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10 AK $\square^{20}$
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 VA T D L K S D L I F E E I G R R A K D E P A MV K K V N S V F Q F N I T K G

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 ＿L R S R I I F A NTN E K I S K N P E L A A DI Q T I F Q F D I L Q G
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## S

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 GKVAS E WT L D L K N N A E V V H K G K G K A D T T L T I I D D K D D M V
 G S $\square$ A A K WTI DL K NVYY G P A E G S A D T T I I I S D E D FMEVVL G K K QA A Q WTVDLLKTGSGSPKQGKPDTTI TMSDEDFVALVSG GKEAK QWTMDDLKNAKVYEGEGKPSTTMLTDADEDFMLL AQG G K V T S T WT A DL K IG K K Y Y R G E P K A D T T L T I D D S D M I D L A L G K K P A A S WVVDLLK A Y Q GEPK GNKADCTMLTLEDADMVALVTG A GQTGTWYVDAKNGKGSVTFGKADVTLSMNDDDLLKLMTG
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 G GAKQDTWYLDLKNGAGACGTGTPDATLTMNSTNFFDMFSG
 GDEAS $\square$ WF LDLKNGGK GEPTHPPDAVLVMDS QNFFAMFSG G G A E G Y WI I N A K T G K E F D G K E K P D V I F T I S D T D I V D F I S G







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## T

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## S

 SGES $\stackrel{\mathrm{G}}{\mathrm{N}} \mathrm{E}$ K DG GTWF L D L K K SVGFFGDPP NQADVVVMSMSSTEDFMVMFSG PNGEGYWVI NAKTGKTYKGTDKCDVTFIMNDCDVTDLISG GKKGGVWVINAKTGKGSGEFNKPDCTITMTDEDMYDLMMG NK GL WFLDLKSGAGSAGQGQADVVMAMDSSDFSKMFAG GKEEGVWHLDLKNGGQGEPKNPADAVLTMDSNNFADMFAG DGAVYQLILKADSADVAEGTPPADCTLELTADDFKALVEG AGDTESWHI DLKTKGEAGKGEKPGVTLSLSDEEFGKLVAG DGTSKVWTI DAKSAEPYVGDDPVEIEINKDADFGSIAQG DGSGTSYFLDLTKAGHGKPERSPDVILEMSECDMKAMFKG KGEELVWT DLKKAYEGKAKGKADVTINLSDDTFIDLADG E G GTWYLDLKTSSGSAGFGKPDVVMSMSSGDFVKMFTG E
## D

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| K4BU |

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KSEADFNAMTAAIKADGAKVELGGGVFQFVVSDG $M S V A Q V F E Q L E Q N F N A \quad D A A Q G L D L V F Q F N I E D D$ FPASAAFDVIDSVLAERKDADKQANGVFAFTLKNK MKAKTGMELMKQHFETDEELCKKVGGVYQDNGKK DESVTLADVFAGVARFMAGQPELVKTNTVFQFSFHN $M G V K$ EKFQALEKKANENKDVLEDKRTVYGFNLSGE

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 AFPSS
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MSVKET $\square \mathrm{ET} \square \mathrm{D}$ DKMNANPEP $\square \mathrm{SELSYVYQFNLSGD}$ FASMTDHF VKEAAAGVDVVFNFLISGG DEKLQARF NPEAAEGMDEVFQFHFSDA $M P V A Q T F Q K L K D N F N A$ DAASGLDLVFQFDIEDA GFNASALFKELNEGLQDKSEADKGVNAVIIITLKNK EIWQEI EDKLTKDKNPYSDMTGTYQVQUTDE SDSTLDKLHARF DPEAARGMDEVFQFHFSDA LKSA QLLEMVRTHLDAGKELQKKIGGVYQUNTKKM
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EEGDYQLQLAEGKA IVSEGTEGANCTLTLSFANFRQFLLG GNEGGVWYIDLKNGAGSCGKGVPDATFALTSENFVEVFSG GTDVVVYTI DLKKGEVIKKPGKPDATLSFKDEDFIKI ALG QGQEQAWHI DLKETGKVPEGKKADVTLNLTDASFQQLIDG GNRNGVWFLDLKSGSGSAGQGEPDVVMTMDSGDFTKMFAG G DDEVIYTI DLKKGEVIKGQGKPDATFSLKDEDFDKDANG ASPESTWTLDFKNGKGAVVQGKPDVTLELSDADFIGMATG AKETATWTIDMKKTGKGKAQPKADVTIILSDETLIDDANG EGKEEAWHIDDKETGKVGKGEAPDVTLILSDENFAKLISG D GGVF QMII EDPEARAIVKGEEDPSVVLTLAAADDFKSLVAG
 GPDSGKYYLDLKSGKGVVAPGTADCTMVLDSGLFQDMFAG GNDAAKDLKSGSGKVYQNGKGFADA $L$ $D G$ GTFYLDLLKNGGSGDPNEEPDAVLEMT TYDMQMMFSG EKQTATWTVDMKTVYKGTAKPKADVTI ILSDETLQDLATG

 GGTYHVEVADGTMAVHEGPAASPTATLQMNAQEYLKMANG SEESGNWFLDLKNGKGGVGSGEPDVVMSMDSGDFVKMFTGG


 A GETES WF I D L K E GKVVVQ GLD K S DVVEL R L S D E D F G K L VM G A GETDSWHVDDLKETGKVGPCNNPTVVTLLLSSEKEFGDIVFSN TGTD K ITYLDLKNGS GA $\quad$ G GPGGADVLFKCTATAFVKMFNG GSETHQVRLAGGSAEYRQGEEFADCILTMTEANFAKLTAG Q GKEAVWAI DLKNEGKVGPAKRPDVSIADSD DTFDGLADG
 G GSHY LSVQ DGSLGVHEGEHDDPSVSLSLSTDTLKGLMSG GEHAGVWFIDMKNGGGSAGSGEPDVIMTMDSADFTKMFAG Q GKEAVWVI DMKNEGKVGPAKRPDVSIALSDPTFDGLADG TGGEWNAVI KDKTCKVSEGHDKPTTVIIMEDKDFMAMTA G




 GPNGK F ILDDLKNGNGAATYGHADCTMTMAAADWV AL AD G T GGDWNVTVD QK CQVVKK GTAKKPTCTMIKMADDNFVMMVTG KNYHLVIN DGTCQAHEGEHDDPSVTLIMSSETLHGIVSG

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 GTSVVYSWT LDLNTVYEGEPDDDPDTTFTLNEHYFKQLVSG

 KKVGRKWTLNLKDAPGKCYTKEADCTDSLIDDNFMA VK

 E AGETDS WT LDLSEGTDGE GGDKPDLTLTTSSDHNFTQLVMGG E LTTY Q L A F I DLLKKT GEVPAGAKPDITVLSLSEENFGKLVEG G GGE Y Y A F K D G G L S I T N Q S N Q Q A D CIL K M K S A T FRKF L S G G G E S SFFIDDLKNAPGSVGAGQPDVTIADDAKYA DTMEGGG GGTFQVQFCNNHVQVTEGKPNQAQCTLQLSDTNFTKLLQK G G S H Y L I I K D GS L A I E E GE H D D P S V S L S M S S D T L K GV M N G

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 DVTYQQLSFNDGGFSVKKDTNGNADCILVKMNTVFRKFLAG GDVVRDGTLDVQEGVHEE PSVSLSLSTETLKGVMSG GFEEEDFVVDLKNVYK GKAE GKPDATVSFVDGDFIDAVSSG


D D HVQ

 F DEEVGFVVVDLGKKGSK GPYEGKPDATFSFTD DDFQLA I S S G GETYHLLIVKDGACDLDATGEND DANVTVIMNTETLEEGIVVSG E GKD Q S WV LDDLKKE GS DK K VD GA DV E L L L K DVVDFVVKLAE G
 RESNWWVLDL K N GKY E G VAAD NA DV TMMTIQEANMPE LA S G


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


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10
QQRTLEKLLIVV
AKMQSKF
KLVDRMNG NAHAVGG｜${ }^{30}$ $\mathrm{G} \mid \mathrm{V}$



40

MADTPKEILETLKSKLSSNPDAGKNINAVYQFSLAGE SSTTLEKLQARF －Qs KLPFLMDHLK AGANAVKOVGVF
$\qquad$
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DNTFDEDRL！TVNMAT DDQLAKAVGRVFQ\｜NCVG LLQTl LGKLFANAGAV GI EGVFQFVL MD【QS ILSKLFANAHAV पMDRAATMDDENPDAAREFGGVYKFELGGE IE RLVARMNANPGPDRTLN
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 NKSYALIVKDGTCALEEGKNDDANVTLIMDSETLKGLTTG GNTLQVRFKGGKAELVDGAPYPPDCKLILTEDTMRRLMTR GA FYVNFNDGAATVSEGKADSPNDTISMSADDFKSMLSG G $\square Q D G N F F A D L R T G S G V V G L G V P D V T F S L S M S T L Q K I I A G$ GKETVQFYVDMKKEGKGPARPKPDCVFTVSDRDMIRVALG NGGE WWIDDTKSPAEDGEGKAGCTISMDAADFVAMMKK GDYY LS VDDGTLDMAPGEHDDPSVSLSLSSDTLKGLMRG

 DNHYLVVKDGTCDVQQGDAPNPNVTLI MSTETLVGIMTG T GQVQSWILDLKNKGTVEKQSKSDVQI ILKDADFVKLVNG AGAQQAWTLDLKNQATKEAGAKPDI TIISVKDEDFVALAQG MYLVIDD GKCTAHDGLAPSPDLSLIISDENLAAMLKG GENYALIVKDGTCALEQGDNPNANVTLIMDSETLKGIVSG

 GSVSWTVDCTSEGSEGRASAPDATVTMSEPDFDKLYAG

## D

 ENKE ETWVMDFKDKGTGGP 1 PRKGDVQI ALKDADFMKMANG
 E GE TKKA WK LDDLK E A G T DS E P S D A D I S DA V K DA D L N K L DN G GSK $\square$ HT $\square$ Y FNLKNGQG GVHK QHVDVHFII D DQTLCKLFSG EGKKESFYADMKKAGRGKSPKKADVVLQVKDKDMVALADG GGKEATWVIDDVKNGKGSNSGQXXDCTI TMADSDLLDLMTG
 ENKQQTWVLDFKKAESEQTPPKGDVQLILKDADFMRLADG

 EEYGS LLDLKNESGSPDGLTPDSTFILNAETFVQMFN
 $K P V V P G Q T L Q S G E V Y R G K S R G R A D T S F T L S D Q D F M E L V M L G$ GGGDYTCLI E NGAFSLKREKPDATVVIGAEDWDALNEG
 AESEAQFYVDMRKEGPGPAKPKPDCTLTDSDRDMIRIALG






 SGS KAWKLDLLKNDGNESDLDNNSDLVIITMKDLDFKKMLEG




 GKLL FI DGANGKADNSDSEADATVKVDWDDFQKLVAG

 $G A Q P P V W H \quad D L K S G K G S C G P G E P$
 GG RTFIVDFTDPRVTDGDGKAQCTISMTASDFIDVVEG




T Q Q A Y W Y D I K T S Q R T E R H P R R P N V
 GG GKWTLDTTKSEGWVTEGAADMTIVSVSNDDFVKIREK GEPAPWFVDLKNGGQGVCPHPPDLELFMTSEVFLQLFKG
 GGEWYADI AD GKCALIEGGRDDASI TLKMAAATYVDMVMG Y T WY I N LK TN D GS A GF GKP NVVMSMS S GDFVVKMFTG
 GPQLACWSEVKASTRTEAHPNPDVTIEVAPNDFAGIMSG QAFWSEVVDSSRTGAAGRHNAPDVTIEVAERDFLGIMGG




 F G T A G KL FI D GAA GVA D N S D S A A DA T I SVVTWD DF T K L A A G


80 E E Y G S L L







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NEVADALTKRVGSKSPLLGGGSVKDL DA $\square$ FERFPELFR PERAAGVMS T I Q F R R I T G G LT AKASSAVQPGGDFTKKVKG D

M G M
DVIT A A VA A L N DK L S GVV F T A K F V I E D E D A IA E KVVKARVA DSG
D E I F E RMGA HI R

| E | F G R M P Q L F F R A |  |  |
| :--- | :--- | :--- | :--- | :--- |
| D | I | F D R M K A H | K |

AR S EAIAEKIKARIAGSD
$G \square Q S$ A A A K I K A R A A G S



VF DIA ERLLSNP GKYS G
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$M A L D D \square A A G \prod R D G L \quad A \quad A G K S F D G S L K F D C G P D$ S GLGSDEALQRLVEAAKTHPEVSRKAAGVVQFKPSDG $M \operatorname{SiL}$
 LD A $\square$ T E QF K T L A S K A P S I G K T LK F A F
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$E$ E A D R $\$ K S R VA S A G
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 F AL AK A VE E LPEKAK GEKGVFQF D A S A A VF H RLR Q TLA KL T T PLR R S G G H L Q WT S L S MASSD ILKEMDGQFSENEAVRKEDAGTFQFS TTE
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R K T K A V I H WK LD G
 $\square L Q E L V A K M N A N P E R \square A S E K D V F Q I N L E E S$ SEVITAAVDALNKK LDD GEGFDGTAKFVVIEDE

VE A A VA A LDE K A K GFD GTAK F V I E G E $D E L L R R M P S A B R$ R Q DRAKS DDAVVMWQDGD G
 $T L I S D L V L P E L E R Q L A Q D E S L D W P N V K G L E T I D T V T K R$ LAFNARAARGLRAVIQFRITGA
 $G L T G T F Q F I F$
DE $\square$ FRRMSEHF SPTRARHVDFVVSWRFSDD LA $\square \mathrm{N} \square \mathrm{L}$ S T A G V D R T $\square Q \mathrm{~F} \mathrm{~N}$ I S $E \square A D Q L K D R V A A S$ G K S I K F D MKSECI DEK I R N KL K D S N P DRRTVLSVFQFNFT D D GFDGSVKFVIEGE


MT LQ E $1 / \mathrm{F}$ G R M E R Q F R


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 A QVTLVMDEETLKGIVAG SMADSDLDALVTG FDTGSDGVIVIDGGTLSTTDGPADCTMKLSDDNLESLISG NGGNYYLRIENGHLEGGEGRPHLTLVSDMQTLMDILQK GPFYDHS VGVGSEGSAGTDDRETDCTLRLSAENLKKLLNG
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 G VIVLADNTATAQDRETDCTIRTSRENLGKLLTG GSDFDDGT RTPPEDTEGGEDAKCVLK SGAEDFMKLQHG G VEPDCDDDKHGSGSAYKGNPDVVFETSDEVFGKMLTK G AEWTLDLREGKKGPPPEKADDTLTVKDGDFVRMVGG EAVRVNARETVADAREDAGDADPDCTIRTSAENLKKLMDG GEHASTWYLDLKNGAGAAGHDKADVVMSLDSGDFVSMFAG GTDTYE VVIENGTCTVSEATRDPKLSLTMGPVEFLKVVGG G GOVVVLAEGSASTDDCGTDCTLQLSKENLKKLLTG
 GYDHYETVLDGSCTVNTEPEHEPRVTIRLNGTQFLKLASG GADE QWVVMDRQSAHAGDEPADVTLTASRETFEGMLNG GALQ $T$ FKAGHVEGANPDAEVTLTLNEKNFSKLLND G SVOLIIDDEGVRAGDDDADVTLSADTETFQQILEG GSVVQIIIEEGSDTLYEEKKVEPDLTLTMSEGDGMKLLKD GTDRYQMVIVKGECELSSACDRAPATLTLSGADFVRLVTG G VIVIDGASTPNSNTNTDTDCTVGITDDNLQAMLDG FEDEGEGAFMLDSNGAREGDGDADVTLTADADTFKQLLDG RKPAATWYLDKGKAQSSAKGKVKKVKIQVEDHDLLNFITG EPGDYY乌RIDGECLFHEGVFPTPDVSIHARSDWLA乌AHG KKAAATWYLLLQDARAGVKGKDRTVKVQVDDADLLNFITG DATHACWFEAGGRGG SGRHAAPDVTIEVATPDFMGDMGG GYDRFQTVIDGVCVSSTDLISRTPDTTI TLSVDDFIRMATG QPAYVVIRNGACEVTEGNADLSLKMSDDDLVSLLTG TGGDGVLVINGTSVSTEDAP ADCTIKMTDSDLEALVAG GKLIKSVVFDFKDLNTYDGTEAADAEITISDDDFYLVGTK GA SVMDGDGVRAGDGDADCTMTADAETFEALLDG GA $\quad V \operatorname{VVDAEGARASDDVADVTMTANLETFQGMIEG}$ FDTGSDGVIVIDGASISTTDAPTDCTLKLALEDLESLVSG GEAEGVFYVEVKEGKLYVEYHDRDAMFTCSAKNLMKIAKG REAVYETTLAVCTVREGTGPAEPRLTGRMGDAEFLRLVSG TOQGVVFINAKQSPATVSNDPADCEMHVSVADDEEKMGTG
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LQELTEQIRLKAAHADGLDATVKID
 $E$ VF GRMERQFK PDVAGSLEASIRWKVTGQ DEYFGRIAR QAIPEKIKGQDAVVHFHITDG





























[^0] N



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[^1]都






[^2] $M S V T L E Q A A E A L N G K L D A G E$

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 GK LD K P VYMDL WH GKCRNAY QDPD GEVVNSAAVWKKVVTK



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 FPSDEWAKEYTEKLNSNPEAGKTVDDSLDFVVQPD

LK N H F K P V A G L H A VY Q $\square$ S L L D Q




A MS P S MLLF D Y LA VR $\quad$ N P EK A A GKKM $\quad$ V VNMD F T D $\square$ A L H T G QL F E Y L GV R L N GP KA E GK T I $\quad$ V L N WEF T G S GARPSLLKQPA $\quad$ E G L L T T L M G F K S A E VT | $E$ | $F$ | $V$ | $K$ | $Q$ | $M$ | $V$ | $D$ | $E$ | $S$ | $E$ | $D$ | $L$ | $K$ | $E$ | $E$ | $L$ | $D$ | $M$ | $V$ | $V$ | $Q$ | $L$ | $I$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |






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A MTPEMFFDY $\square A \square H \square$
 E A MP P RLN P DKAN NKLI K VGFTMS D T
 GF G A MSPEMFFDYDAVHD NGEKAANAKADVRFDVSSP QCRAALDRLA QNMSSADGRVRGATAVLSCRI TDL

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UniRef90-X1DJH6 UniRef90-14CEK8 UniRef90-MOMUA7 UniRef90_A6FKT0 UniRef90-K5DQK3 UniRef90-EORUD7 UniRef90-W7J3Q0 UniRef90_G8MLP0 UniRef90-A0A011NWQ9 UniRef90-R5US49 UniRef90-U6Q085 UniRef90-MON6U2 UniRef90_Q9HLD8
UniRef90-Q169A7 UniRef90-UPI000370257B UniRef90_UPI00037EE8FA UniRef90-N9W0X5 UniRef90-Q9YAH5 UniRef90_D3DB25 UniRef90_R1F636 UniRef90_A9FCN1 UniRef90_KOPFV2 UniRef90-N2AUW4 UniRef90-S0ARE4 UniRef90-R5JEN1 UniRef90_UPI0003F78BA3 UniRef90-B9PUC7 UniRef90_UPIO00360B7E1 UniRef90_A8L7V2 UniRef90_UPIO002E765CF UniRef90-G7DA34 UniRef90-W4NWF5 UniRef90-UPIO003FCA410 UniRef90-V9ZYJ7 UniRef90-X4V5L5 UniRef90_F7QJ77 UniRef90_G1PIW5
UniRef90-X1K1A1 UniRef90-A0QMS9 UniRef90_G8N5F9 UniRef90_UPI00037D37D7 UniRef90-S9PCV7 UniRef90_W7VVP0 UniRef90_C4Z9K9 UniRef90_UPI00047BB6BD UniRef90_UPI0002F1A846 UniRef90_V3TPT7 UniRef90-I2MW31 UniRef90-UPI00041DD67C UniRef90_UPI0003F10094 UniRef90_UPI000369411F UniRef90-T9B0M1 UniRef90-W0DMM5 UniRef90_UPIO004644DF3 UniRef90_UPI0003A5B3FE UniRef90_Q47N99 UniRef90_UPI0002E1AB6A UniRef90_R9KSP2 UniRef90_UPIO003677F46 UniRef90_LOM2X5 UniRef90-J1ZN88 UniRef90-W9B360 UniRef90- X1AW80 UniRef90 R7HF53 UniRef90_T1BAM8
UniRef90_UPI00034B07D5

 D
G
G TKGNYLYSTVIVVDENGARAEEAEADCTVISCSAKTEKGLVDG GNGNYLYVKLKTSKGSCNRGQADVTFCLGRSLFVDILKG KKPLI DEVNGSENDYYYGSVEHSDVDMQVSRETMNDIISA GYEPFYVEVGGGTVKLNKGHKSPTATMQVNKDNLLKLIKG
 GGMEGMWRVDEDEKGGSAGFGKADVTVMSMSSADFVGMVTG GGAFYVEVKDGVLFVEPYEFYDRDAMFDSTPADVFRKMAEG AATVKSVVLDFDSLKIVEDERGAEATLEDDDEDFFKVATK
 G
N QKYTQQFVLTLENSALTHIAGQADATVTLSRATLDAI TLKK

 DDERADRDADGACTPLHEGAEDPTALI RLDTVEFLKLITG NKKFWLKAKEGTLEYGEGDVENPSFTFSATKEVGSGMLFG
 GAVM GKK FTVTI ENGVARYCDVADEADVALIASDAVFRA LSG
 TKESCVLGVENYSQGKTSQSTDATVTMTRADLNSIMMG DLQQAY TL SV ENAHTRKQWPQADVSLSMDKATLNAI QLK GEAEGADYL EIA NGQLHVEYYDRDILVTTSAADLLALAQG CSLVGHLDIDGEAGTDASGTDRADVTISGPADVLVGLLAG
 G NGKRFVTCPTREAGDVTFTATTADYLKLLRR
 GQG FILDLKDGRCFDDTSRADAPVIISLSDWLDVING $G G V T R V F A L S I M R A V C E L T D D P P T V T V R T D R V R L V R V V T G$
 GEEDGKYLLQLENGTAGQQADNADATITMTRDSLNG:VLGG
 DNSESNFYLKFKDGHMSVHEGDRDVMLIVTPATLDKIITG NENVCVHFRRGDAYLRWPCENTPDVEVESTRDVWLSVVNK
 PGGATRVYLTIDPPGGTAPGGGRTVTITTDRVRLVRVVTG EECKATVII RDKKDQVHDGYGNADIHI TADSDNWLRFLAK GN YFVEDENGVLNHTANMADATLILSRDTLNSIILQ KEVYLLGVENSAHYSKGQTSNSADASVTMTREDLNNIMLG TKDRDILLIDNQNLECAEDTSSSDVHASMTT SVLEQI IQG ELCWFVSEREGKJVVACERADVCFSGSSQDLILI AGR G E K HTLSLENAVLNHTTRYPDVTVTLSKQTLDDIQLG GE RFVLNLENCALTHTSGHADATMALDRMTFNELV DFKYWVKDGDGSVDYGEGDGDDPSVTMSATGATWSGLSSG QAVVVVDMANKKVREGLDGGPAPTATMSMTADTGNGYWQG EAV S IDDARA IYF GQA DDAPDVA IKTTGDDAHQFWGG NE
 GRTEHYLTVDRQDVRVDRLSADADLVVRADREVFDRMAAG
 DVEEKHTLYLENAFPDWQDERADVTINLDRATLNHIMVG DVDLHWFMTLQDNHLVVSHEMADVCFSADANDLILIAAR $\begin{array}{ll}G R L R Q G V I D V A D D H P G P P R E K A E V R L A M T G D D L V A M V D G \\ G E & H W L C A L S N G A L S P Q A P A A D A G V R T D R A T L D A L L D Q Q\end{array}$ DG GTWFLDLKNVGSGEPADQADVVMSMSAGDFVKMFSA DEQYS LHVRSGIAEFDHGEVADADIVVSVTADDWVELVLG GGTYKVELENGVNHTAGVEASDADATVTLSRDVLNKVVLK
 G GKT円FSQQIDVLADYEGE K PR PDCYLSLNLSVLPELCRE KQPLIVKVDHTEMECFYGDSDTFDVEMRLSSRIMNEIVQG
 GGRDT GTI EVRAVPGPPHKA GLRLWYTSVVDGRLVVGSQQADADVSVSADASDLLMIVAG NYKYWVKLGDGKIDYGEGEADDPSVTMSATGATWAGLSSG NK NILIDASGGRVNVSFGEADVICRMDKDTFDKLIDG



S S $\square K$ S A Q L LE QMR $\square H M A T D K E L T K K V G L V Y Q \square N \square K K \square$ AMDTELVFDYMGVRDNAERALDRAFK INFVLPDR VLDLVFARDETGKPLLHDLNGVFRIHITDT NGRYMFIISDK
VMKKVFEGVAQQPEHVDAFNLVVRMNDTNP AKGLNATYHFTFTGR $K$ K E S Y VKKEDLDAVYRFDDEGK A LLRTSQLWDVLGVRLNGPKAEGKHIDVLNWTFSD FPSDEWVSEYCNRLNNNPDYAKTWEGDGLFVVQPD
TAQAMA LDMF LDY LGGT DDSAKAGNRH $\quad$ VLNMTFTDK KELESHFVSTEDFA A ASYSF I E G I


EADQWDDTYQEK LNESTEYSEGFNGDFDFHDQRD LLFDAMAVRLNGEKAADAEIRLNIDMT

MGFKNAEDFETAFADPD पGPTLA DTGLVVAFDFSEP A IF GQMAKGY VPRVANGFVGEIQYDLRRA
 LGS VEFYEAMADALNNDPE WAEKGKNIFDMAYKYE

KAEKVNYVINLNDAD D
QVYEAMAELLNADPEWAKGKNITYTMVFEYR
AMSTQ LWLDF $\square G \square R L \quad D S Q K A Q G M K T F T \square N L L T P$
GMAAGMPLENLFQAMAVRLNGPKADGKNFAFNFEFTDTKE SMPTENI FDYMGURLNGPRATGKKDNSDNDNDPDD

STMFLQELKEHF YPQA GFSAVYKF CMPE
MAFKDSA $\square$ FETAFADPEDGPKLV DTGLVVAFDFT
LD T A SLFAND LNKNGDDDKY DNASFADNDSD


 $\square \mathrm{B} V \mathrm{R} \mathrm{D}$
 $S \square P \square E N G M A A D P V N D K A E E A L D R$ NMVVSFDFSDD LKTHYEGRNGFDASYIIVISD A MTPEMFFDY $\square$ A VHi DGVKAGHAKAVFNi DLGKD

A MS SE LIF DF LGVRDNSELALGKTVS
VNVFP

FDVMAAQLNA EKAEGLAMTINFHFTDL


AALDK AERLADVDERVPDLGLAYATRLHGG AMTLDMLFDYFAVRLNREKSAGKHV GVLNLDFTDN FQFDV1
GMAAA $\square T V E Q \square F Q S M A V R \square D G P R A A A A G R L L L R W E \square T D G$ E I GPKLEATGLVVAFDFTDP D GLS A DGRPPRAPDRVVVCRMPED RASFDPGAAAGLRAVYEFRVE
E LTEEFVGRF DPGAAADWESVVGLKLTPD


A A $\square D K \square S$ DNMAASEGEVRGAAA $\square$ T D $\square D \square T$ F A
VFETMMVNLDPQKSAESDULVVFSFDLKAD FPSPEWVQ $\square$ FKDKLNADAE $\square$ ARNWEGDV $\frac{1}{1} L T I E P G$ MHSNPIFEFMASKLSDKLKKKVKGK\CFK VI RGS


A $\square$ AEA $\square$ ADARFDFMEARVLAVAA
UniRef90 K4L1X9 UniRef90-10QTQ7 UniRef90-K3Y020 UniRef90-H9BQV0 UniRef90_Q0F163 UniRef90-R6KCA6 UniRef90-A0A023UQL9 UniRef90_I014Q7 UniRef90-UPI00047CDBD2 UniRef90-R7QUH7 UniRef90_UPIO004185A29 UniRef90-Q97BQ8 UniRef90-W2F4N1 UniRef90-E6VR65 UniRef90_R5VFV4 UniRef90-AOAO23CME9 UniRef90-E4RT17 UniRef90_Q0RE70 UniRef90-H5UZM3 UniRef90-UPIO00380FD29 UniRef90-U1QN45 UniRef90_UPIO00370F00B UniRef90-K7HYW0 UniRef90-14XYR7 UniRef90-HODZS8 UniRef90-R6BVW1 UniRef90-X1RMI9 UniRef90_-R4YWTO UniRef90_UPIO00364A83E UniRef90_UPIO00466DDE4 UniRef90-A3QJP9 UniRef90-UPIO003802FF2
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UniRef90_R6W512 UniRef90_UPI0003941F46 UniRef90_UPIO0037B9281 UniRef90_Q5QWLO
 HWLMTVENGKRVCEQGEADVSF@GNANDLLLVAAR GVDEEDFVVDLKKGEVSKG NEK川A

L E L K N S H L N N V M
 DKNIVVGVSDRLNVEFGEDMGADVIGGMSKETFDNVVQG AL HWFMTVENDKLVVSHHEADVSFSGDANDLILI AAR D A E I L


 $G Q T \quad C L L E L E N G A L S H R M$



 DIELRWF TSVQNGRLVVQEDPADVCFSADASDLLMIAAR
 G GEPVYYLYIVVKNGSCEDAYD DPDGAFRGGAESWKQLIEG D T S E K Y L VVVVLH GYPGRHSDDPS A S LA L S S T DLRRLMFGG


 DFKFWTEFGNGDVYLCGKGVKDNPSVIMTCPQKTMDDI LEGG GAAWWWSSRGDSTATGVGSAEHPDVVVTCDGRTARRLLSG A PVEGQFFVSFDKGRVTEVRDKADFLI SGSSDTWRGCFDG
 APVDKAFLVVRFDAGKVSPDAEPADFVIVSGDPETWRAVLEK
 $G L^{R}$
 K E R Y S L V L E N A V L N Y G P P V N D P H S S V

 QS Q TLVLDMDNSKLN CYYGKP DATATMKANHIVRIISG GH L L G GCLLHD 1 GEGERPG
 DQTTGQYALKLSNAYQNRQFDQAD ITLSFSHETFVQLLTG DVQK D F T L T L R N GVLTTHRAGAA DAS V S L S R D T L EK I S L K
 GAAFHGRLTDGQLVD LADGDDPAKDALNTTSDDLLALVRG DLQWFTSVVNGKLVVSQNAQ A DVSSSADASDLLMMIAAR



DI TS GPA A A A A A A P QVVRVTVSS GDLVDLAE D DKDEK F LLELK N A HA GVQSKSA DVTVVTMNRS DL NLMMLMK N E
N E
 NAVMF LGFK S GRTVWVHADHA GDA DV R DEAT TAAGARMCFA GG SMMI DMPNAVP GAA GGNADCT FRMT GEYANRFWQ G

 PEGDVTYHLVVGD GEAAF GAGPADVKMEQSWKTAVDVATG

 KSVVVIDMANKTTREGVAGGSAPMATMFMTADTGNA YWQG








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 FRIVVSDL

 MDVT TLFDFLAVVKDS A AAKLGNVSLNVVTKT FQATFSITMTDT
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EFAEKDKGYDKGSKAKAKKYEDTVAVNFTFI SDEWFSMVENKVTSAGDLVPESLQSLVLNLTVT

 FPSPEWVKAFEEQINSSDAAAKTWEG



 G LDDLCSADNERFMAADAAGVVDLCLSANTADFMKMLLR
 DNTLENSVLN YRQSDQPKSDASFYMSRTDLHDVLTG GDVETTIFVELSHGNVVDSPQPADATLTDAKTDMVNMLLG

 DDME D FYVAVREGVLDVAPYHYDANVTGAAENIEKLFSG GCDVGDVQMSVVGGSFQRGHAEAAVTLTLPEDLARRLFQD
 ESRAGQI QVVLGEVVRAGAPADPEFVLTANTDTWQRLGRG GQYAMDLQNSVLKSYSDKQFSDADVTMTMNRQAFENMMTK
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jnet
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sol0
jpssm

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lupas 21
lupas_14
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jnet
conf
sol25
sol5
sol0
jhmm
jpssm


[^0]:    

[^1]:    

[^2]:    $M K C H$ TVVE L LI A N RPM<br>$\qquad$<br>$\qquad$

