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SS01991          MSTDDNSREELFNKYKIMALLHDPNNKAWVITSRAHN-----
Hbut_0714        -----MSRLHMVKLAALLHDPAPKPVIVASAFPGKGTGVRLAKVAGKSAPAGELVK
Igni_0328         ----MTCNLTKKKMVALLDHDTPEKAWLMY-----
Igni_0463         ----MSCEELFARKAAALLHDPPEKVWASF-----
                  ...:  *  *****..  *  *

SS01991          -----LTVQLRSVRARKSHERVAKYIINQLFG-----DINSKTVDNADKLA
Hbut_0714        VEECEELMKMKMTYTTIEADAHQLDAAAAVAAILDGLRDAPIEKLILDEKGVVAEADKLA
Igni_0328         -----VKKK-HEEYAKERIGDVLG-----EEYLDYFKDVKAYDVIS
Igni_0463         -----YKHESHEKRAKDAAKEFFG-----EGFVKTLDEVKEHDRLA
                  .  *:  *              .:              *  *  :

SS01991          SSIDRYLGSIVYKEYSLFRNRS--IFLKNILLNIIQRDVGNLFPKDKSKLDNLISEYKKL
Hbut_0714        ASLDRWVLTYPKHREARDVKVDVGDVAYANPLDPRFKMPES-MRSIDAGVVCRYVMKLKQL
Igni_0328         STIDRWVPS-----RMNIDRV--IRLINPFDPNFFYEID-LGQISKEKIEDYWNKLKTC
Igni_0463         STVDRWTAVG-----TEVRGRLENEVSLVNPFDPEFSYKVK-MPKIKDDAIARYRITLKSI
                  :::**:              :  *  : ..:              :  .  :              *

SS01991          LNVNTNTN--LNILKYQLFYLIYELIWIDSRYENTP-AETRNPTHTIFDHLAYATAAMMNW
Hbut_0714        YGDARELP---YPLLNLNLYLLLEPLWYEVCRACIPLADTRPTHTVFDHVVYATAAMVNW
Igni_0328         LSKVSGD-----RERYHAQYVLMELLWYKTVKVLPL-ADTRFPHTHTVFDHVVYATASMINI
Igni_0463         LEKVEDSSKGVTTRKKYHALYAFMEPAWYVEVGQPLP-ADSRFPHTHTIFDHLVYATAMMVNI
                  .          *:  *  : *  *          *  *:  *  *****:*****:*

SS01991          IFSLKEAKGYLLGIDTIGVADFISKGKKTRDLWISSYLVSALLWYVITWFIEEYGPDVI
Hbut_0714        LYPGGGKPGGFLVKVDVAGIQGFISASRKTRDLWAGSWLVSAWFTVSEAVMLLGDDIV
Igni_0328         YNNDSSKFGSGFIVGIDIPGIQSFISGGRPGDWWIERSWLISATVWYLKELVWNLGPDVL
Igni_0463         YD-PKKNFDFGFFVEVEIPEARSFLKGGRPGDWWARGWLLSNITWRLVEELVWEVGPDI
                  :  *:  : ..:  .*:  .  .  *  *  .*:  *  *  :  :  *  *:

SS01991          LFPSLRFNQFYAFYLLEKLREK-----ISEDVIDEIKELITKYIFNGDDLFEKLEI
Hbut_0714        LSPYNPANPFFMATVLEELRLAGSEYSGLVRFVEDKVERAYLWKGAAQNPVPGTIFLAL
Igni_0328         LSPSARYNPFYATVAHRVQAVR-----ECLDENLT---SPEQLMPATVTLL
Igni_0463         LFPTARYNPFYSLIQEKIPELK-----EEYERYLKPLGSVKNPVPPAVSLFL
                  *  *      *  *:  : ..:              :  :              *  :

SS01991          PPYPIIPGR-----ITLILPGLIREGEEYQVPDDNYFISKVKERYNEGWRKLI
Hbut_0714        PCIDEDDYERLRLAEAKLKTVDVFKLLEALRSCDGEKLRYFGRFWEGRKVVCAAI
Igni_0328         PACSIELMR-----SELVEKGLKEGEGSDPSVVISRYFKERLKEAWKNVIEDIQ
Igni_0463         PRCAIELMK-----SYLEDK---HPKDLKLDSTKIKMYFETRLREAWEDFVKLL
                  *          .          :              **  :.  *  :..

SS01991          EGLKCYSELKREDGFWNLVCR-----VLKLTEDLLQTTPLNIRVKQVSVTKDEIFN
Hbut_0714        ESARVGRGCNIEKFAETIVDLGVTDLSPEAVREYLEASRNPPMQLRTVVINTEDEYDRL
Igni_0328         TRLRSTADNLIKTLEKVRVCT-----GTCTDVASADDLIERMIEIKHAERAPFDVK
Igni_0463         EGLNSVGAEAGLEGLRTFGAEG-----ELGAVLERVEDKPPFEVRVTVIDLRKALTEF
                  .          :          .          :          :..

SS01991          NSKLRSDS---WKIYDNKYRQLVSEFK-----KSKLVKVTPE SRLKLFELTKFDKLPQ
Hbut_0714        LGWLREKKGKLSRLVVEAAQKLLFTWLFTALPEAEEREYAKSVSIDAGFAIAESLEEA
Igni_0328         TVVINLEE---AFEEFVKEFRRIEGKMR---AELEQLISSEGLAVGKDVFPYSKDLSDV
Igni_0463         NKVLKERS---LIRGVKDELRELLAKKYRVRVGPGEDLVKVIKGVSDKVLPYTRNENDL
                  :.  .          .  :.:              .  .          .

SS01991          IGEKSKRGYEFCTSCGVLPAVIIMPEDEFEKKLIELGIARDEKDVRSIKNMISSPERLC
Hbut_0714        TSKPLKPEFHEHCSMCGRLPAIVHLADAARKVREFAER---LGVPV-----VLFSEGES-LC
Igni_0328         MSDLEKKLFFHVLVTKKYPEEFRKAKAVRLDPLLDGWTLEVTK-----ARYESCKDKSA
Igni_0463         ERDLERKLFHVLVTSKH-EAVKGAEDVGDPRLVDGWSLEEGK-----RTYESCVR-NR
                  .  :  :          .  ..  .          .

SS01991          PWCLVKRALGAEPRLMRILLGLDCSVEKIVNEIVSKDVKIEIP-----STSDIASIKTF
Hbut_0714        PYCLVRLVSTSDAIRRMGNLNYSLNPRQLYTRPPSTDELA---AMDKLLAIVDAL
Igni_0328         PMCTCAGRPAAVHNPSSEASSPLLRSEALCPYCLILRLLQYYTDALTSIVEADHVAKPVV
Igni_0463         PLMCCGRPAAVHNPTDKDTKFVRAHEALCPYCLALRLAQHVP-----LAEGLRAPRAL
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SS01991 EEMIEKKNEICEDLKEEVECKPNEPMSMLSMQWRFNKNYYTGINTIDPEEYWFSEKRRRY
Hbut_0714 SKDEQLAAELRSFFCKDDNGRNACEYRGKYVSEIVERYAYTKAGQKAKEILGLLEAIYDK
Igni_0328 MSTLAALPELVKWLSESGGA-----VEIMDENGNNVGLPKDQLLESLTRSLKEY
Igni_0463 TSTLAAAPELACWLIEKG-----KASAKGARGRELVWTLARALLEP
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SS01991 YFSLFR-----RHRITFPPSPYYALVRADSDYLGDLLGLEKLTPTYLAGIID
Hbut_0714 LLGEFGEEFPHMLIAGILASEQRCASHLAKSVAKIREKREERVGSEVQEKAREVCSLLAK
Igni_0328 SSFDF-----YQNKYSRFSLEEVLLEELQ-KNETVERLIRDSSKNLYIRVLV
Igni_0463 P-----PGATRLNLEALPEELEEKELVAGLEG-----FVIRITK
 . . : : :

SS01991 SGDYANISE-KKEEVNKLLEEYLVNAGSGPIVDYVKTVCIRGNLNCSCAVKIYSNEV
Hbut_0714 LYSRADG--VAGRYAIVRGDGDYFGSRIIKGVLDFKSSRDYVEEMLKAIRDEGARSRL
Igni_0328 RKDRDSSKLLSLNKYIAMVKADADNMGN-LKGRRLLGYDAEAYFETIYRQAGPRRGVQQUE
Igni_0463 EDLRAIN--SMNKYLAIVIKSTVDRLLDD-LKKGRLPYGTEEYFR-----EAVKKG TGSEG
 . : : . . . :

SS01991 AEVMFRANRLLRKKLEKIDVEREVENSLKYFRTILKEGRIIVTPAWHVSISSALNRGLLV
Hbut_0714 APVYSEIATLLVDLMEEMKPTPSSGCKKGCKALPK-PATLVTPTYMALSRGQMITALY
Igni_0328 -KLYKLAGSLVRSVIERLHEIYPKEVY--GENDSSL-PTVLVTPTYLFQLSYSMLTEALV
Igni_0463 GKDL ELAIDI I KIVDFARG LAPQRAG--GGEAG--QTVLVTPTYLSQLSYSMLTQALV
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SS01991 ELEL INKHKG FVIYAGGDDL LAMLPV-----DEVLD FVKESRR-
Hbut_0714 DAEIVAMLGGFPVYAGGDDVAALAPG--YISKGRLENLIKGYATRATHIKDSIRADTGF
Igni_0328 DKEIVEKNYGLLVFAGGDDL LALVPARSVSRGSGRAEPLGGLEEFLSRELLEIVKEFYFS
Igni_0463 DAKLIELNFG L PALASGGELVALVPARTRCGPGLPEELG--KLLKDETLLKRVKEDYYS
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SS01991 ----AFAGVSTGR L GNMCLENG FARINN-AYPSLP I VGRS YS V I I A H Y A D P L F F V I N D S
Hbut_0714 VPALIALYTRKNYWG L L W A G R G F H R T P I G A V P P A V A Y G R S Y G I Y I V H Y R D P F M A A W R S A
Igni_0328 PALWVWWLTRLNHWG L L R S P V G F R Y T D N - F F A P A L L A Y G R S Y G I A I R H Y R D P L A K V F E D A
Igni_0463 PALWAWWLTRLNHWG L L G E P K G F R R S E L - F F A P A L L A Y G R R Y G I A I R H F K D P L A K V Y E E A
 . . * : ** * : ** * : * * : * : . . . :

SS01991 YNLL E E G K E M I R Y R V M Y N G E Y K D A K K D V A I F R Y Q G L T -----S V I P L S L K R P I V N S V S D
Hbut_0714 GDLEEYK-DVIAFTSPHGTTVSKDATFLAYGRVSSIAGVELGAVALPNMKGAGKEK VIT
Igni_0328 SELEES-----AKNVSKKKDGVGVSYGR LGARG-----VALSNSLGVEDKGD LKE
Igni_0463 EGLEAP-----LRSTG---DWTGVSYGR LG A E G -----VASPNSL GASRKEEVAE
 * . : : * . . . : :

SS01991 FNEIASIIDLILELKKR-----IDEGHISVSLLYDYEEYKHLI-----
Hbut_0714 WGAAGRKP EEP E P V G W T L A L S L D A S K V E E D R V I S R S L Y S D F E R E C P L A M R I A R K I V L T
Igni_0328 PASLGP I I A K L S S F H R -----RGLSNFYDYD I R E L Q K Y F G H D A K H E W A
Igni_0463 RG-LGPTTASLAFLNY-----KGLSNYYYDLISFVGKY-----A
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SS01991 VASDEKYLTEFLVKDWIKRNSLRKH-VEFTIDEKLYGVRLTIENYPIKIPNDLISNIVYT
Hbut_0714 GSTDLQRIAESLLEMIIRNTPERHRRKIEYITKLLKEVAMVAPAPAKLLEALECGQLRV
Igni_0328 AAKGLTTP I I I L L K Y I S R N V A D E E K Y S Q N L K K E V E V L E F L K L T N E Y I F D V L E F G F A W H
Igni_0463 SAGGSSEAL EALIEYVLKRN V V S G G --E G A A K E A L G R L K R A L G A G A E G L H L L E F G F H W H
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SS01991 LRIIYGGEK-----
Hbut_0714 EEAEKRLNGFSKLACLAPLPWQIVLAAYTISSGRR
Igni_0328 KAVR-----
Igni_0463 KAAR-----