQLVP
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 MKMLSVEEAKDQLGALIEAAKRGEEIVLTENGTPVARLVS
 $M R V V S F T E A R N R L K S V L D N V V N D V D T V I T R R D A E D A V V M S ~$
$M N I V P V S D R R K F P E V E E E V E S G R V F F L K N G Y G T M L M S ~$ MRILPISQLKSKDNEYVDAVCETRDQIITKNGLPAAVLIGG
 M■T TN IREAKTHGSRLVDEAAKGNVFII AKAGKPMVKVLP

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L E D F
F H
A D Q Y D WLK A A A
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