

## Supplementary Text 1. *E. coli* Flagellin database

>gi|290437| H1  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVANDGQTITIDLKIDSDTLGLNGFNVNGSGT  
IANKAATISDLTAAKMDAATNTITTTNNALTASKALDQLKDGDTVTIKADAAQTATVYTY  
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QEAYLTS DGNLTTNDAGGATAATLDGLFKKAGDQSIGFNKTASVTMGGTTYNFKTGADA  
GAATANAGVSFTDTASKETVLNKVATAKQGTAVAANGDTSATITYKSGVQTYQAVFAAGD  
GTASAKYADNTDVS NATATYTDADGEMTTIGSYTTKYSIDANNKQVTVDSGTGSGKYAPK  
VGAEVYVSANGTLTDDATSEGTVTKDPLKALDEAISSIDKFRSSLGAIQNRLDSAVTNLN  
NTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG  
>gi|6009831| H1 (Hxx100.0%) [gi|312946515| H1] [gi|307553937| Hxx]  
[gi|301050721| Hxx] [gi|300406443| Hxx] [gi|227837223| Hxx]  
[gi|315290272| Hxx] [gi|26248190| Hxx] [gi|355425444| Hxx]  
[gi|222033664| Hxx] [gi|324028125| Hxx] [gi|300297607| Hxx]  
[gi|300993901| Hxx] [gi|26108594| Hxx] [gi|355420524| Hxx]  
[gi|227885650| Hxx]  
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VGAEVYVSANGTLTDDATSEGTVTKDPLKALDEAISSIDKFRSSLGAIQNRLDSAVTNLN  
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>gi|23477612| H2  
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LKAATAETTYFGSTVKLADANTLDADITATVKGTTTPGQRDGNIMSDANGKLYVKVAGSD  
KPAENGYEYEVTVEDDPTSPDAGKLLKLGALAGTQPQAGNLKEVTTVKGKGAI DVQLGTDTA  
TASITGAKLFLKLV DANGKDTGSFALIGDDGKQY AANVDQKTGAVSAKTMSYTDADGVKHD  
NVKVELGGSDGKTEVVTATDGKTYSVSDLQGKSLKTD SIAAISTQKTEDPLAAIDKALSQ  
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>gi|16901492| H2  
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TASITGAKLFLKLE DANGKDTGSFALIGDDGKQY AANVDQKTGAVSVKTMSYTDADGVKHD  
NVKVELGGSDGKTEVVTATDGKTYSVSDLQGKSLKTD SIAAISTQKTEDPLAAIDKALSQ  
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VLAQANQTTQNVLSLLQG  
>gi|5107851| H2  
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KDGSMKIQVGANDGQTITIDLKKIDSRTLGLNGFNVNGSGTIANKAATISDLTAAKMDAA  
TNTITTTNNALTASKALDQLKDGDTVTIKADAAQTATVYTYNASAGNFSFSNVSNNTSEK  
AGDVAASLLPPAGQTASGVYKAASGELNFDVDANGKITIGGQKAYLTS DGNLTTNDAGGA  
TAATLDGLFKKAGDGQSIGFKKTASVTMGTTYNFKTGADADAATANAGVSFTDTASKET  
VLNKVATAKQGKAAAADGDTSATITYKSGVQTYQAVFAAGDGTASAKYADKADVSNATAT  
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>gi|192925955| H2 [gi|193066370| H2] [gi|342722665| H2] [gi|260844327|  
H2] [gi|257759474| H2] [gi|323158593| Hxx] [gi|194429949| Hxx]  
[gi|345379018| Hxx] [gi|194412038| Hxx]

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KPAENGYEYEVTVEDDPTSPDAGKLLGALAGTQPQAGNLKEVTTVKGKGAIQVQLGTDTA  
TASITGAKLFLKLEDANGKDTGSFALIGDDGKQYAANVDQKTGAVSVKTMSTYTDADGVKHD  
NVKVELGGSDGKTEVVATDGKTYSVSDLQGKSLKTDIAAISTQKTEDPLAAIDKALSQ  
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>gi|30059155| H2

NKSQSSLSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTT  
EGALNEINNNLQRIRELSVQATNGTNSDSLTSIQSEIQQRLSEIDRVSGQTQFNGVKVL  
ASDQDMTIQVGANDGETITIKLQEINSDTLGLSGFGIKDPTKKAATAETTYFGSTVKLA  
DANTLDADITATVKGTTTPGQRDGNIMSDANGKLYVKVAGSDKPAENGYEYEVTVEDDPTS  
PDAGKLLGALAGTQPQAGNLKEVTTVKGKGAIQVQLGTDATASITGAKLFLKLEDANGK  
DTGSFALIGDDGKQYAANVDQKTGAVSVKTMSTYTDADGVKHDNVKVELGGSDGKTEVVTA  
TDGKTYSVSDLQGKSLKTDIAAISTQKTEDPLAAIDKALSQVDSLRSNLGAIQNRFDASA  
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>gi|33590252| H2 (Hxx89.5%)

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SEIDRVSGQTQFNGVKVLASDQDMTIQVGANDGETITIKLQEINSDTLGLSGFGIKDPTK  
LKAATETTSFGGTPITLKNADTLDTAIAAKAQGKTPGTS PKGKGEVIVADAAGQLYVK  
VVGSDKTDENGYEYEVTVNKDPTSPDAGTLTLGNKAVTQPQAKDLTDVTTVKGNDAAEVKL  
GTDATASITGAKLFLKLEDNSNGKDTGSFALIGNDGKQYAANVDQKTGAVSVKTMSTYTDAD  
GVKHDNVKVELGGSDGKTEVVATDGKTYSVSDLQGKSLKTDIAAISTQKTEDPLAAID  
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>gi|46093545| H3

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SEIDRVSQQTQFNGVKVLATNQTMIQVGANDGQTI EIGLDKIDADTLGLKDFSVASAKV  
PTSGAVALKSEMSPTLTSVNATTGKNGTNYAFGATFRDDVNTYFGGKAVNTGDKTNVLG  
TEAEVFQIQVEGQTYFVAQNGDTATNAYSLLKQSGSGYEKVTVDKAVQIANFGGRVTA  
VDDGTAAHNALSVDLQKGTGKALSFNDSQMSVYVDGKNLEIKQVLDADGKPKAGAFAAQ  
TADGKSLAVNIDGNGNTSVVKDADGNNVEVVDKGA AKTVVRKDDKIYGASVTGFGGTP  
TVNVDTTAIDASELKGMTTAKPLEKLDTALAKVDKLRSSLGAVQNRFDASAITNLGNTVNN  
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>gi|6009833| H4 [gi|56383039| H4] [gi|354899951| H4] [gi|354935513|  
H4] [gi|354861750| H4] [gi|354895775| H4] [gi|354872964| H4]

[gi|354913330| H4] [gi|354869108| H4] [gi|354916757| H4]  
[gi|354940856| H4] [gi|354919205| H4] [gi|340739829| H4]  
[gi|354938045| H4] [gi|354879715| H4] [gi|354894150| H4]  
[gi|354898306| H4] [gi|30059850| H4] [gi|354890315| H4] [gi|354867035|  
H4] [gi|218695530| Hxx] [gi|218352262| Hxx] [gi|417805461| Hxx]  
[gi|458079287| Hxx] [gi|459090464| Hxx]

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FSAAKLTAADGTAIAAADVKDAGGKQVNLSTYDTASNSTKYAVVDSATGKYMVAVVIT  
GTAAAVTVGAAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDSAVTNLNNTTTTL  
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>gi|340734088| H4 [gi|417833206| Hxx]

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DEIDRVSGQTQFNGVNVLSKNDMVKIIGANDNQITISIGLQQIDSTTLNLKGFTVSGMAD  
FSAAKLTAADGTAIAAADVKDAGGKQVNLSTYDTASNSTKYAVVDSATGKYMVAVVIT  
GTAAAVTVGAAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDSAVTNLNNTTTTL  
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>gi|56383041| H4

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DEIDRVSGQTQFNGVNVLSKNDLMKIIGANDNETISIGLQQIDSTTLNLKGFTVSGMAD  
FSAAKLTAADGTAIAAADVKDAEGKQVNLSTYDTASNSTKYAVVDSATGKYMKAATVAIT  
NTAAEVTVGPAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDSAVTNLNNTTTTL  
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>gi|40994711| H4

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DEIDRVSGQTQFNGVNVLSKNDMVKIIGANDNQITISIGLQQIDSTTLNLKGFTVSGMAD  
FSAAKLTAADGTAIAAADVKDAGGKQVNLSTYDTASNSTKYAVVDSATGKYMVAVVIT  
GTAAAVTVGAAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDSAVTNLNNTTTTL  
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>gi|330911731| H4 (Hxx99.4%)

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DEIDRVSGQTQFNGVNVLSKNDMVKIIGANDNQITISIGLQQIDSTTLNLKGFTVSGMAD  
FSAAKLTAADGTAIAAADVKDAGGKQVNLSTYDTASNSTKYAVVDSATGKYMVAVVIT  
GTAAAVTVGAAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDSAVTNLNNTTTTL  
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>gi|339415347| H4 (Hxx99.1%)

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DEIDRVSGQTQFNGVNVLSKNDMVKIIGANDNQITISIGLQQIDSTTLNLKGFTVSGMAD  
FSAAKLTAADGTAIAAADVKDAGGKQANLLSYDTASKSTKYAVVDSATGKYMVAVVIT  
GTAAAVTVGAAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDSAVTNLNNTTTTL  
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>gi|345388332| H4 (Hxx99.4%)

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GTAAAVTVGAAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDSAVTNLNNTTTNL  
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>gi|33590231| H5

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DEIDRVSGQTQFNGVNVLAKDGMKIQVGANDGQTISIDLQKIDSSTLGLNGFSVSGQPL  
NVSDSITQITGAAGAKPVGVDFTAVAKDLTTATGKTVDVSSSLTLHNTLDAKGAATSQFVV  
QSGNDFYSASINHTDGKVTLNKADVEYTDNDGLTTAATQKDQLIKVAADSDGSAAGYVT  
FQGKNYATTVSKALDDNTAAKATDNKVVVELSTAKPTAQFSGASSADPLALLDKAIAQVD  
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>gi|6009835| H5 [gi|30059852| H5]

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DEIDRVSGQTQFNGVNVLAKDGMKIQVGANDGQTISIDLQKIDSSTLGLNGFSVSGQSL  
NVSDSITQITGAAGTKPVGVDFTAVAKDLTTATGKTVDVSSSLTLHNTLDAKGAATSQFVV  
QSGNDFYSASINHTDGKVTLNKADVEYTDNDGLTTAATQKDQLIKVAADSDGSAAGYVT  
FQGKNYATTVSTALDDNTAAKATDNKVVVELSTAKPTAQFSGASSADPLALLDKAIAQVD  
TFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVL  
SKANQVPQQVLSLLQG

>gi|281178986| H5 (Hxx99.8%)

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DEIDRVSGQTQFNGVNVLAKDGMKIQVGANDGQTISIDLQKIDSSTLGLNGFSVSGQSL  
NVSDSITQITGAAGAKPVGVDFTAVAKDLTTATGKTVDVSSSLTLHNTLDAKGAATSQFVV  
QSGNDFYSASINHTDGKVTLNKADVEYTDNDGLTTAATQKDQLIKVAADSDGSAAGYVT  
FQGKNYATTVSTALDDNTAAKATDNKVVVELSTAKPTAQFSGASSADPLALLDKAIAQVD  
TFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVL  
SKANQVPQQVLSLLQG

>gi|5107841| H6

NQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKGLTQAARNANDGISVAQTTEG  
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DGMKIQVGANDGQTITIDLKIDSSTLGLNGFIVNGKGETANTAATLKDMSGFTAAAAP  
GGTVGVTQYTDKSAVASSVNIILNAVAGADGNKVTTTSADVGFPTAAAVTYTYNKDNTSYS  
AASDDISSANLAAFLNPQARDTTKATVTIGGKDQDVNIDKSGNLTAADDGAVLYMDATGN  
LTKNNAGGDTQATLAKVATATATGAKAATIQTDKGTFTSDGTAFDGASMSIDANTFANAV  
KNDTYTATVGAKTYSVTTGSAAADTAYMSNGVLSDTPPTYAQAADGSITTTEDAAAGKLV  
YKGS DGKLTDTTSSKAESTSDPLAALDDAISQIDKFRSSLGAVQNRLDSAVTNLNNTTTN  
LSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKSQPGT

>gi|5107839| H6

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NVLAKDGMKIQVGANDGQTITIDLKIDSSTLGLNGFNVNGKGETANTAATLKDMSGFT  
AAAAPGGTVGVTQYTDKSAVASSVNIILNAVAGADGNKVTTTSADVGFPTAAAVTYTYNKD  
TNSYSAASDDISSANLAAFLNPQARDTTKATVTIGGKDQDVNIDKSGNLTAADDGAVLYM  
DATGNLTKNNAGGDTQATLAKVATATGAKAATIQTDKGTFTSDGTAFDGASMSIDANTFA  
NAVKNDTYTATVGAKTYSVTTGSAAADTAYMSNGVLSDTPPTYAQAADGSITTTEDAAAG  
KLVYKGS DGKLTDTTSSKAESTSDPLAALDDAISQIDKFRSSLGAVQNRLDSAVTNLNNT  
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>gi|5107853| H6

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KDGSMKIQVGANDGQTITIELKKIDSRTLGLNGFVNGKGETANTAATLKDMSGFTAAAA  
PGGTVGVTQYTDKSAVASSVDILNAVAGADGNKVTTSDVGFPGTPAAAVTYTYNKDNTSY  
SAASDDISSANLAAFLNPQARDTTKATVTIGGKDQDVNIDKSGNLTAADDGAVLYMDATG  
NLTKNNAGGDTQATLAKVATATGAKAATIQTDKGTFSTSDGTAFDGASMSIDANTFANAVK  
NDTYTATVGAKTYSVTTGSAAADTAYMSNGVLSFTPPTYAQADGSITTTEDAAAAGKLVY  
KGS DGKLTDTTSSKAESTSDPLAALDDAISQIDKFRSSLGAVQNRLDSAVTNLNNTTTTNL  
SEAQSRIQDADYATEVSNMSKAQIIQQA

>gi|215265200| H6 [gi|215487128| H6] [gi|312967124| Hxx]  
[gi|312288588| Hxx]

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DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKKIDSRTLGLNGFVNGKGE  
TANTAATLKDMSGFTAAAAPGGTVGVTQYTDKSAVASSVDILNAVAGADGNKVTTSDVGF  
FGTPAAAVTYTYNKDNTSYSAASDDISSANLAAFLNPQARDTTKATVTIGGKDQDVNIDK  
SGNLTAADDGAVLYMDATGNLTKNNAGGDTQATLAKVATATGAKAATIQTDKGTFSTSDGT  
AFDGASMSIDANTFANAVKNDTYTATVGAKTYSVTTGSAAADTAYMSNGVLSFTPPTYAQ  
ADGSITTTEDAAAAGKLVYKGS DGKLTDTTSSKAESTSDPLAALDDAISQIDKFRSSLGA  
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QVLSLLQG

>gi|30059854| H6

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DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKKIDSRTLGLNGFVNGKGE  
TANTAATLKDMSGFTAAAAPGGTVGVTQYTDKSAVASSVDILNAVAGADGNKVTTSDVGF  
FGTPAAAVTYTYNKDNTSYSAASDDISSANLAAFLNPQAGDTTKATVTIGGKDQDVNIDK  
SGNLTAADDGAVLYMDATGNLTKNNAGGDTQATLAKLATATGAKAATIQTDKGTFSTSDGT  
AFDGASMSIDTNTFANAVKNDTYTATVGAKTYSVTTGSAAADTAYMSNGVLSFTPPTYAQ  
ADGSITTTEDAAAAGKLVYKGS DGKLTDTTSSKAESTSDPLAALDDAISQIDKFRSSLGA  
VQNRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQA GNSVLAKANQVPQ  
QVLSLLQG

>gi|300399814| H6 (Hxx98.7%) [gi|301018227| Hxx]

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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKKIDSRTLGLNGFVNGKGE  
TANTAATLKDMSGFTAAAAPGGTVGVTQYTDKSAVASSVDILNAVAGTDGNKVTTSDVGF  
FGTPAAAVTYTYNKDNTSYSAASDDISSANLAAFLNPQAGDTTKATVTIGGKDQDVNIDK  
SGNLTAADDGAVLYMDATGNLTKNNAGGDTQATLAKLATATGAKAATIQTDKGTFSTSDGT  
TFDGASMSIDANTFANAVKNDTYTATVGAKTYSVTTGSAAADTAYMSNGVLSFTPPTYAQ  
ADGSITTTEDAAAAGKLVYKGS DGKLTDTTSSKAESTSDPLAALDDAISQIDKFRSSLGA  
VQNRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQA GNSVLAKANQVPQ  
QVLSLLQG

>gi|305852412| H6 (Hxx99.8%) [gi|306814253| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKKIDSRTLGLNGFVNGKGE  
TANTAATLKDMSGFTAAAAPGGTVGVTQYTDKSAVASSVDILNAVAGADGNKVTTSDVGF  
FGTPAAAVTYTYNKDNTSYSAASDDISSANLAAFLNPQAGDTTKATVTIGGKDQDVNIDK  
SGNLTAADDGAVLYMDATGNLTKNNAGGDTQATLAKLATATGAKAATIQTDKGTFSTSDGT  
AFDGASMSIDANTFANAVKNDTYTATVGAKTYSVTTGSAAADTAYMSNGVLSFTPPTYAQ  
ADGSITTTEDAAAAGKLVYKGS DGKLTDTTSSKAESTSDPLAALDDAISQIDKFRSSLGA  
VQNRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQA GNSVLAKANQVPQ  
QVLSLLQG

>gi|5107855| H6 (Hxx99.6%)

QSALSSSIERLSSGLRINSAKDDAAGQAIANRFTSNIKGLTQAARNANDGISVAQTTEGA  
LSEINNNLQRIRELTVQASTGTNSDSLDLSIQDEIKSRLDEIDRVSGQTQFNGVNVLAKD  
GSMKIQVGANDGQTTITDLKKIDSDTLGLNGFNVNGKGETANTAATLKDMSGFTAAAAPG  
GTVGVTVQYTDKSAVASSVNLNAVAGANGNKVTTSDVGFVGPAAAVTYTYNKDNTNSYSA  
ASDDISSANLAAFLNPQARDTTKATVTIGGKQDVNIDKSGNLTAADDGAVLYMDATGNL  
TKNNAGGDTQATLAKVATATGAKAATIQTDKGTFSTSDGTAFDGASMSIDANTFANAVKND  
TYTATVGAKTYSVTTGSAAADTAYMSNGVLSDTPTTYAQADGSITTTEDAAAGKLVYKG  
SDGKLTDTTTSKAESTSDPLAALDDAISQIDKFRSSLGAVQNRLDSAVTNLNNTTNLFE  
AQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV

>gi|8071774| H7 [gi|86604416| H7] [gi|208810749| H7] [gi|33590229| H7]  
[gi|168983597| H7] [gi|209399146| H7] [gi|261255811| H7]  
[gi|188014156| H7] [gi|254793574| H7] [gi|168764454| H7]  
[gi|290762973| H7] [gi|168983593| H7] [gi|168983599| H7]  
[gi|320658017| H7] [gi|261227581| H7] [gi|254592974| H7]  
[gi|168771528| H7] [gi|13362130| H7] [gi|168783318| H7] [gi|188999278|  
H7] [gi|86604412| H7] [gi|320668487| H7] [gi|168790320| H7]  
[gi|320658589| H7] [gi|8071792| H7] [gi|8071778| H7] [gi|8071776| H7]  
[gi|168983595| H7] [gi|208725265| H7] [gi|168777348| H7]  
[gi|189354922| H7] [gi|320641772| H7] [gi|168983589| H7]  
[gi|217318231| H7] [gi|189370206| H7] [gi|291283100| H7]  
[gi|208730948| H7] [gi|168802268| H7] [gi|168983591| H7] [gi|86604414|  
H7] [gi|168751850| H7] [gi|168758235| H7] [gi|189375731| H7]  
[gi|189365565| H7] [gi|15831916| H7] [gi|195939228| H7] [gi|326342333|  
H7] [gi|320191899| H7] [gi|208741612| H7] [gi|209160546| H7]  
[gi|168983587| H7] [gi|208816605| H7] [gi|168983585| H7]  
[gi|326344838| H7] [gi|189359718| H7] [gi|208821489| H7]  
[gi|187767376| H7] [gi|217328884| H7] [gi|320652415| Hxx]  
[gi|320198617| Hxx] [gi|320647131| Hxx] [gi|324118977| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSAKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMKIQVGANDGETITITDLKKIDSDTLGLNGFNVNGKGT  
ITNKAATVSDLTSAGAKLNTTGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVDYTYNA  
KSGDFTTTKSTAGTGVDAQAADSASKRDALAATLHADVGKSVNGSYTTKDGTVSFETD  
SAGNITIGGSQAYVDDAGNLTTNAGSAAKADMKALLKAASEGSDGASLTFNGTEYTIK  
ATPATTPVAPLIPGGITYQATVSKDVVLSETKAAAATSSITFNSGVLSKTI GFTAGESS  
DAAKSYVDDKGGITNVADYTVSYSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSA  
GKITTETTSAGSATNPLAALDDAISSIDKFRSSLGAIQNRLDSAVTNLNNTTNLSEAQ  
SRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|5107837| H7

NQSALSISIERLSSGLRINSAKDDASAGQAIANRFTSNIKGLTQAARNANDGISVAQTTEG  
ALSEINNNLQRIRELTVQATTGTNSDSLDLSIQDEIKSRLDEIDRVSGQTQFNGVNVLAK  
DGSMKIQVGANDGETITITDLKKIDSDTLGLNGFNVNGKGTITNKAATVSDLTSAGAKLNT  
TGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVNYTYNAKSGDFTTTKSTAGTGVNAAA  
QAADSASKRDALAATLHADVGKSVNGSYTTKDGTVSFETDSAGNITIGGSQAYVDDAGNL  
TTNAGSAAKADMKALLKAASEGSDGASLTFNGTEYTIKATPATTPVAPLIPGGITYQ  
ATVSKDVVLSETKAAAATSSITFNSGVLSKTI GFTAGESSDAAKSYVDDKGGITNVADYT  
VSYSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSAGKITTETTSAGFATNPLAA  
LDDAISSIDKFRSSLGAIQNRLDSAVTNLNNTTNLSEAQSRIQDADYATEVSNMSKAQI  
IQQAGNSVLA

>gi|5107845| H7 [gi|5107857| Hxx]

QSALSSSIERLSSGLRINSAKDDAAGQAIANRFTSNIKGLTQAARNANDGISVAQTTEGA

LSEINNNLQRIRELTVQATTGTNSDSDLDSIQDEIKSRLDEIDRVSGQTQFNGVNVLAKD  
GSMKIQVGANDGETITIDLKKIDSDTLGLNGFNVNGKGTITNKAATVSDLTSAGAKLNTT  
TGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVNYTYNAKSGDFTTTKSTAGTGVNAAAQ  
AADSASKRDALAATLHADVGKSVNGSYTTKDGTVSFETDSAGNITIGGSQAYVDDAGNLT  
TNNAGSAAKADMKALLKAASEGSDGASLTFNGTEYTIKATPATTTTPVAPLIPGGITYQA  
TVSKDVVLSETKAAAATSSITFNSGVLSKTIGFTAGESSDAAKSYVDDKGGITNVADYTV  
SYSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSAGKITTETTSAGSATTNPLAAL  
DDAISSIDKFRSSLGAIQNRRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQII  
QQAGNSVLAKANQVP

>gi|5107843| H7

NINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKGLTQAARNANDGISVAQ  
TTEGALSEINNNLQRIRELTVQATTGTNSDSDLDSIQDEIKSRLDEIDRVSGQTQFNGVN  
VLAKDGSMKIQVGANDGETITIDLKKIDSDTLGLNGFNVNGKGTITNKAATVSDLTSAGA  
KLNTTGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVDYTYNAKSGDFTTTKSTAGTGV  
NAAAQAADSASKRDALAATLHADVGKSVNGSYTTKDGTVSFETDSAGNITIGGSQAYVDD  
AGNLTTNNAGSAAKADMKALLKAASEGSDGASLTFNGTEYTIKATPATTTTPVAPLIPGG  
ITYQATVSKDVVLSETKAAAATSSITFNSGVLSKTIGFTAGESSDAAKSYVDDKGGITNV  
ADYTVSYSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSAGKITTETTSAGSATTN  
PLAALDDAISSIDKFRSSLGAIQNRRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMS  
KAQIIQQAGNSVLAKANQVP

>gi|30721632| H7

AASEGSDGASLTFNGTEYTIKATPATTTTPVAPLIPGGITYQATVSKDVVLSETKAAAAT  
SSITFNSGVLSKTIGFTAGESSDAAKSYVDDKGGITNVADYTVSYSVNKDNGSVTVAGYA  
SATDTNKDYAPAIGTAVNV

>gi|12516024| H7 [gi|15802358| H7]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIK  
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DEIDRVSGQTQFNGVNVLAKDGSMKIQVGANDGETITIDLKKIDSDTLGLNGFNVNGKGT  
ITNKAATVSDLTSAGAKLNTTGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVDYTYNA  
KSGDFTTTKSTAGTGVNAAAQAADSASKRDALAATLHADVGKSVNGSYTTKDGTVSFETD  
SAGNITIGGSQAYVDDAGNLTNNAGSAAKADMKALXKAASEGSDGASLTFNGTEYTIK  
ATPATTTTPVAPLIPGGITYQATVSKDVVLSETKAAAATSSITFNSGVLSKTIGFTAGES  
DAAKSYVDDKGGITNVADYTVSYSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSA  
GKITTETTSAGSATTNPLAALDDAISSIDKFRSSLGAIQNRRLDSAVTNLNNTTTNLSEAQ  
SRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|8071790| H7

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIK  
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DEIDRVSGQTQFNGVNVLAKDGSMKIQVGANDGETITIDLKKIDSDTLGLNGFNVNGKGT  
ITNKAATVSDLTSAGAKLNTTGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVDYTYNA  
KSGDFTTTKSTAGTGVNAAAQAADSASKRDALAATLHADVGKSVNGSYTTKDGTVSFETD  
SAGNITIGGSQAYVDDAGNLTNNAGSAAKADMKALLKAASEGSDGASLTFNGTEYTIK  
ATPATTTTPVAPLIPGGITYQATVSKDVVLSETKAAAATSSITFNSGVLSKTIGFTAGES  
DAAKSYVDDKGGITNVADYTVSYSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSA  
GKITTETTSAGSATTNPLAALDDAISSIDKFRSSLGAIQNRRLDSAVTNLNNTTTNLSEAQ  
SRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|5107849| H7

NINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKGLTQAARNANDGISVAQ  
TTEGALSEINNNLQRIRELTVQATTGTNSDSDLDSIQDEIKSRLDEIDRVSGQTQFNGVN  
VLAKDGSMKIQVGANDGETITIDLKKIDSDTLGLNGFNVNGKGTITNKAATVSDLTSAGA  
KLNTTGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVDYTYNAKSGDFTTTKSTAGTGV  
NAAAQAADSASKRDALAATLHADVGKSVNGSYTTKDGTVSFETDSAGNITIGGSQAYVDD

AGNLTTNAGSAAKADMKALLKAASEGSDGASLTFNGTEYTI AKATPATTTVPVAPLIPGG  
ITYQATVSKDVVLSETKAAAATSSITFNSGVLSKTIGFTAGESSDAAKSYVDDKGGITNV  
ADYTVSVSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSAGKITTTETTSAGSATTN  
PLAALDDAISSIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMS  
KAQIIQQAGNSVLAKA

>gi|8071780| H7 [gi|8071782| H7]

MAQVINTNSLSLITQNNINKNQSALSSSI ERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRI RELTVQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGMKIQV GANDGETITIDLK KIDS DTLGLNGFNVNGKGT  
ITNKAATVSDLTSAGAKLNTT TGLYDLKTENTLLTTDAAF DKLGN GDKVTVGGVDYTYNA  
KSGDFTTTKSTAGTGV DAAAQATDS AKKRDAL AATLHADV GKS VNGSYTTK DGTVSFETD  
SAGNITIGGSQAYVDDAGNLTTN NAGSAAKADM KALLKAASEGSDGASLTFNGTEYTI AK  
ATPATTSPVAPLIPGGI SYQATVSKDV VLSETKAAAATSSITFNSGVLSKTIGFTAGESS  
DAAKSYVDDKGGITNVADYTVSVSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSA  
GKITTTETTSAGSATTNPLAALDDAISSIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAQ  
SRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|1655807| H7 (Hxx99.8%)

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LTQAARNANDGISVAQTTEGALSEINNNLQRI RELTVQATTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGMKIQV GANDGETITIDLK KIDS DTLGLNGFNVNGKGT  
ITNKAATVSDLTSAGAKLNTT TGLYDLKTENTLLTTDAAF DKLGN GDKVTVGGVDYTYNA  
KSGDFTTTKSTAGTGV DAAAQA ADSAKKRDAL AATLHADV GKS VNGSYTTK DGTVSFETD  
SAGNITIGGSQAYVDDAGNLTTN NAGSAAKADM KALLKAASEGSDGASLTFNGTEYTI AK  
ATPATTTPVAPLIPGGI TYQATVSKDV VLSETKAAAATSSITFNSGVLSKTIGFTAGESS  
DAAKSYVDDKGGITNVADYTVSVSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSA  
GKITTTETTSAGSATTNPLAALDDAISSIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAQ  
SRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|290439| H7 (Hxx98.6%)

MAQVINTNSLSLITQNNINKNQ SALSSSI ERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRI RELTVQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGMKIQV GANDGETITIDLK KIDS DTLGLNGFNVNGKGT  
ITNKAATVSDLTSAGAKLNTT TGLYGLKTENTLLTTDAAF DKLGN GDKVTVGGVDIYNAK  
SGDFTTTKSTAGTGV DAAAQATDS AKKRDAL AATLHADV GKS VNGSYTTK DGTVSFVTDS  
AGNITIGGSQAYVDDAGNLTTN NAGSARKADM KALLKAASEGSDGASLTFNGTEYTI AKA  
TPATTSPVAPLIPGGI TYQATVSKDV VLSETKAAAATSSVTFNSGVLSKTIGFTAGESSD  
AAKSYVDDKGGITNVADYTVSVSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSAG  
KITTTETTSAGSATTNPLAALDDAISSIDKFRSSVGAIQNRLDSAVTNLNNTTTNLSEAQS  
RIQDADYATEVSNMSKAQIIQQAGSSVLAKANQVPQQVLSLLQG

>gi|6009837| H7 (Hxx100.0%) [gi|8071788| H7] [gi|8071786| H7]  
[gi|30059856| H7] [gi|8071784| H7] [gi|294491527| Hxx] [gi|323952418|  
Hxx] [gi|218365550| Hxx] [gi|115513189| Hxx] [gi|91072716| Hxx]  
[gi|300454811| Hxx] [gi|117624065| Hxx] [gi|91211142| Hxx]  
[gi|300940374| Hxx] [gi|307626600| Hxx] [gi|323956320| Hxx]  
[gi|218558781| Hxx] [gi|315286640| Hxx] [gi|355352039| Hxx]

MAQVINTNSLSLITQNNINKNQ SALSSSI ERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRI RELTVQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGMKIQV GANDGETITIDLK KIDS DTLGLNGFNVNGKGT  
ITNKAATVSDLTSAGAKLNTT TGLYDLKTENTLLTTDAAF DKLGN GDKVTVGGVDYTYNA  
KSGDFTTTKSTAGTGV DAAAQATDS AKKRDAL AATLHADV GKS VNGSYTTK DGTVSFETD  
SAGNITIGGSQAYVDDAGNLTTN NAGSAAKADM KALLKAASEGSDGASLTFNGTEYTI AK  
ATPATTSPVAPLIPGGI TYQATVSKDV VLSETKAAAATSSITFNSGVLSKTIGFTAGESS  
DAAKSYVDDKGGITNVADYTVSVSVNKDNGSVTVAGYASATDTNKDYAPAIGTAVNVNSA



GKITTETTSAGSATTNPLAALDDAISSIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAO  
SRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|4731618| H7 (Hxx98.7%)

LCASRSSIERLSSGLRLNRAKDHSAGQAIANRFTSNIKGLTQAARNANDGISVAQTTEGA  
LSEINNNLQRIRELTVQATTGTNSDSDLDSIQDEIKSRLDEIDRVSGQTQFNGVNVLAKD  
GSMKIQVGANDGETITIDLKIDSIDLGLNGFNNGKGTITNKAATVSDLTSAGAKLNTT  
TGLYDLKTENTLLTTDAAFDKLNGDKVTVGGVNYTYNAKSGDFTTTKSTAGTGVNAAAQ  
AADSASKRDALAATLHADVGVKSVNGSYTTKDGTVSFETDSAGNITIGGSQAYVDDAGNLT  
TNNAGSAAKADMKALLKAASEGSDGASLTFNGTEYTIKATPATTPVAPLIPGGITYQA  
TVSKDVVLSETKAAAATSSITFNSGVLSTIGFTAGESSDAAKSYVDDKGGITNVADYTV  
SYSVKNKNGSVTVAGYASATDTNKDYAPAIGTAVNVNSAGKITTETTSAGSATTNPLAAL  
DDAISSIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAOQSRIQDADYATEVSNMSKAQII  
QQAGNSVLAKANQVR

>gi|118403361| H8 [gi|124516985| H8] [gi|124516987| H8] [gi|124516983|  
H8] [gi|345359102| Hxx] [gi|345340735| Hxx] [gi|323180826| Hxx]  
[gi|257764871| Hxx] [gi|260868515| Hxx]

MAQVINTNSLSLLTQNNLNKSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
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EIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYDVGGKTYTVNVESGAVKNDANKDVFVSAADGSLTSSDTKVS  
GESIDATELAKLAIKLADKGSIEYKGITFTNNTGAELDANGKGVLTANIDGQDVQFTIDS  
NAPTGAGATITTDVAVYKNSAGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNV  
SADGKTVDTTTPGAPKVMYLSKSEGGSPILVNEDAAKSLQSTTNPLETIDKALAKVDNLR  
SDLGAVQNRFDFAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQA  
NQTTQNVLSLLR

>gi|124516965| H8 [gi|124516969| H8] [gi|124516967| H8] [gi|124516971|  
H8]

SQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTEG  
ALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAEITQRLLEEIDRVSEQTQFNGVKVLAE  
NNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNYDV  
GGKTYTVNVESGAVKNDANKDVFVSAADGSLT

>gi|25992223| H8

SQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTEG  
ALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAEITQRLLEEIDRVSEQTQFNGVKVLAE  
NNEMKIQVGANDGETITINLAKIDAKTLGLDGFNINGAQAQKATGSDLISKFKATGTDNYDV  
GGKTYTVNVESGAVKNDANKDVFVSAADGSLTSSDTKVS GESIDATELAKLAIKLADKGS  
IEYKGITFTNNTGAELDANGKGVLTANIDGQDVQFTIDSDAPTGAGATITTDVAVYKNS  
AGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNVSADGKTVDTTTPGAPKVMYL  
SKSEGGSPNLVNEDAAKSLQFTTNPLETIDKALAKVDNLRSLGAVQNRFDFAITNLGNT  
VNNLFSARSRIEDADYATEVSNMFRAQILQQAGT

>gi|40353143| H8

LLTQNNLNKSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDG  
ISVAQTTEGALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAEITQRLLEEIDRVSEQTQ  
FNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFK  
ATGTDNYDVGGKTYTVNVESGAVKNDANKDVFVSAADGSLTSSDTKVS GESIDATELAK  
LAIKLADKGSIEYKGITFTNNTGAELDANGKGVLTANIDGQDVQFTIDSNAPTGAGATIT  
TDTAVYKNSAGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNVSADGKTVDTTT  
PGAPKVMYLSKSEGGSPILVNEDAAKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD  
SAITNLGNTVNNLSSARSRIEDADYATEVSNMS

>gi|30059858| H8

NKSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTT  
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AENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNY  
DVGGKTYTVNVESGAVKNDANKDVVSAADGSLTSSDTKVSGESIDATELAKLAIKLAD  
KGSIEYKGITFTNNTGAELDANGKGVLTANIDGQDVQFTIDSNAPTGAGATITTDTAVYK  
NSAGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNVSADGKTVDTTTPGAPKVM  
YLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFDASAITNLG  
NTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQ

>gi|325650984| H8

MAQVINTNSLSLLTQNNLNKSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
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EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYDVGGKTYTVNVESGAVKNDANKDVVSAADGSLTSSDTKVSGE  
SIDATELAKLAIKLADKGSIEYKGITFTNNTGAELDANGKGVLTANIDGQDVQFTIDS  
NAPTGAGATITTDTAVYKNSAGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNV  
SADGKTVDTTTPGAPKVMYLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKV

>gi|40353145| H8 (Hxx99.6%)

LVQVINTNSLSLLTQNNLNKSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAEITQRL  
EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYDVGGKTYTVNVESGAVKNDANKDVVSAADGSLTSSDTKVSGE  
SIDATELAKLAIKLADKGSIEYKGITFTNNTGAELDANGKGVLTANIDGQDVQFTIDS  
NAPTGAGATITTDTAVYKNSAGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNV  
SADGKTVDTTTPGAPKVMYLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLR  
SDLGAVQNRFDASAITNLGNTVNNLSSARSRIEDADYATEVSNMS

>gi|3377710| H9 [gi|30059860| H9]

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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKKIDSIDLNLGAFNVNGKGS  
VANTAATSDDLKLAGFTKGTDTDTNGVTAYTNTISNDKAKASDLLANITDGSVITGGGANA  
FGVAAKNGYTYDAASKSYSFAADGADSAKTLSIINPNTGDSSQATVTIGGKEQKVNISQD  
GKITAADDNATLYLDKQGNLTKTNAGNDAATWDGLISNSDSTGAVPVGVAATTITITSGT  
ASGMSVQSAGAGIQTSTNSQILAGGAFAAKVSIEGGAATDILVASNGNITAADGSALYLD  
ATTGGFTTTAGGNTAASLDNLIANSKDATLTVTSGTGQNTVYSTTGSGAQFTSLAKVDTV  
NVTNAHVSAEGMANLTKSNFTIDMGGTGTVYTVSNGDVKAAANADVVEDGALSANATK  
DVTYFEQKNGAITNSTGGTIYETADGKLTTEATTASSSTADPLKALDEAISSIDKFRSSL  
GAVQNRLDASVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQG

>gi|192955539| H9 [gi|193071144| H9]

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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKKIDSIDLNLGAFNVNGKGS  
VANTAATSDDLKLAGFTKGTDTDTNGVTAYTNTISNDKAKASDLLANITDGSVITGGGANA  
FGVAAKNGYTYDAASKSYSFAADGADSAKTLSIINPNTGDSSQATVTIGGKEQKVNISQD  
GKITAADDNATLYLDKQGNLTKTNAGNDAATWDGLISNSDSTGAVPVGVAATTITITSGT  
ASGMSVQSAGAGIQTSTNSQILAGGAFAAKVSIEGGAATDILVASNGNITAADGNALYLD  
ATTGGFTTTAGGNTAASLDNLIANSKDATLTVTSGTGQNTVYSTTGSGAQFTSLAKVDTV  
NVTNAHVSAEGMANLTKSNFTIDMGGTGSVYTVSNGDVKAAANADVVEDGALSANATK  
DVTYFEQKNGAITNSTGGTIYETADGKLTTEATTASSSTADPLKALDEAISSIDKFRSSL  
GAVQNRLDASVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQG

>gi|300316660| H9 (Hxx99.7%) [gi|323940414| Hxx] [gi|300956560| Hxx]

[gi|300449175| Hxx] [gi|300951548| Hxx]

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VANTAATSDDLKLAGFTKGTDTNGVTAYTNTISNDKAKASDLLANITDGSVITGGGANA  
FGVAAKNGYTYDAASKSYSFAADGADS AKTLSI INPNTGDSSQATVTIGGKEQKVNISQD  
GKITAADDNATLYLDKQGNLTKTNAGNDAATWDGLISNSDSTGAVPVGVAATTITITISGT  
ASGMSVQSAGAGIQSTNSQILAGGAFAAKVSIEGGAATDILVASNGNITAADGNALYLD  
ATTGGFTTTAGGNTAASLDNLIANSKDATLTVTSGTGQNTVYSTTGSGAQFTSLAKVDTV  
NVTNAHVSAEGMANLTKSNFTIDMGGTGTVTYTVSNGDVKAAANADVVEDGALSANATK  
DVTYFEQKNGAITNSTGGTIYETADGKLTTEATTASSSTADPLKALDEAISSIDKFRSSL  
GAVQNRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQG

>gi|345376585| H9 (Hxx99.1%)

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKKIDSOTLNLGAFNVNGKGS  
VANTAATSDDLKLAGFTKGTDTNGVTAYTNTISNDKAKASDLLANITDGSVITGGGANA  
FGVAAKNGYTYDAASKSYSFAADGADS AKTLSI INPNTGDSSQATVTIGGKEQKVNISQD  
GKITAADDNATLYLDKQGNLTKTNAGNDAATWDGLISNSDSTGAVPVGVAATTITITISGT  
ASGMSVQSAGAGIQSTNSQILAGGAFAAKVSIEGGAATDILVASNGNITAADGNALYLD  
ATTGGFTTTAGGNTAASLDNLIANSKDATLTVTSGTGQNTVYSTTGSGAQFTSLAKVDTV  
NVTNAHVSAEGMANLTKSNFTIDMGGTGTVTYTVSNGDVKAAANADVVEDGALSANATK  
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>gi|6941880| H10 [gi|323972714| Hxx] [gi|194439566| Hxx]  
[gi|194421475| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRVRELTVQATTGTNSESDLSSIQDEIKSRL  
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SVKDGATINKQVAVGAGDFKDKASGSLGTLKLVKEDGKYYVNDTTNSKYYDAEVDTSKGE  
INFNSTNESGTPPTAATEVTTVGRDVKLDASALKANQSLVVYKDKSGNDAYIIQTKDVTT  
NQSTFNAANISDAGVLSIGASTTAPSNLTADPLKALDDAIASVDKFRSSLGAVQNRLDSA  
IANLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|30059862| H10 [gi|323961972| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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EEIDRVSSQTQFNGVNVLAKDGKMN IQVGANDGQTITIDLKKIDSSTLNLSSFDATNLGT  
SVKDGATINKQVAVGAGDFKDKASGSLGTLKLVKEDGKYYVNDTKSSKYYDAEVDTSKGE  
INFNSTNESGTTPTAATEVTTVGRDVKLDASALKANQSLVVYKDKSGNDAYIIQTKDVTT  
NQSTFNAANISDAGVLSIGASTTAPSNLTANPLKALDDAIASVDKFRSSLGAVQNRLDSA  
IANLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|109390656| H10

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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EEIDRVSSQTQFNGVNVLAKDGKMN IQVGANDGQTITIDLKKIDSSTLNLSSFDATNLGT  
SVKDGATINKQVAVGAGDFKDKASGSLGTLKLVKEDGKYYVNDTTNSKYYDAEVDTSKGE  
INFNSTNESGTPPTAATEVTTVGRDVKLDASALKANQSLVVYKDKSGNDAYIIQTKDVTT  
NQSTFNAANISDAGVLSIGASTTAPSNLTADPLKALDDAIASVDKFRSSLGAVQNRLDSA  
IANLNNTTTTNL

>gi|33590255| H10

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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EEIDRVSSQTQFNGVNVLAKDGKMN IQVGANDGQTITIDLKKIDSSTLNLSSFDAANLGT  
SVKDGATINKQVAVGAGDFKDKASGSLGTLKLVKEDGKYYVNDTKSSKYYDAEVDTSKGE

INFNSTNESGTTPTAATEVTTVGRDVKLDASALKANQSLVVYKDKSGNDAYIIQTKDVTT  
NQSTFNAANISDAGVLSIGASTTAPSNLTADPLKALDDAIASVDKFRSSLGAVQNRLDSA  
IANLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG  
>gi|332343650| H10 (Hxx99.8%)

MAQVINTNSLSLITQNNINKNQSALSSSIERSLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNAYDGISVAQTTEGALSEINNNLQRVRELTVQATTGTNSESDLSSIQDEIKSRL  
EEIDRVSSQTQFNGVNVLAKDGKMNIOVGANDGQITITIDLKIDSSTLNLSSFDATNLGT  
SVKDGATINKQVAVGAGDFKDKASGSLGTLKLVKEDGKYVNDTNSKYDAEVDTSKGE  
INFNSTNESGTPPTAATEVTTVGRDVKLDASALKANQSLVVYKDKSGNDAYIIQTKDVTT  
NQSTFNAANISDAGVLSIGASTTAPSNLTADPLKALDDAIASVDKFRSSLGAVQNRLDSA  
IANLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG  
>gi|291432882| H10 (Hxx99.8%) [gi|293415234| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERSLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRVRELTVQATTGTNSESDLSSIQDEIKSRL  
EEIDRVSSQTQFNGVNVLAKDGKMNIOVGANDGQITITIDLKIDSSTLNLSSFDATNLGT  
SVKDGATINKQVAVGAGDFKDKASGSLGTLKLVKEDGKYVNDTNSKYDAEVDTSKGE  
INFNSTNESGTTPTAATEVTTVGRDVKLDASALKANQSLVVYKDKSGNDAYIIQTKDVTT  
NQSTFNAANISDAGVLSIGASTTAPSNLTADPLKALDDAIASVDKFRSSLGAVQNRLDSA  
IANLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG  
>gi|33590223| H11

MAQVINTNSLSLLTQNNLNKSQSSLSAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
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EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYDVGGDAYTVNVDSGAVKDTTGNDIFVSAADGSLTTKSDTNIA  
GTGIDATALAAAANKAQNDFKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDAD  
KKASLITSETVYKNSAGLYTTTKVDNKAATLSDLDLNAAKKTGSTLVVNGATYDVSADGK  
TITETASGNKVMYLSKSEGGSPILVNEAAKSLQSTTNPLETIDKALAKVDNLRSDLGA  
VQNRFDASAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQANQTTQ  
NVLSLLQG

>gi|257752125| H11 [gi|260853476| H11] [gi|298378979| Hxx]  
[gi|323976259| Hxx] [gi|315059552| Hxx] [gi|338766903| Hxx]  
[gi|260866422| Hxx] [gi|298280092| Hxx] [gi|257762778| Hxx]  
MLSINTNNASMAAVNAISKSSSSLSTSMERLATGNRINSSADDAAGKQIANRLTAQSSGM  
GVALSNINDATAMLQTADSMFDEMSDVLGRMKDLSTQAANGTYSDDDQAMQDEYDELGQ  
QMSDMLQNTTYGGTNLFGVSGTSNTGTDGLFQSAVTFQVGAESSDTMTVNISSQLNLT  
DLAISNSFSADQADTTGTAGVSGTELTASGSANQMITSI STAMDDVSQIQSKLGASIN  
RLNDTANNLTSMDNTEVAIGNIMDTDYATEASNMTKQQVLMQGTITMLKQSNSSMSMVS  
SLLQ

>gi|257754552| H11 [gi|260855903| H11] [gi|323152744| Hxx]  
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EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYDVGGDAYTVNVDSGAVKDTTGNDIFVSAADGSLTTKSDTNIA  
GTGIDATALAAAANKAQNDFKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDAD  
KKASLITSETVYKNSAGLYTTTKVDNKAATLSDLDLNAAKKTGSTLVVNGATYDVSADGK  
TITETASGNKVMYLSKSEGGSPILVNEAAKSLQSTTNPLETIDKALAKVDNLRSDLGA  
VQNRFDASAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQANQTTQ  
NVLSLLR

>gi|59044663| H11 [gi|59044673| H11] [gi|59044679| H11] [gi|59044677|  
H11] [gi|59044695| H11] [gi|59044685| H11] [gi|59044675| H11]  
[gi|59044687| H11] [gi|59044667| H11] [gi|59044699| H11] [gi|59044671|  
H11] [gi|59044691| H11] [gi|59044693| H11] [gi|59044683| H11]

[gi|59044665| H11] [gi|59044681| H11] [gi|59044669| H11] [gi|59044689| H11]

NSLSLLTQNNLNKSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRN  
ANDGISVAQTTEGALNEINNNLQRVRELTQATNGTNSDSDLSSIQAEITQRLEEIDRV  
EQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLI  
SKFKATGTDNYDVGGDAYTVNVDSGAVKDTTGNDFVSAADGSLTTKSDTNIAGTGIDAT  
ALAAAAKNKAQNDKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDADKKASLIT  
SETVYKNSAGLYTTTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTI TETAS  
GNNKVMYLSKSEGGSPILVNEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD  
S AITNLGNTVNNLSSARSRIEDADYA

>gi|59044701| H11

NSLSLLTQNNLNKSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRN  
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EQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLI  
SKFKATGTDNYDVGGDAYTVNVDSGAVKDTTGNDFVSAADGSLTTKSDTNIAGTGIDAT  
ALAAAAKNKAQNDKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDADKKASLIT  
SETVYKNSAGLYTTTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTI TETAS  
GNNKVMYLSKSEGGSPILVNEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD  
S AITNLGNTVNNLSSARSRIEDADYA

>gi|25992225| H11

SQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTEG  
ALNEINNNLQRVRELTQATNGTNSDSDLSSIQAEITQRLEEIDRVSEQTQFNGVKVLA  
ENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLI SKFKATGTDNYDV  
GGDAYTVNVDSGAVKDTTGNDFVSAADGSLTTKSDTNIAGTGIDATALAAAAKNKAQND  
KFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDADKKASLITSETVYKNSAGLYT  
TTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTI TETASGNNKVMYLSKSEG  
GSPILVNEDA AKSLQFTTNPLETIDKALAKVDNLRSDLGAVQNRFDFAITNLGNTVNNLF  
SARSRIEDADYATEVSNMFRAQILQQAGT

>gi|59044697| H11

NSLSLLTQNNLNKSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRN  
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EQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLI  
SKFKATGTDNYDVGGDAYTVNVDSGAVKDTTGNDFVSAADGSLTTKSDTNIAGTGIDAT  
ALAAAAKNKAQNDKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDADKKASLIT  
SETVYKNSAGLYTTTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTI TETAS  
GNNKVMYLSKSEGGSPILVNEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD  
S AITNLGNTVNNLSSARSRIEDADYA

>gi|30059864| H11

NKSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTT  
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AENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLI SKFKATGTDNY  
DVGGDAYTVNVDSGAVKDTTGNDFVSAADGSLTTKSDTNIAGTGIDATALAAAAKNKAQ  
NDKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDADKKASLITSETVYKNSAGL  
YTTTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTI TETASGNNKVMYLSKS  
EGGSPILVNEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD SAITNLGNTVNN  
LSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQ

>gi|33590237| H11

MAQVINTNSLSLLTQNNLNKSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
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EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLI SKFKATGTDNYDVGGDAYTVNVDSGAVKDTTGNDFVSAADGSLTTKSDTNI  
AGTGIDATALAAAAKNKAQNDKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDAD

KKASLITSETVYKNSAGLYTTTTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGK  
TITETASGNNKVMYLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLRSDLGA  
VQNRFDASAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQANQTTQ  
NVLSLLQG

>gi|54261989| H11 [gi|54261998| H11] [gi|54262010| Hxx] [gi|54261995|  
Hxx] [gi|54262007| Hxx] [gi|54262004| Hxx] [gi|54261992| Hxx]  
[gi|54262001| Hxx]

NDIFVSAADGSLTTKSDTNIAGTGIDATALAAAAKNKAQNDKFTFNGVEFTTTTAADGNG  
NGVYSAEIDGKSVTFTVTDADKKASLITSETVYKNSAGLYTTTTKVDNKAATLSDDLNA  
KKTGSTLVVNGATYDVSADGKTITETASGNNKVMYLSKSEGGSPILVNEDAASLQSTTN  
PLETIDKALAKVDNLRSDLGAVQNRFDASAITNLGNTVNNLSSARSRIEDADYATEVSNMS  
RAQILQQAGTSVLAQANQTTQNVLSLLR

>gi|62532942| H11

VAQTTEGALNEINNNLQRVRELTVQATNGTNSDSDLSSIQAEITQRLEEIDRVSEQTQFN  
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GTDNYDVGDAYTVNVDSGAVKDTTGNDIFVSAADGSLTTKSDTNIAGTGIDATALAAAA  
KNKAQNDKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDADKKASLITSETVYK  
NSAGLYTTTTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTITETASGNNKVM  
YLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFDASAITNLG  
NTVN

>gi|6706170| H11 (Hxx100.0%) [gi|6706172| H11]

NLNKSQSSLSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQ  
TTEGALNEINNNLQRVRELTVQATNGTNSDSDLSSIQAEITQRLEEIDRVSEQTQFNGVK  
VLAENEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTD  
NYDVGDAYTVNVDSGAVKDTTGNDIFVSAADGSLTTKSDTNIAGTGIDATALAAAAKNK  
AQNDKFTFNGVEFTTTTAADGNGNGVYSAEIDGKSVTFTVTDADKKASLITSETVYKNSA  
GLYTTTTKVDNKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTITETASGNNKVMYLS  
KSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFDASAITNLGNTV  
NNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVL

>gi|5107847| H12

NNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKGLTQAARNANDGISVA  
QTTEGALSEINNNLQRIRELTVQASTGTNSDSDLDSIQDEIKSRLDEIDRVSGQTQFNGV  
NVLAKDGSMMKIQVGANDGQTITIDLKIDSDDLGLNGFNVNGSGTIANKAATISDLTAAK  
MDAATNTITTTNNALTASKALDQLKDGDVTTIKADAAQTATVYTYNASAGNFSFSNVSNN  
TSEKAGDVAASLLPPAGQTAIGVYKAASGEVNFVDANGKITIGGQKAYLTS DGNLTTND  
AGGATAATLDGLFKKAGDGQSIGFKKTASVTMGGTTYNFKTGADADAATANAGVSFTDTA  
SKETVLNKVATAKQKAAAADGDTSATITYKSGVQTYQAVFAAGDGTASAKYADKADVSN  
ATATYTDADGEMTTIGSYTTKYSIDANNGKVTVDSTGTGKYAPKVGAEVYVSANGTLTT  
DATSEGTVTKDPLKALDEAISSIDKFRSSLGAIQNRLDSAVTNLNNTTTLSEAQSRIQD  
ADYATEVSNMSKAQIIQQAGNSVLA

>gi|33590235| H12 [gi|345362856| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTITIDLKIDSDDLGLNGFNVNGSGT  
IANKAATISDLTAAKMDAATNTITTTNNALTASKALDQLKDGDVTTIKADAAQTATVYTY  
NASAGNFSFSNVSNNNTSEKAGDVAASLLPPAGQTASGVYKAASGEVNFVDANGKITIGG  
QKAYLTS DGNLTTNDAGGATAATLDGLFKKAGDGQSIGFKKTASVTMGGTTYNFKTGADA  
DAATANAGVSFTDTASKETVLNKVATAKQKAAAADGDTSATITYKSGVQTYQAVFAAGD  
GTASAKYADKADVSNATATYTDADGEMTTIGSYTTKYSIDANNGKVTVDSTGTGKYAPK  
VGAEVYVSANGTLTTDATSEGTVTKDPLKALDEAISSIDKFRSSLGAIQNRLDSAVTNLN  
NTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|33590241| H12

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAQKDGSMKIQVGANDGQTITIDLKKIDSRTLGLNGFNVNGSGT  
IANKAATISDLTAAKMDAATNTITTTNNALTASKALDQLKDGDTVTIKADAAQTATVYTY  
NASAGNFSLSNVSNNTSEKAGDVAASLLPPAGQTASGVYKAASGEVNFVDANGKITIGG  
QKAYLTS DGNLTTNDAGGATAATLDGLFKKAGDGQSIGFKKTASVTMGGTTYNFKTGADA  
DAATANAGVSFTDTASKETVLNKVATAKQGGKAAAADGDTSATITYKSGVQTYQAVFAAGD  
GTASAKYADKADVSNATATYTDADGEMTTIGSYTTKYSIDANNGKVTVDSTGTGKYAPK  
VGAEVYVSANGTLTTDATSEGTVTKDPLKALDEAISSIDKFRSSLGAIQNRLDSAVTNLN  
NTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|6009839| H12 [gi|30059866| H12]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAQKDGSMKIQVGANDGQTITIDLKKIDSRTLGLNGFNVNGSGT  
IANKAATISDLTAAKMDAATNTITTTNNALTASKALDQLKDGDTVTIKADAAQTATVYTY  
NASAGNFSSNVSNNTSAKAGDVAASLLPPAGQTASGVYKAASGEVNFVDANGKITIGG  
QKAYLTS DGNLTTNDAGGATAATLDGLFKKAGDGQSIGFKKTASVTMGGTTYNFKTGADA  
DAATANAGVSFTDTASKETVLNKVATAKQGGKAVAADGDTSATITYKSGVQTYQAVFAAGD  
GTASAKYADKADVSNATATYTDADGEMTTIGSYTTKYSIDANNGKVTVDSTGTGKYAPK  
VGAEVYVSANGTLTTDATSEGTVTKDPLKALDEAISSIDKFRSSLGAIQNRLDSAVTNLN  
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>gi|145997| H12 (Hxx99.7%)

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAQKDGSMKIQVGANDGQTITIDLKKIDSRTLGLNGFNVNGSGT  
IANKAATISDLTAAKMDAATNTITTTNNALTASKALDQLKDGDTVTIKADAAQTATVYTY  
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QKAYLTS DGNLTTNDAGGATAATLDGLFKKAGDGQSIGFKKTASVTMGGTTYNFKTGADA  
DAATANAGVSFTDTASKETVLNKVATAKQGGKAVAADGDTSATITYKSGVQTYQAVFAAGD  
GTASAKYADKADVSNATATYTDADGEMTTIGSYTTKYSIDANNGKVTVDSTGTGKYAPK  
VGAEVYVSANGTLTTDATSEGTVTKDPLKALDEAISSIDKFRPSLGAIQNRLDSAVTNLN  
NTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|30059868| H14

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAQKDGSMKIQVGANDGQTITIDLKKIDSRTLGLSGFNVNGGGA  
VANTAASKADLVAANATVVGNYKTVSAGYDAKASDLLAGVSDGDTVQATINNGFGTAAS  
ATNYKYDSASKSYSFDTTASAADVQKYLTPGVGDTAKGTITIDGSAQDVQISSDGKITS  
SNGDKLYIDTTGRLTKNGFSASLSTEASLSTLAANNKATTIDIGGTSISFTGNSTTPNTI  
TYSVTGAKVDQAAFDKAVSTSGNDVDFTTAGYSVDGATGAVTKGVAPVYIDNNGALTTSD  
TVDFYLQDDGSVTNGSGKAVYKDADGKLTDAETKAATTADPLKALDEAISSIDKFRSSL  
GAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQG

>gi|6941882| H14

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAQKDGSMKIQVGANDGQTITIDLKKIDSRTLGLSGFNVNGGGS  
VANTAASKADLVAANATVVGNYKTVSAGYDAKASDLLAGVSDGDTVQATINNGFGTAAS  
ATNYKYDSASKSYSFDTTASAADVQKYLTPGVGDTAKGTITIDGSAQDVQISSDGKITA  
SNGDKLYIDTTGRLTKNGSGASLSTEASLSTLAANDKATTIDIGGTSISFTGNSTTPDTI  
TYSVTGAKVDQAAFDKAVSTSGNNVDFTTAGYSVNGTTGAVTKGGNSVYVDNNGALTTSD  
TVDFYLQDDGSVTNGSGKAVYKDADGKLTDAETKAATTADXLKALDEAISSIDKFRSSL

GAVQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQG

>gi|30059870| H15 [gi|338769978| Hxx]

MAQVINTNSLSLITQNNINKNQSSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKKIDSSTLNLTFGNVNGSGS  
VANTAATKADLTAAQLSAPGAADANGTVTYTVSAGYKESTAADVIA SIKDGSAPTSAITA  
TINNGFGDSSALTSNDYTYDPAKGDFTYDVASSANNTAAQVQSFLT PKAGDTANLKVTVG  
TTSVDVVLASDGKITAKDGSALYIDSTGNLTQNSAGLTS AKLATLTGLQSGVASTITTE  
DGTNIDIAANGNIGLTGVRI SADSLQ SATKSTGFTVGTGATGLTVGTDGKVTIGGTTAQS  
YTSKDGSLTTDNTTKLYLQKDG SVTNGSGKAVYVEADGFTTDAATKAATTTDPLKALDE  
AISQIDKFRSSLGAIQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQ  
AGNSVLAKANQVPQQVLSLLQG

>gi|33590243| H16

MAQVINTNSLSLLTQNNLNKSSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALSEINNNLQRIRELSVQATNGTNSDSDLNSIQDEITQRL  
SEIDRVSNQTQFNGVKVLASDQTMKIQVGANDGETIEIALDKIDAKTLGLDNFSVAPGKV  
PMSSAVALKSEAAPDLTKVNATDGSVGGAKAFSGSNYKNADVETYFGTGNVQDTKDTTDAT  
GTAGTKVYQVQVEGQTYFVGQDNNTNTNGFTLLKQNSTGYEKVQVGGKDVQLANFGGRVT  
AFVEDNGSATSVDLAAGKMGKALAYNDAPMSVYFGGKNLDVHQVQDTQGNPVPNSFAAKT  
SDGTYIAVNVDAATGNTSVITDPNGKAVEWAVKNDGSAQAIMREDDKVYTANITNKTATK  
GAELSASDLKALATTNPLSKLDEALAKVDKLRSSLGAVQNRFD SAI TNLGNTVNNLSSAR  
SRIEDADYATEVSNMSRAQIILQQAGTSVLAQANQTTQNVLSLLQG

>gi|30059872| H16

NKSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTT  
EGALSEINNNLQRIRELSVQATNGTNSDSDLNSIQDEITQRLSEIDRVSNQTQFNGVKVL  
ASDQTMKIQVGANDGETIEIALDKIDAKTLGLDNFSVAPGKVPMSAVALKSEAAPDLTK  
VNATDGSVGGAKAFSGSNYKNADVETYFGTGNVQDTKDTTDATGTAGTKVYQVQVEGQTYF  
VGQDNNTNTNGFTLLKQNSTGYEKVQVGGKDVQLANFGGRVTAFVEDNGSATSVDLAAGK  
MGKALAYNDAPMSVYFGGKNLDVHQVQDTQGNPVPNSFAAKTSDGTYIAVNVDAATGNTS  
VITDPNGKAVEWAVKNDGSAQAIMREDDKVYTANITNKTATKGAELSASDLKALATTNPL  
SKLDEALAKVDKLRSSLGAVQNRFD SAI TNLGNTVNNLSSARSRIEDADYATEVSNMSRA  
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>gi|33590247| H16

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SEIDRVSNQTQFNGVKVLASDQTMKIQVGANDGETIEIALDKIDAKTLGLDNFSVAPGKV  
PMSSAVALKSEAAPDLTKVNATDGSVGGAKAFSGSNYKNADVETYFGTGNVQDTKDTTDAT  
GTAGTKVYQVQVEGQTYFVGQDNNTNTNGFTLLKQNSTGYEKVQVGGKDVQLANFGGRVT  
AFVEDNGSATSVDLAAGKMGKALAYNDAPMSVYFGGKNLDVHQVQDTQGNPVPNSFAAKT  
SDGTYIAVNVDAATGNTSVITDPNGKAVEWAVKNDGSAQAIMREDDKVYTANITNKTATK  
GAELSASDLKALATTNPLSKLDEALAKVDKLRSSLGAVQNRFD SAI TNLGNTVNNLSSAR  
SRIEDADYATEVSNMSRAQIILQQAGTSVLAQANQTTQNVLSLLQG

>gi|33590245| H16

MAQVINTNSLSLLTQNNLNKSSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
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SEIDRVSNQTQFNGVKVLASDQTMKIQVGANDGETIEIALDKIDAKTLGLDNFSVAPGKV  
PMSSAVALKSEAAPDLTKVNATDGSVGGAKAFSGSNYKNADVETYFGTGNVQDTKDTTDAT  
GTAGTKVYQVQVEGQTYFVGQDNNSNTNGFTLLKQNSTGYEKVQVGGKDVQLANFGGRVT  
AFVEDNGSATSVDLAAGKMGKALAYNDAPMSVYFGGKNLDVHQVQDTQGNPVPNSFAAKT  
SDGTYIAVNVDAATGNTSVITDPNGKAVEWAVKNDGSAQAIMREDDKVYTANITNKTATK  
GAELSASDLKALATTNPLSKLDEALAKVDKLRSSLGAVQNRFD SAI TNLGNTVNNLSSAR



SRIEDADYATEVSNMSRAQILQQAGTSVLAQANQTTQNVLSLLQG

>gi|46093567| H16 (Hxx99.6%)

MAQVINTNSLSLLTQNNLNKSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALSEINNNLQRIRELSVQATNGTNSDSLNSIQDEITQRL  
SEIDRVSNQTFNGVKVLAASDQTMKIQVGANDGETIEIALDKIDAKTLGLDNFSVAPGKV  
PMSAVALKSEAAPDLTKVNATDGSVGGAKAFGSNYKNADVETYFGTGNVQDTKDTTDAT  
GTAGTKVYQVQVEGQTYFVGQDNNTNTNGFTLLKQNSTGYEKVQVGGKDVQLANFGGRVT  
AFVEDNGSATSVDLAAGKMGKALAYNDAPMSVYFGGKNLDVHQVQDTQGNPVPNSFAAKT  
SDGTYIAVNVDAAATGNTSVITDPNGKAVEWAVKNDGSAQAIMREDDKVYTANITNKTATK  
GAELSASDLKALATTNPLSALDEALAKVDKLRSSLGAVQNRFDASAITNLGNTVNNLSSAR  
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>gi|56383043| H17

MAQVINTNSLSLITQNNINKNQSALSSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLSKNDMSMKIQIGANDNQTTISIGLQQIDSTTLNLKGFTVSGMAD  
FSAAKLTAADDTAIAAADVKDAGGKQVNLSTYDTASNSTKYAVVDSATGKYMVAVVIT  
GTAAAVTVGAAEVAGAATAADPLKALDAAIAKVDKFRSSLGAVQNRLDASVTNLNNTTTNL  
SEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLSKANQVPQQVLSLLQG

>gi|30577587| H17

MAQVINTNSLSLITQNNINKNQSALSSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTAEGALSEINNNLQRIRELTVQASTGTNSDSLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKNDMSMKIQIGANDNQTTISIGLQQIDSTTLNLKGFTVSGMAD  
FSAAKLTAADGTIAIAAADVKDAGGKQVNLSTYDTASNSTKYAVVDSATGKYMAAVVIT  
STAAAVTVGATEVAGAATAEPLKALDAAIAKVDKFRSSLGAVQNRLDASVTNLNNTTTNL  
SEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLSKANQVPQQVLSLLQG

>gi|224579297| H17

LRHINKNQSSMSTAIERLSSGLRINSKDDAAGQAIANRFTSNIKGLTQAARNANDGISV  
AQTTEGALSEINNNLQRVRELTVQASTGTNSASDLSSIQDEIKSRLSEIDRVSSQTQFNG  
VNVLAKDGKMNIIQVGANDGQTITIDLKIDSATLGLTGFDVQKKSTISKAAVEITTTTTTP  
YTEGNNTIALKSSDTANMKDGTNAKVSFSFDKATNSYFAIVADGSADNTLKNGTYIATL  
DSSGEVTLGSSTTAPNTATAVTKNQVAGTPVTTSTPVAVTAAANTALSNAAGVTGSVELVK  
LTSTDSAGNATDAGYGLQAADGKIYATDYDGTNATAFTAKTATYTDASGNTQTSAITLGG  
TDGKTELVTLGSGANAKTYTASDLGADLHDPANTVKPIADNSKPLAALDAAIASVDKFR  
SSLGAVQNQLNSAITNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVWLKL  
T

>gi|30059874| H18 [gi|293405409| Hxx] [gi|345338356| Hxx]

[gi|300899178| Hxx] [gi|218705418| Hxx] [gi|218432515| Hxx]

[gi|300357192| Hxx] [gi|284921836| Hxx] [gi|291427617| Hxx]

[gi|298278495| Hxx] [gi|298381053| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQATTGTNSDSLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKIDSDTLNLGAFNVNGE  
TANTAATLTKDMVGLKLDNTGVTTAGVNRVIADKAVASSTDILNAVAGVDGSKVSTEADVG  
FGAAAPGTPVEYTYHKDNTNTYASASVDATQLAAFLNPEAGGTTAATVSIINGTTAQEQK  
VIIAKDGSLLTAADDGAALYLDLDTGNLSKTNAGTDTQAKLSDLMANNANAKTVITTTDKGTF  
TANTTKFDGVDISVDASTFANAVKNETYATVGVTLPATYTVNNGTAASAYLVDGKVSKT  
PAEYFAQADGTTITSGENAATSKAIYVSANGNLTTNTTSESEATTNPLAALDDAIASIDKF  
RSSLGAIQNRLDASVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAK  
ANQVPQQVLSLLQG

>gi|9211052| H18

MAQVINTNSLSLITQNNINKNQSALSSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQATTGTNSDSLDSIQDEIKSRL

DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKIDSDTLNLGAFNVNGEGE  
TANTAATLTKDMVGLKLDNTGVTTAGVNRVIADKAVASSTDILNAVAGVDGSKVSTEADVG  
FGAAAPGTPVEYTYHKDTNTYTASASVDATQLAAFLNPEAGGTAAATVSIINGTTAQEQK  
VIIAKDGLSLTAADDGAALYLDDTGNLSKTNAGTDTQAKLSDLMANNANAKTVITTDKGT  
TANTTKFDGVDISVDASTFANAVKNETYTATVGVTLPATYTVNNGTAASAYLVDGKVS  
KTPAEYFAQADGTITSGENAATSKAIYVSANGNLTTNTTSESEATTNPLAALDDAIASIDK  
FRSSLGAIQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAK  
ANQVPQQVLSLQOG

>gi|33590250| H19

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKIDSDTLNLGAFNVNGKGS  
VANTAATDNLTLAGFTTGTAAADGTVTYSKNVQFAAATASNVLAAAKDGDEITFAGNNG  
TGIAATGGTYTYHKDSNSYSFSATAASKDSSLSTLAPNAGDTFTAKVTIGSKSQEVNVSK  
DGTITSSDGKALYLDEKGNLTQTGSGTTKAATWDNLMANTDTTGKDAYGNSAAAAVGTVI  
EAKGMTITSAGGNAQVLKDAAYNAAAYATSITTTGTPGDAGAAATAGNAAVGALGATAVDNT  
TADVADISISASQMASILQDKDFTLSDGSDTYNVTNAVTINGKAANIDDSGAITDQTSK  
VVNYFAHTNGSVTNDTGSTIYATEDGSLTTDAATKAETTADPLKALDEAISSIDKFRSSL  
GAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQOG

>gi|30059876| H19 [gi|345393885| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKIDSDTLNLGAFNVNGKGS  
VANTAATDNLTLAGFTAGTKAADGTVTYSKNVQFAAATASNVLAAAKDGDEITFAGNNG  
TGIAATGGTYTYHKDSNSYSFSATAASKDSSLSTLAPNAGDTFTAKVTIGSKSQEVNVSK  
DGTITSSDGKALYLDEKGNLTQTGSGTTKAATWDNLMANTDTTGKDAYGNSAAAAVGTVI  
EAKGMTITSAGGNAQVLKDAAYNAAAYATSITTTGTPGDAGAAGAAATAGNAAVGALGATAV  
DNTTADVADISISASQMASILQDKDFTLSDGSDTYNVTNAVTINGKAANIDDSGAITDQ  
TSKVVNYFAHTNGSVTNDTGSTIYATEDGSLTTDAATKAETTADPLKALDEAISSIDKFR  
SSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKA  
NQVPQQVLSLLQOG

>gi|218361276| H19 (Hxx99.8%) [gi|323948196| Hxx] [gi|218554508| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKIDSDTLNLGAFNVNGKGS  
VANTAATDNLTLAGFTAGTKAADGTVTYSKNVQFAAATASNVLAAAKDGDEITFAGNNG  
TGIAATGGTYTYHKDSNSYSFSATAASKDSSLSTLAPNAGDTFTAKVTIGSKSQEVNVSK  
DGTITSSDGKALYLDEKGNLTQTGSGTTKAATWDNLMANTDTTGKDAYGNSAAAAVGTVI  
EAKGMTITSAGGNAQVLKDAAYNAAAYATSITTTGTPGDAGAAATAGNAAVGALGATAVDNT  
TADVADISISASQMASILQDKDFTLSDGSDTYNVTNAVTINGKAANIDDSGAITDQTSK  
VVNYFAHTNGSVTNDTGSTIYATEDGSLTTDAATKAETTADPLKALDEAISSIDKFRSSL  
GAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQOG

>gi|345374314| H19 (Hxx99.5%)

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKIDSDTLNLGAFNVNGKGS  
VANTAATDNLTLAGFTAGTKAADGTVTYSKNVQFAAATASNVLAAAKDGDEITFAGNNG  
TGIAATGGTYTYHKDSNSYSFSATAASKDSSLSTLAPNAGDTFTAKVTIGSKSQEVNVSK  
DGTITSSDGKALYLDEKGNLTQTGSGTTKAATWDNLMANTDTTGKDAYGNSAAAAVGTVI  
EAKGMTITSAGGNAQVLKDAAYNAAAYATSITTTGTPGDAGAAATAGNAAVGALGATAVDNT

TADVADISISASQMASILQDKDFTLSDGSDTYNVTSNAVTINGNAANIDDSGTITDQTSK  
VVNYFAHTNGSVTNDTGSTIYATEDGSLTTDAATKAETTADPLKALDEAISSIDKFRSSL  
GAVQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQV  
PQQVLSLLQG

>gi|30059878| H20

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVANDGQTTITIDLKIDSSTLKLTFGNVNGSGS  
VANTAATKADLAAAAIGTPGAADSTGAIAYTVSAGLTKTTAADVLSSLADGTTITATGVK  
NGFAAGATSNAKLNKDNNTFTYDTTATTAELQSYLTPKAGDTATFSVEIGGTTQDVVLS  
SDGKLTAKDGSKLYIDTTGNLTQNGGNGVGTAEATLSGLALNKNGLTAVKSTITTADN  
TSIVLNGSSDGTGNAGTEGTIAVTGAVISSAALQSASKTTGFTVGTVDTAGYISVGTGDS  
VQAYDAATSGNKASYTNTDGTLLTDDNTTKLYLQKDGSVTNGSGKAVYVEADGDFTTDAAT  
KAATTTDPLAALDDAISQIDKFRSSLGAIQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYA  
TEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|169754667| H20 (Hxx97.9%) [gi|170019739| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVANDGQTTITIDLKIDSSTLKLTFGNVNGSGS  
VANTAATKADLAAAAIGTPGAADSTGAIAYTVSAGLTKTTAADVLSSLADGTTITATGVK  
NGFAAGATSNAKLNKDNNTFTYDTTATTAELQSYLTPKAGDTATFSVEIGGTTQDVVLS  
SDGKLTAKDGSKLYIDTTGNLTQNGGNGVGTAEATLSGLALNNGAAAVKSTITTAD  
NTSIVLNGSSDGTGTEGTIAVTGAVISSAALQSASKTTGFTVGTADTAGYISVGTGDSVQAY  
DVATSGNKDSYNTDGTLLTDDNTTKLYLQKDGSVTNGSGKAVYVEADGDFTTDAATKAAT  
TTDPLAALDDAISQIDKFRSSLGAIQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVS  
NMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|30059880| H21

NKSQSSLSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTT  
EGALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAEITQRLEEIDRVSEQTQFNGVKVL  
AENNEMKIQVANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNY  
QINGTDNYTVNVDSGVVQDKDGKQVYVSTADGSLTSSDTQFKIDATKLAVAAKDLAQQN  
KIVYEGIEFTNTGTVAIDAKGNGKLTANVDGKAVEFTISGSTDTSGTSATVAPPTALYKN  
SAGQLTATKVENKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTITETASGNKVMY  
LSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFDASAITNLGN  
TVNNLSSARSRIEDADYATEVSNMSRAQIIQQAGTSVLAQ

>gi|112820171| H21 [gi|291323135| Hxx] [gi|293446305| Hxx]

[gi|345350189| Hxx] [gi|345337222| Hxx]

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EEIDRVSEQTQFNGVKVLAENNEMKIQVANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYQINGTDNYTVNVDSGVVQDKDGKQVYVSTADGSLTSSDTQF  
KIDATKLAVAAKDLAQQNKIVYEGIEFTNTGTVAIDAKGNGKLTANVDGKAVEFTISGST  
DTSGTSATVAPPTALYKNSAGQLTATKVENKAATLSDDLNAAKKTGSTLVVNGATYDVS  
ADGKTITETASGNKVMYLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLR  
DLGAVQNRFDASAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQIIQQAGTSVLAQAN  
QTTQNVLSLLR

>gi|91984619| H21

INTNSLSLLTQNNLNKSQSSLSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQA  
SRNANDGISVAQTTEGALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAEITQRLEEID  
RVSEQTQFNGVKVLAENNEMKIQVANDGETITINLAKIDAKTLGLDGFNIDGAQKATGS  
DLISKFKATGTDNYQINGTDNYTVNVDSGVVQDKDGKQVYVSTADGSLTSSDTQFKIDA  
TKLAVAAKDLAQQNKIVYEGIEFTNTGTVAIDAKGNGKLTANVDGKAVEFTISGSTDTSG

TSATVAPTTALYKNSAGQLTATKVENKAATLSDDLNAAKKTGSTLVVNGATYDVSADGK  
TITETASGNNKVMYLSKSEGGSPILVNEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGA  
VQNRFD SAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQANQTTQ  
NVLS

>gi|112820172| H21

MASFTSLGVGSNPLD TLLNLTIAEKKRLNPIITQQQSDNTARLTAYGTLKSALEKFQTA  
NTALNKADLFKSTTVTSSNEDLKVSTEAGAAPGIYTI SVTQLAQAQSLRTDSPTIIASTK  
DALGDESSDTRTIKITQDGRKEPLEIKLNKDQTSLEISK TINDADSGISASIVKVKDGD  
YQLVLTASEGLANKMTISVEGDSKLNLDLLAYDSKTNTGNMKELVNAQNAQLNVNGIDIER  
SSNKITDAPQGVTLDLTQKVTDVVRVTVTKSNDKATEAIKGVVDSYNSLIDTFNTLT KYKE  
VDPGAEAQDKNNGALLGDSVVRTIQSGIRAQFANGASDGAFKTLNELGIKQDGTGK LKI  
DDD KLVNENTASVRELLVGDGKETGITTKIATEVKGYLADDGIIDSAQDSINATLKK  
LTKQYLSVSASIDDTVARYTAQFTQLDTMMSKLNNTSTYLSQQFTAMSNS

>gi|25992227| H21

SQSSLSAIERLSSGLRINS AKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTEG  
ALNEINNNLQRIRELSVQATNGTNSDS DLSSIQAEITQRLEEIDRVSEQTQFNGVKVLAE  
NNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNYQI  
NGTDNYTVNVDSGVVQDKDGKQVYVSTADGSLTSSDTQFKIDATKLAVA AKDLAQGNKI  
VYEGIEFTNTGTVAIDAKGNGLTANVDGKAVEFTIPGSTDTSDTSATVAPTTALYKNSA  
GQLTATKVENKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTITETASGNNKVMYLS  
KSEGGSPILVNEDA AKSLQFTTNPLETIDKALAKVDNLRSDLGAVQNRFDFAITNLGNTV  
NNLFSARSRIEDADYATEVSNMFRAQILQQAG

>gi|342722667| H21 (Hxx99.6%)

SLSSAIERLSSGLRINS AKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTEGALN  
EINNNLQRIRELSVQATNGTNSDS DLSSIQAEITQRLEEIDRVSEQTQFNGVKVLAENNE  
MKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNYQINGT  
DNYTVNVDSGVVQDKDGKQVYVSTADGSLTSSDTQFKIDATKLAVA AKDLAQGNKI VYE  
GIEFTNTGTVAIDAKGNGLTANVDGKAVEFTISGSTDTSGTSATVAPTTALYKNSAGQL  
TATKVENKAATLSDDLNAAKKTGSTLVVNGATYDVSADGKTITETASGNNKVMYLSKSE  
GGSPILVNEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD SAITNLGNTVNNL  
SSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQANQTTQNVLSLLQ

>gi|6009841| H23 [gi|30059882| H23]

MAQVINTNSLSLITQNNINKNQ SALSSSIERLSSGLRINS AKDDAAGQAIANRFTSNIKGL  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELT VQATTGTNSDS DLASIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLNGFN VNGSGT  
ITNKAATVSDVTRAGGTLVNGAYDIKTTNTALTTTDAFAKLN DGDVVTINNGKDTAYKYN  
AATGGFTT DVSISGDPTAADATANKTARDALAA SLHAEPGKT VNGSWTTNDGT VKFD TDA  
DGKISIGGVAAYVDAAGNLTTNAAGMTTQATTTDLV TAAASATGKGGSLTFGDTTYKIGQ  
GTAGVDPDDASDDVLGTISYSKSVSKDVVLADTKATGNTTTVDFNSGIMTSKVSFDAGTS  
TDTFKDADGAI TKKEYTTSYAVNKDTGEVTVADYAAVDSADKAVDDTKYKPTIGATVNL  
NSAGKLTTDTTSAGTATKDPLAALDAAISSIDKFRSSLGAIQNR LDSAVTNLNNTTTTNLS  
EAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQ

>gi|30059884| H24

NKNQSALSTSIERLSSGLRINS AKDDAAGQAIANRFTSNIKGLTQAARNANDGISLAQTT  
EGALSEINNNLQRVRELT VQATTGTNSDS DLSSIQDEIKSRLSEIDRVSGQTQFNGVNV L  
AKNDTLSIQVGANDGQTINIDLQQIDSHTLGLDGF SVKNNDAVKTSAAVNTLGGGAGSVA  
VDFATTSLTAITGLGSGAISEIAKDDNGDYAHVTGTTGNTADGYAYVIDKATGEVALK  
DGNVDTPTGTPTTTSTYDFTDAGQTVSFGTDAATAGISTGASLVKLQDEKGN DTATYAIK  
AQDGS LYAANVDEATGKVTVKTASYTDADGKAVTDAAVKLG DNGTTEIVVDAASGKTYD  
AGALQNVDLSSATNTVTAIPNGKTTSP LAALDDAISQIDKFRSSLGAVQNR LDSAVTNLN  
NTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLSK

>gi|30059886| H25

ALSTSIERLSSGLRINSAKDDAAGQAIANRFTSNIKGLTQAARNANDGISLAQTTEGALS  
EINNNLQRVRELTQATTGTNSDSLSSIQDEIKSRLDEIDRVSGQTQFNGVNVLSKDG  
MKIQVGANDGQTI SIDLKKIDSSTLGLNGFSVSKNSLNVSNAITSI PQAASNEPVDVNF  
DTDESAIAAKLGVSDTSSLSLHNI LDKDGKATADYVVQSGKDFYAASVNAASGKVT  
LNT IDVTYDDYANGVDDAKQTGQLIKVSADKDGAAQGFVTLQGKNYSAGDAADILKNG  
ATALK LIDLNLSDVTD TNGKVT TTTATEQFEGASTEDPLALLDKAIASVDFRSSLGAVQ  
NRLDSA ITNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQA

>gi|37651054| H25 [gi|37651056| Hxx]

QVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSAKDDAAGQAIANRFTSNIKGLT  
QAARNANDGISLAQTTEGALSEINNNLQRVRELTQATTGTNSDSLSSIQDEIKSRLDE  
IDRVSGQTQFNGVNVLSKDGSMKIQVGANDGQTI SIDLKKIDSSTLGLNGFSVSKNSLNV  
SNAITSI PQDAGDKPVDVNF GTTTE SAAIAAKLGVSDTSSLSLHNI LDKDGKATADYVVQ  
SGKDFYAASVDAASGKVT LNT IDVTYDDYANGVDDAKQTDQLIKVSADKDGAAQGFVTLQ  
GKNYSAGDAAVILKNGATGLALTDLNLSDVTD TNGKVT TTTATEQFEGASTEDPLALLDKA  
IASVDFRSSLGAVQNR LDSA ITNLNNTTTNLSEAQSRIQDADYATEV

>gi|323968340| H25 (Hxx99.0%) [gi|327253054| Hxx]

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSAKDDAAGQAIANRFTSNIK  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTQATTGTNSDSLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGQTI SIDLKKIDSSTLGLNGFSVSKNSL  
NVSNAITSI PQDAGDKPVDVNF GTTTE SAAIAAKLGVSDTSSLSLHNI LDKDGKATADYV  
VQSGKDFYAASVDAASGKVT LNT INVTYDDYANGVDDAKQTGQLIKVSADKDGAAQGFV  
TLQGKNYSAGDAAVILKNGAT SLELTDLNLSDVTD TNGKVT TTTATEQFEGASTEDPLALLD  
KAIASVDFRSSLGAVQNR LDSA ITNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQ  
QAGNSVLSKANQVPQQVLSLLQG

>gi|323174561| H25 (Hxx99.7%)

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSAKDDAAGQAIANRFTSNIK  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTQATTGTNSDSLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGQTI SIDLKKIDSSTLGLNGFSVSKNSL  
NVSNAITSI PQAASNEPVDVNF GDTDE SAAIAAKLGVSDTSSLSLHNI LDKDGKATADYV  
VQSGKDFYAASVNAALGKVT LNT IDVTYDDYANGVDDAKQTGQLIKVSADKDGAAQGFV  
TLQGKNYSAGDAADILKNGATALKLTDLNLSDVTD TNGKVT TTTATEQFEGASTEDPLALLD  
KAIASVDFRSSLGAVQNR LDSA ITNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQ  
QAGNSVLSKANQVPQQVLSLLQG

>gi|30059888| H26

MAQVINTNSLSLITQNNINKNQSALSSIERLSSGLRINSAKDDAAGQAIANRFTSNIK  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTQATTGTNSDSLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKKIDSDTLNLGAFNVNGAGS  
VDNAKATGKDLTDAGFTASAADANGKIT YTKDVTVKFDKATAADVLGKAAAGDSITYAGT  
DTGLGVAADASTYTYNAANKSYTF DATGVAKADAGTALKGYLGASNTGKINIGGTEQEVN  
IAKDGSITDTNGDALYLDSTGNLTKN TANLGAADKATVDKLFAGA QDATITFD SGMTAKF  
DQTAGTVDFK GASISADAMASTLNNGSYTANVGGKAYAVTAGAVQTGGADVYKDTTGALT  
TEDDETVTATYYGFADGKVS DGE GSTVYKAADGSITKDATTKSEATTDPLKALDDAISQI  
DKFRSSLGAVQNR LDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQ QAGNSV  
LAKANQVPQQVLSLLQG

>gi|33590257| H26

MAQVINTNSLSLITQNNINKNQSALSSIERLSSGLRINSAKDDAAGQAIANRFTSNIK  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTQATTGTNSDSLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKKIDSDTLNLGAFNVNGAGS  
VDNAKATGKDLTDAGFTASAADANGKIT YTKDVTVKFDKATAADVLGKAAAGDSITYAGT  
DTGLGVAADASTYTYNAANKSYTF DATGVAKADAGTALKGYLGASNTGKINIGGTEQEVN  
IAKDGSITDTNGDALYLDSTGNLTKN TANLGAADKATVDKLFAGA QDATITFD SGMTAKF  
DQTAGTVDFK GASISADAMASTLNNGSYTANVGGKAYAVTAGAVQTGGADVYKDTTGALT

TEDETVTATYYGFTDGKVS DGE GSTVYIAADGSITKDATTKSEATTDPLKALDDAISQI  
DKFRSSLGAVQNR LDSAVTNLNNTTTLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSV  
LAKANQVPQQVLSLLQG

>gi|99645039| H27

MAQVINTNSLSLITQNNINKNQ SALSSSIERLSSGLRINS AKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALNEINNNLQRVRELT VQATNGTNSDS DLSSIQAEITQRL  
EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYQINGTDNYTVNVDSGAVQNE DGD AIFVSATDGS LTTKSDTKV  
GGTGIDATGLAKAAVSLAKDASIKYQGIFFTNKGTGAFDGS SNGTLIANIDGKDVFTTID  
ATGKDATLKTSDPVYKNSAGQFTTTKVENKAATASDL DLNNAKKGSSLVVNGADYEVSA  
DGKTVTGLGKTM YLSKSEGGSPILVKEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAV  
QNRFD SAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQI LQQAGTSVLAQANQTTQN  
VLSLLR

>gi|30059890| H27

NKSQSSLSSAIERLSSGLRINS AKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTT  
EGALNEINNNLQRVRELT VQATNGTNSDS DLSSIQAEITQRL EEIDRVSEQTQFNGVKVL  
AENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNY  
QINGTDNYTVNVDSGAVQNE DGD AIFVSATDGS LTTKSDTKVGGTGIDATGLAKAAVSLA  
KDASIKYQGIFFTNKGTDAFDGSGNGTLTANIDGKDVFTTIDATGKDATLKTSDPVYKNS  
AGQFTTTKVENKAATASDL DLNNAKKGSSLVVNGADYEVSA DGKTVTGLGKTM YLSKSE  
GGSPILVKEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD SAITNLGNTVNNL  
SSARSRIEDADYATEVSNMSRAQI LQQAGTSVLAQ

>gi|25992229| H27

SQSSLSSAIERLSSGLRINS AKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTTEG  
ALNEINNNLQRVRELT VQATNGTNSDS DLSSIQAEITQRL EEIDRVSEQTQFNGVKVLAE  
NNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNYQI  
NGTDNYTVNVDSGAVQNE DGD AIFVSATDGS LTTKSDTKVGGTGIDATGLAKAAVSLAKD  
ASIKYQGIFFTNKGTDAFDGSGNGTLTANIDGKDVFTTIDATEKDATLKTSDPVYKNSAG  
QFTTTKVENKAATASDL DLNNAKKGSSLVVNGADYEVSA DGKTVTGLGKTM YLSKSEGG  
SPILVKEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAVQNRFD FGITNLGNTVNNLFS  
ARSRIEDADYATEVSNMFRAQIVQQAGT

>gi|16901494| H27

MAQVINTNSLSLLTQNNLNK SQSSLSSAIERLSSGLRINS AKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALNEINNNLQRVRELT VQATNGTNSDS DLSSIQAEITQRL  
EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYQINGTDNYTVNVDSGAVQNE DGD AIFVSATDGS LTTKSDTKV  
GGTGIDATGLAKAAVSLAKDASIKYQGIFFTNKGTDAFDGSGNGTLTANIDGKDVFTTID  
ATGKDATLKTSDPVYKNSAGQFTTTKVENKAATASDL DLNNAKKGSSLVVNGADYEVSA  
DGKTVTGLGKTM YLSKSEGGSPILVKEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAV  
QNRFD SAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQI LQQAGTSVLAQANQTTQN  
VLSLLQG

>gi|218427480| H27 (Hxx99.6%) [gi|218689916| Hxx]

MAQVINTNSLSLLTQNNLNK SQSSLSSAIERLSSGLRINS AKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALNEINNNLQRVRELT VQATNGTNSDS DLSSIQAEITQRL  
EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYQINGTDNYTVNVDSGAVQNE DGD AIFVSATDGS LTTKSDTKV  
GGTGIDATGLAKAAVSLAKDASIKYQGIFFTNKGTDAFDGSGNGTLTANIDGKDVFTTID  
ATGKDATLKTSDPVYKNSAGQFTTTKVENKAATASDL DLNNAKKGSSLVVNGADYEVSA  
DGKTVTGLGKTM YLSKSEGGSPILVKEDA AKSLQSTTNPLETIDKALAKVDNLRSDLGAV  
QNRFD SAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQI LQQAGTSVLAQANQTTQN  
VLSLLR

>gi|37651050| H28 [gi|37651052| Hxx]

QVINTNSLSLITQNNINKNQSALS SSSIERLSSGLRINS AKDDAAGQAIANRFTSNIKGLT  
QAARNANDGISVAQTTEGALSEINNNLQRIRELT VQASTGTNSDS DLDSIQDEIKSRLDE  
IDRVSGQTQFNGVNV LAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLSGFNVNGGGA  
NTAATKDELAAAAAAGTTPAVGTDGVTKYTV D AGLNKATAANVFANLADGAVVNASIS  
NGFGAAATDYTYNKATNDFTFNASIAAAAVGDSNSAALQSFLTPKAGDTANLSVKIGTTS  
VDVVLASDGKITAKDGSELFIDVDGNLTQNNAGTVKAATLDALTKNWHTTGTTPDAVSTVI  
TTEDETTFTLAGGTDATTSGTITVANARMSAESLQSATKSTGFTVDVGTTGTSAGDIKVD  
SKGIVQQHTGTGFEDAYTKADGSLTTDNTTNLFLQKDGTVTNGSGKAVYVSADGNFTTDA  
ETKAATTADPLKALDEAISSIDKFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDAD  
YATEV

>gi|190901652| H28 [gi|191168280| H28] [gi|209919345| Hxx]  
[gi|209912604| Hxx]

MAQVINTNSLSLITQNNINKNQSALS SSSIERLSSGLRINS AKDDAAGQAIANRFTSNIK  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELT VQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLSGFNVNGGGA  
VANTAATKSDLAAAQ L LAPGTADANGTVTYTVSAGLKTSTAADVIASLANNAKVNATIAN  
GFGSPTATDYTYNSATGDFTYSATIAAGTNSGDSNSAQLQSFLTPKAGDTANLNVKIGST  
SIDVVLASDGKITAKDGSELFIDVDGNLTQNNAGTVKAATLDALTKNWHTTGTTPGAVSTV  
ITTEDETTFTLAGGTDATTSGAITVANARMSAESLQSATKSTGFTVDVGATGNSAGDIKV  
DSKGIVQQYTGTVFEDAYTKADGSLTTDNTTNLFLQKDGTVTNGSGKAVYVSADGNFTTDA  
AETKAATTADPLKALDEAISSIDKFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDA  
DYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|30059892| H28

MAQVINTNSLSLITQNNINKNQSALS SSSIERLSSGLRINS AKDDAAGQAIANRFTSNIK  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELT VQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLSGFNVNGSGA  
VANTAATKSDLAAAQ L LAPGTADANGTVTYTVGAGLKTSTAADVIASLANNAKVNATIAN  
GFGSPTATDYTYNSATGDFTYSATIAAGTNSGDSNSAQLQSFLTPKAGDTANLNVKIGST  
SIDVVLASDGKITAKDGSELFIDVDGNLTQNNAGTVKAATLDALTKNWHTTGTTPSAVSTV  
ITTEDETTFTLAGGTDATTSGAITVANARMSAESLQSATKSTGFTVDVGATGTSAGDIKV  
DSKGIVQQHTGTGFEDAYTKADGSLTTDNTTNLFLQKDGTVTNGSGKAVYVSADGNFTTDA  
AETKAATTADPLKALDEAISSIDKFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDA  
DYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|157081065| H28 (Hxx99.7%) [gi|157159035| Hxx]

MAQVINTNSLSLITQNNINKNQSALS SSSIERLSSGLRINS AKDDAAGQAIANRFTSNIK  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELT VQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLSGFNVNGGGA  
VANTAATKSDLAAAQ L LAPGTADANGTVTYTVSAGLKTSTAADVIASLANNAKVNATIAN  
GFGSPTATDYTYNSATGDFTYSATIAAGTNSGDSNSAQLQSFLTPKAGDTANLNVKIGST  
SIDVVLASDGKITAKDGSELFIDVDGNLTQNNAGTVKAATLDALTKNWHTTGTTPGAVSTV  
ITTEDETTFTLAGGTDATTSGAITVANARMSAESLQSATKSTGFTVDVGATGNSAGDIKV  
DSKGIVQQYTGTVFEDAYTKADGSLTTDNTTNLFLQKDGTVTNGSGKAVYVSADGNFTTDA  
AETKAATTADLLKALDEAISSIDKFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDA  
DYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|324017935| H28 (Hxx99.8%)

MAQVINTNSLSLITQNNINKNQSALS SSSIERLSSGLRINS AKDDAAGQAIANRFTSNIK  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELT VQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLSGFNVNGGGA  
VANTAATKSDLAAAQ L LAPGTADANGTVTYTVSAGLKTSTAADVIASLANNAKVNATIAN  
GFGSPTATDYTYNSATGDFTYSATIAAGTNSGDSNSAQLQSFLTPKAGDTANLNVKIGST  
SIDVVLASDGKITAKDGSELFIDVDGNLTQNNAGTVKAATLDALTKNWHTTGTTPGAVSTV  
ITTEDETTFTLAGGTDATTSGAITVANARMSAESLQSATKSTGFTVDVGATGNSAGDIKV

DSKGIVQQYTGTVFEDAYTKADGSLTTDNTTNLFLQKDGTVTNGSGKAVYVSADGNFTTD  
AETKAATTADPLKALDEAISSIDKFRSSLGAVQNRLLDSAVTNLNNTTTNLSEAQSRIQDA  
DYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|33590260| H29

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDNTMKIQVGANDGQTTISIDLQKIDSSTLGLNGFSVSKNAL  
ETSEAITQLPNGENAPIAVKMDASVLTDLNITDASAVSLHNVTKGGVATSTYVVQYGDKS  
YAASVDAGGTVKLNKADVTYNDAANGVKNATQIGSLVQVGADANNDVGFVTVQGKNYVA  
NDSLNVNANGAAGAEATRVTIDGDGTNQAQIELSQNGDTAATSEFAGASTNDPLTLLDKAI  
ASVDKFRSSLGAVQNRLLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAG  
NSVLSKANQVPQQVLSLLQG

>gi|30059896| H29

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDNTMKIQVGANDGQTTISIDLQKIDSSTLGLNGFSVSKNAL  
ETSEAITQLPNGANAPIAVKMDASVLTDLNITDASAVSLHNVTKGGVATSTYVVQYGDKS  
YAASVDAGGTVKLNKADVTYNDAANGVTNATQIGSLVQVGADANNDVGFVTVQGKNYVA  
NDSLNVNANGAAGAAAATRVTIDGDGSLGANQAQIELSQNGATAATSEFAGASTNDPLTLLD  
KAIASVDKFRSSLGAVQNRLLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQ  
QAGNSVLSKANQVPQQVLSLLQG

>gi|30059894| H30 [gi|188494683| Hxx] [gi|188489882| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQATTGTNSTSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKIDSSTLKLTSFNVNGKGA  
VDNAKATEADLTAAGFSQGAVVSGNSTWTKSTVTFNAATATDVLASVSGGSTISGYTGT  
NNGLGVAASTAYTYNATSKSYSFDATALTNGDGTGATTKVADVLKAYAANGDNTAQISIG  
GSAQDVKIASDGTLDVNGDALYIGSDGNLTKNQAGGPDAATLDGIFNGANGNAAVDAKI  
TFGSGMTVDFTQASKKVDIKGATVSAEDMDTALTGQAYTVANGAQSFDVAAGGAVTATTG  
GATVNIADGELTTATNKVTETTYHEFANGNILDGGAALYKAADGSLTTEATGKSEVTT  
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>gi|30059898| H31 [gi|300818653| Hxx] [gi|300528825| Hxx]  
[gi|342929939| Hxx]

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DEIDRVSGQTQFNGVNVLAKDGMKIQVGANDGQTTITIDLKIDSSTLGLSGFNVNGGGA  
VANTAATKDDLVAASVSAAVGNEYTVSAGLSKSTAADVIASLTDGATVTAAGVSNNGFAAG  
ATGDAYKFNQANNTFTYNTTSTAELQSYLTPKAGDTATFSVEIGGTKQDVVLASDGKIT  
AKDGSKLYIDTTGNLTQNGGGTLEEATLNGLAFNHSGPAAAVQSTITTADGTSIVLAGSG  
DFGTTKTAGAINVTGAVISADALLSASKATGFTSGTYTVGTDGVVKSNGNDVYNKADGTG  
LTTDNTTKYYLQDDGSVTNGSGKAVYADATGKLTDAETKAETTADPLKALDEAISSIDK  
FRSSLGAVQNRLLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLA  
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>gi|110343621| H31 [gi|191173337| H31] [gi|190906454| H31]  
[gi|110642029| H31] [gi|324013477| Hxx] [gi|324007297| Hxx]  
[gi|300982293| Hxx] [gi|300307253| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGMKIQVGANDGQTTITIDLKIDSSTLGLSGFNVNGKGA  
VANTAATKDDLVAASVSAAVGNEYTVSAGLSKSTAADVIASLTDGATVTAAGVSNNGFAAG  
ATGNAYKFNQANNTFTYNTTSTAELQSYLTPKAGDTATFSVEIGSTKQDVVLASDGKIT



AKDGSKLYIDTTGNLTQNGGGTLEEATLNGLAFNHSGPAAAVQSTITTADGTSIVLAGSG  
DFGTTKTAGAINVTGAVISADALLSASKATGFTSGAYTVGTDGVVKS GGNDVYNKADGTG  
LTTDNTTKYYLQDDGSVTNGSGKAVYVDATGKLTDDAETKAATTADPLKALDEAISSIDK  
FRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLA  
KANQVPQQVLSLLQG

>gi|12697206| H32 [gi|30059900| H32]

MAQVINTNSLSLITQNNINKNQSALS SSIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLSKDGSMKIQVGANDGETITIDLKKIDSSTLKLTSFNVNGKGA  
VDNAKATEADLTAAGFSQSAVVSGNSTWTKSTVTTFNAATATDVLASVSGGSTISGYAGT  
NNGLGVAASTAYTYNATSKSYSFDATA LTNGDGTAGSTKVADVLKAYAANGDN TAQISIG  
GSAQEVKIASDGTLD TNGDALYIGADGNLTKNQAGGPAAATLDGIFNGANGHDAVDAKI  
TFGSGMTVDFTVQVSNNDIKGATVSAEDMNTAL TGQAYTVANGAQS YDVAADGAVTATTG  
GATVNI GAEGELTTAANKTVTETYHEFANGN ILDDGAALYKAA DGS LTTEATGKSEATT  
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>gi|30059902| H33

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DEIDRVSGQTQFNGVNV LAKNGSMAIQVGANDGQTINIDLQKIDSSTLGLGGFVSNNAL  
KLSDSITQVGASGSLADV KLVSSVASALGVDASTLTLHNVQTPAGAATANYVVSSGSDNYS  
VSVEDSSGTVTLNNTDIGYTD TANGVTTGSMTGKYVKVGADALGAAVGYVTVQGNFKAD  
AGALVNSKNAAGSQNV TSAIGDIANKANANIYTG TSSADPLALLDKAIASVDKFRSSLGA  
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QVLSLLQG

>gi|16901496| H33

MAQVINTNSLSLITQNNINKNQSALS TSIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNV LAKNGSMAIQVGANDGQTINIDLQKIDSSTLGLGGFVSNNAL  
KLSDSITQVGASGSLADV KLVSSVASALGVDASTLTLHNVQTPAGAATANYVVSSGSDNYS  
VSVEDSSGTVTLNNTDIGYTD TANGVTTGSMTGKYVKVGADALGAAVGYVTVQGNFKAD  
AGALVNSKNAAGSQNV TSAIGDIANKANANIYTG TSSADPLALLDKAIASVHKFRSSLGA  
VQNRLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLSKANQVPQ  
QVLSLLQG

>gi|30059904| H34

MAQVINTNSLSLITQNNINKNQSALS SSIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNV LAKDGSMKIQVGANDGQTITIDLKKIDSSTLGLSGFNVNGSAD  
KASVAATADGMVKDGYIKGLTSSDGSTAYTKTTANTAAKGS DILAALKTGDKITATGANS  
LADNATSTTYTYNATSN TFSYADGVNQTNAAANLI PAAGKTTAASVTIGGTAQNVNIDD  
SGNITSSDGDQLYLDSTGNLTKNQAGNPKKATVSGLLGNTDAKGTAVKTTIKTEAGVTVT  
AEGNTGTVKIEGATVSASAFTGIAYSANTGGNTYAVAANNTTNGFLAGDDL TQDAQTVST  
YYSQADGTVTNSAGKEIYKDADGVYSTENKTSKTS DPLAALDDAISSIDKFRSSLGAIQN  
RLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLA KANQVPQQVLS  
LLQG

>gi|16901498| H34

MAQVINTNSLSLITQNNINKNQSALS SSIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSE INNNLQRIRELT VQASTGTNSDS DLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNV LAKDGSMKIQVGANDGQTITIDLKKIDSSTLGLSGFNVNGSAD  
KASVAAKADGMVKDGYIKGLTSSDGSTAYTKTTANTAAKGS DILAALKTGDKITATGANS  
LADNATSTTYTYNNTSNTFSYADGVNQTNAAANLI PAAGKTTAASVTIGGTAQNVNIDD  
SGNITSSDGDQLYLDSTGNLTKNQAGNPKKATVSGLLGNTDAKGTAVKTTIKTEAGVTVT

AEGNTGTVKIEGATVSASAFTGIAYSANTGGNTYAVAANNTTNGFLAGDDLQDAQTVST  
YYSQADGTVTNSAGKEIYKDADGVYSTENKTSKTSPLAALDDAISSIDKFRSSLGAIQN  
RLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVL  
SLLQG

>gi|170520207| H34 (Hxx99.6%) [gi|170682489| Hxx]  
MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVANDGQTTITIDLKIDSDDLGLSGFNVNGSAD  
KASVAATADGMVKDGYIKGLTSSDGSTAYTKTTANTAAGSDILAALKTGDKITATGANS  
LADNATSTTYTYNATSNTFSYTADGVNQTNAANLI PAAGKTTAASVTIGGTAQNVNIDD  
SGNITSSDGDQLYLDSTGNLTKNQAGNPKNKATVSGLLGNTDAKGTAVKTTIKTEAGVTVT  
AEGNTGTVKIEGATVSASAFTGIAYSANTGGNTYAVAANNTTNGFLAGDALQDAQTVST  
YYSQADGTVTNSAGKEIYKDADGVYSTENKTSKTSPLAALDDAISSIDKFRSSLGAIQN  
RLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVL  
SLLQG

>gi|320194364| H34 (Hxx99.8%) [gi|331673441| Hxx] [gi|331069639| Hxx]  
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LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGSMMKIQVANDGQTTITIDLKIDSDDLGLSGFNVNGSAD  
KASVAATADGMVKDGYIKGLTSSDGSTAYTKTTANTAAGSDILAALKTGDKITATGANS  
LADNATSTTYTYNATSNTFSYTADGVNQTNAANLI PAAGKTTAASVTIGGTAQNVNIDD  
SGNITSSDGDQLYLDSTGNLTKNQAGNPKNKATVSGLLGNTDAKGTAVKTTIKTEAGVTVT  
AEGNTGTVKIEGATVSASAFTGIAYSANTGGNTYAVAANNTTNGFLAGDDLQDAQTVST  
YYSQADGTVTNSAGKEIYKDADGVYSTENKTSKTSPLAALDDAISSIDKFRSSLGAIQN  
RLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVL  
SLLQG

>gi|154710444| H35  
MAQVINTNSLSLITQNNLNKSSQSSLSAIEERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQASRNANDGISVAQTTEGSLSEINNNLQRIRELSVQATNGSNSDSLSSIQDEITQRL  
QEIDRVSNQTQFNGVKVLASQQTMMKIQVANDGETITIDLKEINSKTLGLDKLDVRNTFS  
TSDLAAATTELAPAKTDVKNLTFDGTAPTFKLYVDNTDPDKLFVSSNGTNYAASYD  
KDTNSIKFNSTGTGTGTAGTDFIDATGKDVHVGGRVMAANDIKGRTDDNVAAPQLFL  
DQSGKYHISKDNGATYANATVNATTGEVTVYDSGTAAALGAGIEVGSALKEIAKPDAGVAV  
DLTGVSQVGAQLFAKKGDSGYVIKGTADNKEVLFKVAADGKVTGKQDLTADPLKSID  
DALSQVDQFRSSLGAVQNRFDASITNLGNTVNNLSSARSRIEDSDYATEVSNMSRAQILQ  
QAGTSVLAQANQTTQNVLSLLR

>gi|23477614| H35  
MAQVINTNSLSLITQNNLNKSSQSSLSAIEERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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SVIDRVSGQTQFNGVKVLASDQDMTVQVANDGETITIKLQEIINSDDLGLSGFGIKDPTK  
LKAATAETTYFGSTVKLADANTLDADITATVKGTTTPGQRDGNIMSDANGKLYVKVAGSD  
KPAENGYEVTVEDDPTSPDAGKLLGALAGTQPQAGNLKEVTTVKGKGAIDVQLGTDTA  
TASITGAKLFLKLEDANGKDTGSFALIGDDGKYAANVDQKTGAVSVKTMSTYTDADGVKHD  
NVKVELGSGDKTEVVTATDGKTYSVSDLQGKSLKTDIAAISTQKTEDPLAAIDKALSQ  
VDSLRSNLGAIQNRFDASITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTS  
VLAQANQTTQNVLSLLQ

>gi|154710450| H36  
MNDISYGREAEKWPREYSMLARRIQFLRFNDYPVKLVSSNGQSIVGYISKFNQKENVILA  
SDEAKGCNRVEVKLEFLASLEELPVGENLTAKLIAADVFNVPCEPTRKDFFSICNKCFK  
QGVGIVHMLDGRILIGETTGNACQVGMIRPNGNHMQIMFDWVSRTSSDYS

>gi|154710451| H36  
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LTQASRNANDGISIAQTTEGALSEINNNLQRVRELSVQATNGTNSPSDLDSIQNEITQRL  
EEINRVSGQTQFNGVKVLASDNSMTIQVGANDGEAITIDLKEITAETLGLTGFNVNGKGS  
VNNTVATAKDLTDKGFISTDNGKTYTGSAGLANAKAGDVFGKMVDGTGTVTTTIDNGFGTA  
QSNTYKYDKASNSFSFDIDDAAGTTAPQVATYLNPTANDKTKASVEINGSSQAVIIDHNG  
KMTAADDNAELFIDNSGNLTKNNKTGGKAATLENLALNKTGTNTAVKSSITTESGTKIAI  
AGSTDGTTAGKISATNVKISAEDLKAKADTAGFTTSTGFTVAAGGDQKATLNGSEAYVKG  
DGFTIDNTAKYVQEDGAITNGSGKVAYKDADGKITTDAKTETAKTTPMAKLDKALAKV  
DALRSDLGAIQNRFDSTITNLGNTVNNLTSARSRIEDADYATEVSNMSRAQILQQAGTSV  
LAQANQTTQNVLSLLR

>gi|283982459| H36 (Hxx96.0%)

MNDISYGREAEKWPREYSMLARRIQFLRFNDYPVKLVSSSGQSIIGYISKFNQKENVILA  
SDEAKGCNRIEVKLEFLASLEELPIGENLTARLIAADVFNVQPCDPTRKDFFSICNKCFK  
QGVGIKVHMLDGRILIGETTGVNACQVGMIRPNGNHMRIMFDWVSRITSSDYSG

>gi|283982457| H36 (Hxx95.4%)

MNDISYGREAEKWPQYSMLARRIQFLRFNDYPVKLVSSSGQSIIGYISKFNQKENVILA  
SDEAKGCNRIEVKLEFLASLEELPIGENLTARLIAADVFNVQPCDPTRKDFFSICNKCFK  
QGVGIKVHMLDGRILIGETTGVNACQVGMIRPNGNHMQIMFDWVSRITSSDYSG

>gi|30059906| H37 [gi|301076183| Hxx] [gi|301645557| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTTITIDLKIDSSTLKLKTGFNVNGKAA  
VDNAKATDANLTTAGFTQGVVDSNGNSTWTKSTTTNFDAATAVNVLAAVKDGSTINYTGT  
GNLGLIAATSAYTYHDSTKSYTFDSTGAAVAGAASSLQGTFGTDTNTAKITIDGSAQEVN  
IAKDGIKIDTDGKALYIDSTGNLTKNGSDTLTQATLNDVLTGANSVDDTRIDFDSGMSVT  
LDKVNSTVDITGASISAAAMTNELTGKAYTVVNGAESYAVATNNTVKTADAKNVYVDAS  
GKLTDDKATVTETYHEFANGNIYDDKGAAVYAAAADGSLTTETTTSKSEATANPLAALDDA  
ISQIDKFRSSLGAIQNRRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQA  
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>gi|291470750| H37 (Hxx99.8%) [gi|293410282| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSEIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTTITIDLKIDSSTLKLKTGFNVNGKAA  
VDNAKATDANLTTAGFTQGVVDSNGNSTWTKSTTTNFDAATAVNVLAAVKDGSTINYTGT  
GNLGLIAATSAYTYHDSTKSYTFDSTGAAVAGAASSLQGTFGTDTNTAKITIDGSAQEVN  
IAKDGIKIDTDGKALYIDSTGNLTKNGSDTLIQTALNDVLTGANSVDDTRIDFDSGMSVT  
LDKVNSTVDITGASISAAAMTNELTGKAYTVVNGAESYAVATNNTVKTADAKNVYVDAS  
GKLTDDKATVTETYHEFANGNIYDDKGAAVYAAAADGSLTTETTTSKSEATANPLAALDDA  
ISQIDKFRSSLGAIQNRRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQA  
GNSVLAKANQVPQQVLSLLQG

>gi|33590225| H38

MAQVINTNSLSLITQNNINKNQSALSSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTTISIDLQKIDSSTLGLNGFVSNAV  
SVGDAITQLPGETAADAPVTIKFDDSVKTDLKLTDASGSSLHNLKDENGNTNQQYVQNG  
GKSYAATVAANGNVTLNKANVTYSVANGIDTATQSGQLVQVGADSTGTPKAFVSVQGS  
FGIDDAALKNNTGDATATQPGTSGTTVVAASIHSTGKNSVDADVTASTEELTGASTNDPL  
TLLDKAIASVDKFRSSLGAVQNRSLSSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKA  
QIIQQAAGNSVLSKANQVPQQVLSLLQG

>gi|33590239| H38

MAQVINTNSLSLITQNNINKNQSALSSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTTISIDLQKIDSSTLGLNGFVSNAV

SVGDAITQLPGETAADAPVTIKFDDSVKTDLKLTDASGLSLHNLKDENGNLTNQYVVQNG  
GKSYAATVAANGNVTLNKANVTYSDVANGIDTATQSGQLVQVGADSTGTPKAFVSIQGKS  
FGIDDAALKNNTGDATATQPGTSGTTVVAASIHLSSTGKNSVDADVTASTEFTGASTNDPL  
TLLDKAIASVDKFRSSLGAVQNRLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKA  
QIIQQAGNSVLSKANQVPQQVLSLLQG

>gi|30059908| H38

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTQATTGTNSDSDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGSMKIQVGANDGQTI SIDLQKIDSSTLGLNGFSVSKNAV  
SVGDAITQLPGETAADAPVTIKFDDSVKTDLKLTDASGLSLHNLKDENGNLTNQYVVQNG  
GKSYAATVAANGNVTLNKANVTYSDVANGIDTATQSGQLVQVGADSTGTPKAFVSVQGKS  
FGIDDAALKNNTGDATATQPGTSGTTVVAASIHLSSTGKNSVDADVTASTEFTGASTNDPL  
TLLDKAIASVDKFRSSLGAVQNRLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKA  
QIIQQAGNSVLSKANQVPQQVLSLLQG

>gi|345355418| H38 (Hxx99.6%)

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMKIQVGANDGQTI SIDLQKIDSSTLGLNGFSVSKNAV  
SVGDAITQLPGATAAADAPVTIKFDDSVKTDLKLTDASGLSLHNLKDENGNLTNQYVVQNG  
GKSYAATVAANGNVTLNKANVTYSDVANGIDTATQSGQLVQVGADSTGTPKAFVSVQGKS  
FGIDDAALKNNTGDATATSPGTSGTTVVAASIHLSSTGKNSVDADVTASTEFTGASTNDPL  
TLLDKAIASVDKFRSSLGAVQNRLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKA  
QIIQQAGNSVLSKANQVPQQVLSLLQG

>gi|30059910| H39

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTAEGALSEINNNLQRVRELTQATTGTNSDSDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKNGSMAIQVGANDGQTI SIDLQKIDSSTLGLSGFSVSNLSL  
KLSDSITTTIGNTTAASKNVDLSAVATKLGVNASTLSLHEVQDSAGDGTGTFVSSGSDNY  
AVSVDAASGAVNLNTTDDVYDDATNGVTGATQNGQLIKVTSANGAAVGYVTIQGKNYQA  
GATGVDVLANSVAAPTTAVDTGTLQLSGTGATTELKGTATQNPLALLDKAIASVDKFRS  
SLGAVQNRLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIVQQAGNSVLSKAN  
QVPQQVLSLLQG

>gi|124516975| H40

SQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTEG  
ALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAETQRLLEEIDRVSEQTQFNGVKVLAE  
NNEMKIQVGANDGEAITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNYDV  
GGDAYTVNVDSGAVKDKDNKDVVSAADGSLT

>gi|124516973| H40

SQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTTEG  
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NNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNYDV  
GGDAYTVNVDSGAVKDKDNKDVVSAADGSLT

>gi|124516981| H40

MAQVINTNSLSLITQNNLNKSSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
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EEIDRVSEQTQFNGVKVLAENNEMKIQVGANDGEAITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYDVGGDAYTVNVDSGAVKDKDNKDVVSAADGSLTTSSTKVD  
GKSIDATELAKLAINLADQKSIDYKGITFTNKSGTAFDANGKGVLTANIDGQDVKFTINS  
TAATGADATITTDIDVYKNSAGQFTTTKVENKAATLSDLDLNAAKKTGSTLVVNGATYV  
SADGKTVTDTTPGAPKVMYLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLR  
SDLGAVQNRFDSAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQIILQQAGTSVLAQA  
NQTTQNVLSLLR

>gi|25992231| H40

NKSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKGLTQASRNANDGISVAQTT  
EGALNEINNNLQRIRELSVQATNGTNSDSDLSSIQAEITQRLEEIDRVSEQTQFNGVKVL  
AENNEMKIQVGANDGEAITINLAKIDAKTLGLDGFNIDGAQKATGSDLISKFKATGTDNY  
DVGGDAYTVNVDSGAVKDKDNKDVVSAADGSLTSSDTKVDGKSIDATELAKLAINLAD  
QKSIDYKGITFTNKSGTAFDANGKGVLTANIDGQDVKFTINSTAATGADATITTDIDVYK  
NSAGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNVSADGKTVTDTPGAPKVM  
YLSKSEGGSPILVNEDAASLQFTTNPLETIDKALAKVDNLRSDLGAVQNRFDFAITNLG  
NTVNNLFSARSRIEDADYATEVSNMFRAQILQQAG

>gi|118403359| H40

MAQVINTNSLSLITQNNLNKNSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALNEINNNLQRVRELTQVQATNGTNSDSDLSSIQAEITQRL  
EIDRVSEQTQFNGVKVLAENNEMKIQVGANDGETITINLAKIDAKTLGLDGFNIDGAQK  
ATGSDLISKFKATGTDNYDVGGDAYTVNVDSGAVKDKDNKDVVSAADGSLTSSDTKVD  
GKSIDATELAKLAINLADQKSIDYKGITFTNKSGTAFDANGKGVLTANIDGQDVKFTINS  
KAATGADATITTDIDVYKNSAGQFTTTKVENKAATLSDDLNAAKKTGSTLVVNGATYNV  
SADGKTVTDTPGAPKVMYLSKSEGGSPILVNEDAASLQSTTNPLETIDKALAKVDNLR  
SDLGAVQNRFDFAITNLGNTVNNLSSARSRIEDADYATEVSNMSRAQILQQAGTSVLAQA  
NQTTQNVLSLLR

>gi|30059912| H41

MAQVINTNSLSLITQNNLNKNSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTQVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAQDGSMMKIQVGANDGQTTITIDLKIDSIDLGLSGFNVNGKGA  
VANAKATEADLTGAGFSQGAVDNNGNSTWTKSTTTNYSAAATTADLLSTIKDGSTVTYAGT  
DTGLGVAAAGNYTYDANSKSYSFNANGLTGANTATALKGYLGTGANTAKISIGGTEQEVN  
IAKDGTTITDNGDALYLDITGNLTKNYAGSPPAATLDNVLASATVNATIKFDSGMTVDYT  
AGTGANITGASISADDMAAKLSGKAYTVANGAESYDVAAVTGAVTTTAGNSPVYADADGK  
LTTASANTVTQTYHEFANGNIYDDKGSSLYKAADGSLTSEAKGKSEATADPLKALDEAIS  
SIDKFRSSLGAVQNRRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGN  
SVLAKANQVPQQVLSLLQG

>gi|331059221| H41 (Hxx99.8%) [gi|331663422| Hxx]

MAQVINTNSLSLITQNNLNKNSQSSLSSAIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTQVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAQDGSMMKIQVGANDGQTTITIDLKIDSIDLGLSGFNVNGKGA  
VANAKATEADLTGAGFSQGAVDNNGNSTWTKSTTTNYSAAATTADLLSTIKDGSTVTYAGT  
DTGLGVAAAGNYTYDANSKSYSFNANGLTGANTATALKGYLGTGANTAKISIGGTEQEVN  
IAKDGTTITDNGDALYLDITGNLTKNYAGSPPAATLDNVLASATVNATIKFDSGMTVDYT  
AGTGANITGASISADDMAAKLSGKAYTVANGAESYDVAAVTGAVTTTAGNSPVYADADGK  
LTTASANTVTQTYHEFANGNIYDDKGSSLYKAADGSLTSEAKGKSEATADPLKALDEAIS  
SIDKFRSSLGAVQNRRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGN  
SVLAKANQVPQQVLSLLQG

>gi|33590227| H42

MAQVINTNSLSLITQNNIDKNQALSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTQVQATTGTNSDSDLSSIQDEIKSRL  
AEIDRVSGQTQFNGVNVLAQNGSLNIQVGANDGQTTISIDLQKIDSSALGLSGFSVAGGAL  
KLSDTVTQVGDGSAAPVKVDLDAATDIGTALGQKVNASSLTLHNILDKDGAATENYVVS  
YGSNDYAASVADDGTVTNLKTDITYSGGDITGATKDDTLIKVAANSDEAVGFATVQGN  
YEITDGVKNQSTAAPTIDIAQTIDLDTADEFTGASTADPLALLDKAIAQVDTFRSSLGVVQ  
NRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQV  
LSLLQG

>gi|6941884| H42

MAQVINTNSLSLITQNNLNKNSQALSTSIERLSSGLRINSKDDAAGQAIANRFTSNIKG

LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
AEIDRVSGQTQFNGVNVLAKNGSLNIQVGANDGQTISIDLQKIDSSALGLSGFSVAGGAL  
KLSDTVTVQVGDGSAAPVKVDLDAAADDIGTALGQKVNASSLTLHNI LDKDGAATENYVVS  
YGS DNYAASVADDGTVTLNKTDITYSGGDITGATKDDTLIKVAANS DGEAVGFANVQGN  
YEITDGVKTQSTAAPTDIAQTI DLDTADEFTGASTADPLALLDKAIAQVDTFRSSLGAVQ  
NRPSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQV  
LSLLQG

>gi|30059914| H42

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
AEIDRVSGQTQFNGVNVLAKNGSLNIQVGANDGQTISIDLQKIDSSALGLSGFSVAGGAL  
KLSDTVTVQVGDGSAAPVKVDLDAAADDIGTALGQKVNASSLTLHNI LDKDGAATENYVVS  
YGS DNYAASVADDGTVTLNKTDITYSGGDITGATKDDTLIKVAANS DGEAVGFATVQGN  
YEITDGVKNQSTAAPTDIAQTI DLDTADEFTGASTADPLALLDKAIAQVDTFRSSLGAVQ  
NRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQV  
LSLLQG

>gi|33590233| H42

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
AEIDRVSGQTQFNGVNVLAKNGSLNIQVGANDGQTISIDLQKIDSSALGLSGFSVAGGAL  
KLSDTVTVQVGDGSAAPVKVDLDAAADDIGTALGQKVNASSLTLHNI LDKDGAATENYVVS  
YGS DNYAASVADDGTVTLNKTDITYSGGDITGATKDDTLIKVAANS DGEAVGFATVQGN  
YEITDGVKNQSTAAPTDIAQTI DLDTADEFTGASTADPLALLDKAIAQVDTFRSSLGAVQ  
NRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQV  
LSLLQG

>gi|6941886| H43 [gi|30059916| H43]

MAQVINTNSLSLITQNNINKNQSALSSS IERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
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EEIDRVSGQTQFNGVNVLAKDGMTKIQVGANDGQTISIDLK KIDSSTLGLTGFDVSTKAN  
ISTTAVTGAATTTYADSAVAIDIGTDISGIAADAALGTINFDNTTGKY YAQITSAANPGL  
DGAYEIHVNADAGSFTVAASDKQAGAAPGTALTS GKVQTATTTTPGTAVDVTAAKTALAAA  
GADTSGLKLVLQNTDSAGKVTNVGYGLQNDSGTIFATDYDGT TVTTPGAETV TYKDASG  
NSTTAAVTLGGSDGKTNLVTAADGKTYGATALNGADLSDPNNTV KSVADNAKPLAALDDA  
IAMVDKFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQA  
GNSVLSKANQVPQQVLSLLQG

>gi|125659369| H44

MAQVINTNSLSLITQNNINKNQSSMSTAIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQSSTGTNSKSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGMKIQVGANDGQTITIDLK KIDSSTLNLTGFNVNGEGS  
VANKAATKADLTAAQLTTTAAAGGTIAAPAADANGVTKYTVSAGLNESTVADV FVAGLGDTA  
VVNANITSGFDAVTGNNYTYHKDTNDFTFNATIAAGDATT PSENSAKLQSILTPKAGDAH  
LNVKIGATSVDVVLLSSDGKITAKDGSKLFIDGNLTQNSAGAGIKPATLDAL TQNTTTP  
AAAVPVTITTEDKTEIKLAGATVAGQSGAIVVTGARISAEAMQSATKTTGFTTGT TTVAA  
NTGKVTIGGNQAYTQTDGTLAAKNETEIFLQKDGSI TNNSGKAVYVQEDGKFTTDAATKA  
ATTADPLKALDDAISSIDKFRSSLGAVQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATE  
VSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|125659364| H44

MAQVINTNSLSLITQNNINKNQSALSTSIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGMKIQVGANDGQTISIDLQ KIDSSTLGLNGFSVSKNAV  
SVGDAITQLPGETAADAPVTIKFDDSVKTDLKLTDASGLSLHNLKDENG LTNQYVVQNG  
GKSYAATVAANGNVTLNKANVTYSVDVANGIDTATQSGQLVQVGADSTGTPKAFVSVQGS

FGIDDAALKNNTGDATATPPGTS GTTVVAAS IHLSTGKNSVDADVTASTEFTGASTNDPL  
TLLDKAIASVDKFRSSLGAVQNRLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKA  
QIIQQAGNSVLSKANQVPQQVLSLLQG

>gi|88683097| H44

MAQVINTNSLSLITQNNINKNQSSMSTAIERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQSSTGTNSQSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKQIDSNTLKLSGFNVNGKGG  
VANAVATAADMTAAGFTLAGNTYTGSAGFKAASSADVLGSLANGDTVLSAGTVADGLSGA  
ANTYTYDKANDKFTFGVTGATSAQVLSYLNPSAGD TTSATVTIGTTKQDVI IAKDGTTLTA  
KDDGAALYLDTTGNLTKNSAGTPPVATLAGXQANGGGTAIASSITTASGETLTLAGGTAG  
TIDVTNASISADKLQSGAAAAGYTTSTGYAVDNAGAVKNGAADVYVDNNAALTTNTATY  
FVQTDGSITNGSGKVAHKDANGKITTTDAQTATTATDPLKALDDAISSIDKFRSSLGAVQ  
NRLSSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQV  
LSLXQG

>gi|30059918| H45

MAQVINTNSLSLITQNNINKNQSSALSSS IERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLNGFNVNGKGT  
IANKAATVSDLTAAGATGTGPYAVTTNNTALSASDALSRLKTGDTVTTTGSSAAIYTYDA  
AKGNFTTQATVADGDVVNFANTLKP AAGTTASGVYTRSTGDVKFVDVANGDVTIGGKAAY  
LDATGNLSTNPNGIASSAKLSDFASGSTLATTGSIQLSGT TYNFGAAATSGV TYTKTVS  
ADTVLSTVQSAATANTAVTGATIKYNTGIQSATASFGGVNTNGAGNSNDTYTDADKELTT  
TASYTINYNVDKDTGTVTVASNGAGATGKFAATVGAQAYVNSTGKLT TETTSAGTATKDP  
LAALDEAISSIDKFRSSLGAIQNR LDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSK  
AQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|6009843| H45

MAQVINTNSLSLITQNNINKNQSSALSSS IERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLNGFNVNGKGT  
IANKAATVSDLTAAGATGTGPYAVTTNNTALSASDALSRLKTGDTVTTTGSSAAIYTYDA  
AKGNFTTQATVADGDVVNFANTLKP AAGTTASGVYTRSTGDVKFVDVANGDVTIGGKAAY  
LDATGNLSTNAGIASSAKLSDFASGSTLATTGSIQLSGT TYNFGAAATSGV TYTKTVS  
ADTVLSTVQSAATANTAVTGATIKYNTGIQSATASFGGVNTNGAGNSNDTYTDADKELTT  
TASYTINYNVDKDTGTVTVASNGAGATGKFAATVGAQAYVNSTGKLT TETTSAGTATKDP  
LAALDEAISSIDKFRSSLGAIQNR LDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSK  
AQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|323186803| H45 (Hxx99.1%)

MAQVINTNSLSLITQNNINKNQSSALSSS IERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDSS MKIQVGANDGQTITIDLK KIDS DTLGLNGFNVNGKGT  
IANKAATVSDLTAAGATGTGPYAVTTNNTALSASDALSRLKTGDTVTTTGSSAAIYTYDA  
AKGNFTTQATVADGDVVNFANTLKP AAGTTASGVYTRSTGDVKFVDVANGDVTIGGKAAY  
LDATGNLSTNNADIASSAKLSDFASGSTLATTGSIQLSGT TYNFGAAATSGV TYTKTVS  
ADTVLSTVQSAATANTAVTGATIKYNTGIQSATASFGGANTNGAGNSNDTYTDADKELTT  
TASYTINYNVDKDTGTVTVASNGAGATGKFAATVGAQAYVNSTGKLT TETTSAGTATKDP  
LAALDDAISSIDKFRSSLGAIQNR LDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSK  
AQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|218369499| H45 (Hxx99.5%) [gi|349738285| Hxx] [gi|218699513| Hxx]

[gi|342722669| Hxx]

MAQVINTNSLSLITQNNINKNQSSALSSS IERLSSGLRINS AKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLK KIDS DTLGLNGFNVNGKGT

IANKAATVSDLTAAGATGTGPYAVTTNNTALSASDALSRLKTGDTVTTTGSSAATYTYDA  
AKGNFTTQATVADGDVNFANTLKPAAAGTTASGVYTRSTGDVKFDVDANGDVTIGGKAAAY  
LDATGNLSTNNAGIASSAKLSDLFASGSTLATTGSIQLSGTTYNFCAAATSGVYTYTKTVS  
ADTVLSTVQSAATANTAVTGATIKYNTGIQSATASFGGANTNGAGNSNDTYTDADKELTT  
TASYTINYNVDKDTGTVTVASNGAGATGKFAATVGAQAYVNSTGKLTETTSAGTATKDP  
LAALDDAISSIDKFRSSLGAIQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSK  
AQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|323977896| H45 (Hxx99.3%)

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQATTGTNSQSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTITIDLKKIDSSTLGLNGFNVNGKGT  
IANKAATVSDLTAAGATGTGPYAVTTNNTALSASDALSRLKTGDTVTTTGSSAATYTYDA  
AKGNFTTQATVADGDVNFANTLKPAAAGTTASGVYTRSTGDVKFDVDANGDVTIGGKAAAY  
LDATGNLSTNNAGIASSAKLSDLFASGSTLATTGSIQLSGTTYNFCAAATSGVYTYTKTVS  
ADTVLSTVQSAATANTAVTGATIKYNTGIQSATASFGGANTNGAGNSNDTYTDADKELTT  
TASYTINYNVDKDTGTVTVASNGAGATGKFAATVGAQAYVNSTGKLTETTSAGTATKDP  
LAALDDAISSIDKFRSSLGAIQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSK  
AQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|6009845| H46

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTITIDLKKIDSSTLKLTFGNVNGSVA  
NTAATKDELAAGAAAAAGTTPAVGTDGVTKYTVDAGLNKATAANVFANLADGAVVDASISN  
GFGAAAATDYTYNKATNDFTFNASIAAGAAAGDSNSAALQSFLTPKAGDTANLSVKIGTT  
SVNVVLASDGKITAKDGSALYIDSTGNLTQNSAGTVTAATLDGLTKNH DATGAVGVDIT  
ADGATISLAGSANAATGTQSGAITLKNVRI SADALQSAKGTVINVDNGADDISVSKTGV  
VTTGGAPTYTDADGKLTNTNTVDYFLQTDGSVTNGSGKGVYTDAAAGKFTTDAATKAATTT  
DPLKALDDAISQIDKFRSSLGAIQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNM  
SKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|30059920| H46

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRVRELTVQATTGTNSQSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTITIDLKKIDSSTLKLTFGNVNGSGS  
VANTAATKDELAAGAAAAAGTTPAVGTDGVTKYTVDAGLNKATAANVFANLADGAVVDASI  
SNGFGAAAATDYTYNKATNDFTFNASIAAGAAAGDSNSAALQSFLTPKAGDTANLSVKIG  
TTSVNVVLASDGKITAKDGSALYIDSTGNLTQNSAGTVTAATLDGLTKNH DATGAVGVDI  
TTADGATISLAGSANAATGTQSGAITLKNVRI SADALQSAKGTVINVDNGADDISVSKT  
GVVTTGGAPTYTDADGKLTNTNTVDYFLQTDGSVTNGSGKGVYTDAAAGKFTTDAATKAAT  
TTDPLKALDDAISQIDKFRSSLGAIQNRLLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVS  
NMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|325650986| H46

AQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKGL  
TQAARNANDGISVAQTTEGSLSSINNNLQRVRELTVQATTGTNSQSDLDSIQDEIKSRLD  
EIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTITIDLKKIDSSTLKLTFGNVNGSGSV  
ANTAATKDELAAGAAAAAGTTPAVGTDGVTKYTVDAGLNKATAANVFANLADGAVVDASIS  
NGFGAAAATDYTYNKATNDFTFNASIAAGAAAGDSNSAALQSFLTPKAGDTANLSVKIGT  
TSVDVVLASDGKITAKDGSALYIDSTGNLTQNSAGTVTAATLDGLTKNH DATGAVGVDIT  
TADGATISLAGSANAATGTQSGAITLKKVRI SADALQSAKGTVINVDN

>gi|154710458| H47

MAQVINTNSLSLITQNNLNKSSQSSLSIAIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQASRNANDGISVAQTTEGALGEINNNLQRIRELTVQATNGTNSQSDMESIQAEITQRL  
DEIDRVSQTEFNGVSVLGEDKTLKIQVGANDNQSIDINLKKIDSTVLKLRDLDDVVSETQ



YKDGATTLKGDIKDSTSVQGFDTTSEAAISFKDGGKYYAVVSKSTTTDNNGIYAASVDS  
GNVTIDASKKVTVDLADAAGDLTKTKVDEDATAATKTSNPLSKIDDAISDVDSLRS  
AVQNRFDASAITNLGNTVNNLSSARSRIEDSDYATEVSNMSRAQIILQQAGTSVLAQANQTT  
QNVLSLLR

>gi|154710457| H47

MNDISYGREAEKWPREYSMLARRIQFLRFNDYPVKLVSGNGQSIIGYISKFNQKENMILA  
SDEAKGSNRIEVKLEFLASLEELPIGENLTTRLIAADVFNVPDPTKDFFSICNKCFK  
QGVGIVHMLDGRILIGETTGVNACQVGMIRPNGNHMQIMFDWVSRTSSDYS

>gi|46093544| H47 (Hxx99.4%)

MNDISYGREAEKWPREYSMLARRIQFLRFNDYPVKLVSGNGQSIIGYISKFNQKENMILA  
SDEAKGSNRIEVKLEFLASLEELPIGENLTARLIAADVFNVPDPTKDFFSICNKCFK  
QGVGIVHMLDGRILIGETTGVNACQVGMIRPNGNHMQIMFDWVSRTSSDYS

>gi|46093551| H47 (Hxx99.4%)

MNDISYGREAEKWPREYSMLARRIQFLRFNDYPVKLVSGNGQSIIGYISKFNQKENMILA  
SDEAKGSNRIEVKLEFLASLEELPVGENLTTRLIAADVFNVPDPTKDFFSICNKCFK  
QGVGIVHMLDGRILIGETTGVNACQVGMIRPNGNHMQIMFDWVSRTSSDYS

>gi|89143094| H48

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKNGSMKIQVGANDNQTTITIDLKQIDAKTLGLDGFVSKNNDT  
VTTTAPVTAFGATTTNNIKLTGITLSTEAAATDTGGTNPASIEGVYTDNGNDGTVMATGA  
TANATVTDANTTKATTTITSGGTPVQIDNTAGSATANLAVSLVQLQDSKGNDDTYALKD  
TNGNLYAADVNETTGAVSVKTIITYTDSSGAASSPTAVKLGDDGKTEVVDIDGKTYDSAD  
LNGGNLQGTGLTAGGEALTAVANGKTTDPLKALDDAIASVDFRSSLGAVQNRRLDSAVTNL  
NNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|89143092| H48

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQVRRELTQVATTGTNSESDLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKNGSMKIQVGANDNQTTITIDLKQIDAKTLGLDGFVSKNNDT  
VTTTAPVTAFGATTTNNIKLTGITLSTEAAATDTGGTNPASIEGVYTDNGNDYYAKVQIDN  
TAGSATANLAVSLVQLQDSKGNDDTYALKDNTNGNLYAADVNETTGAVSVKTIITYTDSS  
GAASSPTAVKLGDDGKTEVVDIDGKTYDSADLNGGNLQGTGLTAGGEALTAVANGKTTDP  
LKALDDAIASVDFRSSLGAVQNRRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSK  
AQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|120312| H48 (Hxx100.0%) [gi|6009847| H48] [gi|30059922| H48]

[gi|1788232| H48] [gi|315136560| Hxx] [gi|344195624| Hxx]

[gi|238901132| Hxx] [gi|16129870| Hxx] [gi|1736591| Hxx] [gi|146312|

Hxx] [gi|253773124| Hxx] [gi|342364917| Hxx] [gi|238861106| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKNGSMKIQVGANDNQTTITIDLKQIDAKTLGLDGFVSKNNDT  
VTTTAPVTAFGATTTNNIKLTGITLSTEAAATDTGGTNPASIEGVYTDNGNDYYAKITGGD  
NDGKYYAVTVANDGTVMATGATANATVTDANTTKATTTITSGGTPVQIDNTAGSATANL  
AVSLVQLQDSKGNDDTYALKDNTNGNLYAADVNETTGAVSVKTIITYTDSSGAASSPTAVK  
LGGDDGKTEVVDIDGKTYDSADLNGGNLQGTGLTAGGEALTAVANGKTTDPLKALDDAIAS  
VDFRSSLGAVQNRRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNS  
VLAKANQVPQQVLSLLQG

>gi|6009849| H49

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
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DEIDRVSGQTQFNGVNVLAKDGSMMKIQVGANDGQTITIDLKIDSIDLGLNGFVNGKGT  
IANKAATISDLAATGANVTNSSNIVVTTKFNALDAATAFSLKLDGDSVAVAAQKYTYNAS

TNDFTTENTVATGTATTDLGATLKAAAGAESIRYIYLLQMVKLTMLMQAVISLLAAKRL  
SWVGGALTTNDPTGSTPATMSSLFKAADDKDAQAQSSIDFGGKKYEFAGGNSTNGGGVKFK  
DTVSSDALLAQVKADSTANNVKITFNNGPLSFTASFQNGVSGSAASNAAYIDSEGELTTT  
ESYNTNYSVDKDTGAVSVTGGSGTGKYAANVGAQAYVGADGKLTNTTSTGSATKDPLNA  
LDEAIASIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQI  
IQQAGNSVLAKANQVPQQVLSLLQG

>gi|16901500| H49

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKKIDS DTLGLNGFNVNGKGT  
IANKAATISDLAATGANVTNSSNI VVTTKFNALDAATAFSKCLKDGDSVAVAAQKYTYNAS  
TNDFTTENTVATGTATTDLGATLKAAAGQSQSGTYTFANGKVNFDVDASGNITIGGEKAF  
LVGGALTTNDPTGSTSATMSSLFKAADDKDAQAQSSIDFGGKKYEFAGGNSTNGGGVKFKD  
TVSSDALLAQVKADSTANNVKITFNNGPLSFTASFQNGVSGSAASNAAYIDSEGELTTTE  
SYNTNYSVDKDTGAVSVTGGSGTGKYAANVGAQAYVGADGKLTNTTSTGSATKDPLNAL  
DEAIASIDKFRSSLGAIQNRLDSAVTNLNNTSTNLSEAQSRIQDADYATEVSNMSKAQII  
QQAGNSVLAKANQVPQQVLSLLQG

>gi|535045| H49 (Hxx99.3%)

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKKIDS DTLGLNGFNVNGKGT  
IANKAATISDLAATGAI VTNSSNI VVTTKFNALDAATAFSKCLKDGDSVAVAAQKYTYNA  
STNDFTTENTVATGTATTDLGATLKAAAGQSQSGTYTFANGKVNFDVDASGNITIGGEKA  
FLVGGALTTNDPTGSTPATMSSLFKAADDKDAQAQSSIDFGGKKYEFAGGNSTNGGGVKFK  
DTVSSDALLAQVKADSTANNVKITFNNGPLSFTASFQNGVSGSAASNAAYIDSEGELTTT  
ESYNTNYSVDKDTGAVSVTGGSGTGKYAANVGAQAYVGADGKLTNTTSTGSATKDPLNA  
LDEAIASIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQI  
IQQAGNSVLAKANQVPQQVLSLLQG

>gi|30059924| H49 [gi|315061223| Hxx] [gi|323186300| Hxx]

[gi|307314170| Hxx] [gi|323378200| Hxx] [gi|306906139| Hxx]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGS MKIQVGANDGQTITIDLKKIDS DTLGLNGFNVNGKGT  
IANKAATISDLAATGANVTNSSNI VVTTKFNALDAATAFSKCLKDGDSVAVAAQKYTYNAS  
TNDFTTENTVATGTATTDLGATLKAAAGQSQSGTYTFANGKVNFDVDASGNITIGGEKAF  
LVGGALTTNDPTGSTPATMSSLFKAADDKDAQAQSSIDFGGKKYEFAGGNSTNGGGVKFKD  
TVSSDALLAQVKADSTANNVKITFNNGPLSFTASFQNGVSGSAASNAAYIDSEGELTTTE  
SYNTNYSVDKDTGAVSVTGGSGTGKYAANVGAQAYVGADGKLTNTTSTGSATKDPLNAL  
DEAIASIDKFRSSLGAIQNRLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQII  
QQAGNSVLAKANQVPQQVLSLLQG

>gi|6009851| H51 [gi|30059926| H51]

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLASIQDEIKSRL  
SEIDRVSGQTQFNGVNVLSKDGSLKIQVGANDGQTISIDLKKIDS DTLGLNGFNVNGSGT  
IANKAATISDLTAQKAVDNGNGTYKVTT SNAALTASQALS KLSGD TVDIATYAGGTSST  
VSYKYDADAGNFSYNNTANKTSAAAGTLADTLLPAAGQTKTGTYKAATGDVNFVNDATGN  
LTIGGQQAYLTTDGNLTTNNSGGAATATLKEFLTLAGDGKSLGNGGTATVTLDNNTTYNFK  
AAANVTDGAGVIAAGVITYTATVSKDVILAQLQSASQAAATATDGD TVATINYKSGVMIG  
SATFTNGKGTADGMTSGTTPVVATGAKAVYVDGNNELTSTASYDTTYSVNADTGAVKVV  
GTGTGKFEAVAGADAYVSKDGKLT TETTSAGTATKDPLAALDAAISSIDKFRSSLGAIQN  
RLDSAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQV  
LSLLQG

>gi|30059928| H52

MAQVINTNSLSLITQNNINKNQSALSSSIERLSSGLRINSAKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQASTGTNSDSDLDSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLAKDGMKIQVGGANDGQTTISIDLQKIDSSTLGLKGFVSVGNAL  
KVSDAITTVPGANAGDAPVTVKFGANDTAAAAMAKTLGISDTSGLSLHNVQSADGKATGT  
YVVQSGNDFYSASVNAVGGVVTLNNTNVTFTDPANGVTTATQTGQPIKVTNSAGAAVGYV  
TIQKDYLAGADGKDAIENGDAATNEDTKIQLTDELVDGVSVKTAATATFSGTATNDPL  
ALLDKAISQVDTFRSSLGAVQNRDLDAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKA  
QIIQQAGNSVLSKANQVPQQVLSLLQG

>gi|290918477| H52 (Hxx80.8%)

PIQNNINKNQSALSSSIERLSSGLRINSAKDDAAGQAIANRFTSNIKG  
SLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSDLSSIQDEIKSRLDEIDRVSGQTQF  
NGVNVLAKDGMKIQVGGANDGQTVSIDLQKIDSSALGLKGFVSVGNALKVGDAITSI  
PGA  
TAPVAIDFGDATVAGSIAKTLGVTDNSGLSLHNIIDKVGKATNTYVIQSGSNSYSASVTA  
GGTVTLNNTNVTYDDPANGVTAAKQTGQPIKVTNSNGEAVGYVSVQKDYLAGVTGTGK  
DAVANGQTAAIATTLRVSDDPADATKLATTTFTGTATSPLALLDKAIASVDKFRSSLGA  
VQNRDLDAVTNLNNTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLPKL

>gi|46093552| H53

MAQVINTNSLSLLTQNNLNKSQSSLSIAIERLSSGLRINSAKDDAAGQAIANRFTSNIKG  
LTQASRNANDGISIAQTTEGALNEINNNLQRVRELAVQSQNGTNSDSDVQSIQEEIQORL  
AEIDRVSGQTQFNGVKVLTSDSKLSIQVGGANDGEKIDIDLKIDTGTGLLANFVSDSKFD  
STSTKTIVANGGDIVLSSKTIKAEIQIDSHSADPKAADGLYALKDGTGYAVKDKDGAYHAA  
VKNADGKVTWSSDTSVTATDQTTKVFTEFQEVYKVAANTSGLAANQTFKSYKKDNGE  
LGYYVENADGTFNRANVDSKTGVVSVGTIKISTSPDVLATIDNALKIVDSQRSLSLGAIQNR  
FDSAITNLGNTVNNLSSARSRIEDSDYATEVSNMSRAQIILQQAGTSVLAQANQTTQNVLS  
LLR

>gi|283982453| H53

MNDISYGREAEKWPREYSMLARRIQILRFNDYPVKLVSGNGQSIIGYISKFNQKENMILA  
SDEAKGSNRIEVEKLEFLASLEELPVGENLTTRLIAADVFNVPDPTKDFFSICNKCFK  
QGVGKIKVHMLDGRILIGETTGVNACQVGMIRPNGNHMQIMFDWVSRIITSSDYSD

>gi|46093563| H54

MAQVINTNSLSLLTQNNLNKSQSSLSIAIERLSSGLRINSAKDDAAGQAIANRFTANIKG  
LTQASRNANDGISVAQTTEGALSEINNNLQRVRELTVQATNGTNSDSDLSSIQAEITQRL  
NEIDRVSGQTQFNGVKVLASKNTLTIQVGGANDGETIDINLKEINSQTLGLDKLVQKAYT  
PSGENVKVDTTTTYTTTYTDGTAIKKAALATDVNNASSIGVSDAIPGDIKFNETSGKYV  
AITSTEHNKNGDYEITVDKDGSAALVAGQSSPKSLEDVGATKNVTAYQVANTQSNTQSV  
DATVSAGAISELKTGGVDNTAAGNAKLVKMTYTDSDNGKKVEGGYALKVGGDYAAYEST  
SKTIVTVRTTSYKVDVGPQKGLNKIGGADGKTETVTIGEKTAAADKLDHDFSKQATLGE  
EATTTTVNPLDAIDKALAQVDSLRSDLGAVQNRFDSTITNLGNTLNNLSSARSRIEDADY  
ATEVSNMSRAQIILQQAGTSVLAQANQTTQNVLSLLR

>gi|307553085| H54 (Hxx27.9%)

MRFSTQMMYQQNMRGITNSQAEWMKYGEQMSTGKRNVNPSDDPIAASQAVVLSQAQAQNS  
QYTLARTFATQKVSLEESVLSQVTTAIQNAQEKIVYASNGTSLSDDDRASLATDIQGLRDQ  
LLNLANTTDGNGRYIFAGYKTETAPFSEADGDYVGGTESIKQQVDASRSMVIGHTGDKIF  
DSITSNVAEPPDGSASETNLFAMLDIAAALKTPVADSEADKETAAAALDKTNRGLKNSL  
NNVLTVRAELGTQLNELESLSLSDRDLGQTTQQMSDLVDVDWNATISSYIMQQTALQAS  
YKAFTDMQGLSLFQLNK

>gi|46093564| H54 (Hxx100.0%) [gi|283982455| H54]

MVNDITYGREAEVWPRDYSMARRIQILRFNDYPIKLVSSNGHSIIGYISKFNQKENMIL  
ASDEAKGNRVEVKLESIASLEELLVKGDFTTTRLIVGDVFNNQPCPPTKDFFSICNKCF  
KQGIGIKVHMLDGRILTGTGTTGVNACQVGIKSNNGNHMQIMFDWVSRIITSSDYSG

>gi|125659376| H55

MAQVINTNSLSLITQNNINKNQSSMSTAIERLSSGLRINSAKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISVAQTTEGALSEINNNLQRIRELTVQSSTGTNSESDLNSIQDEIKSRL  
DEIDRVSGQTQFNGVNVVLAKDGSMMKIQVGANDGETITIDLKKIDSSTLNLTFGNVNGKGS  
VSNTAATDTLKLKLAGFTAGATPAADGTVTYSKDVDNAKAAASNVLAAAKNGDTISFAGNN  
GTGITATAGTYTYNKASDSYSFSATAASKDSSLMLAPNAGDSFTASVSI GGKAQDVNVV  
KDGITTTTTDGKSLYLDQKGNLTQTGSGTTIAATWDNLNANTDTTGVDATSGHSAATAVKT  
IIKVKDMTITSAGGNAQVATDKAYNDKYAARIVAGDTAAQADTAADTAEATATTTAVANT  
TADVSGVTISASQMASILKDKDFALNSGTTQYAVTGSTGAVTYDPDTPAATGDIVSAYV  
DDAGTLTTDANKTVKYAHTNGSVTNDSGSAIYATEAGKLTTEASTAAETTANPLKALDD  
AISQIDKFRSSLGAVQNRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQ  
AGNSVLAKANQVPQQVLSLLQG

>gi|125659361| H55

MAQVINTNSLSLITQNNINKNQSSALSTSIERLSSGLRINSAKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRIRELTVQASTGTNSDSLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVLSKNDMMKIQIGANDNQTTISIGLQQIDSTLNLKGFVSGMAD  
FSAAKLTAADGTAIAAADVKDAGGKQVNLSTYDTASNSTKYAVVDSATGKYM EATVAIT  
GTAAAVTVGAAEVAGAATADPLKALDAAIAKVDKFRSSLGAVQNRLDFAVTNLNNTTTTNL  
SEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAKANQVPQQVLSLLQG

>gi|121144335| H55

SLSLITQNNINKNQSSMSTAIERLSSGLRINSAKDDAAGQAIANRFTSNIKGLTQAARNA  
NDGISVAQTTEGALSEINNNLQRIRELTVQSSTGTNSESDLNSIQDEIKSRLDEIDRVSG  
QTQFNGVNVVLAKDGSMMKIQVGANDGETITIDLKKIDSSTLNLTFGNVNGKGSVSNTAATT  
DTLKLKLAGFTAGATPAADGTVTYSKDVDNAKAAASNVLAAAKNGDTISFAGNNGTGITATA  
GTYTYNKASDSYSFSATAASKDSSLMLAPNAGDSFTASVSI GGKAQDVNVVSKDGITTTT  
DGKSLYLDQKGNLTQTGSGTTIAATWDNLNVNTDTTGVDATSGHSAATAVKTIIKVKDMT  
ITSAGGNAQVATDKAYNDKYAARIVAGDTAAQADTAADTAEATATTTAVANTTADVSGVT  
ISASQMASILKDKDFALNSGTTQYAVTGSTGAVTYDPDTPAATGDIVSAYVDDAGTLTT  
DANKTVKYAHTNGSVTNDSGSAIYATEADKLTTEASTAAETTANPLKALDDAISQIDKF  
RSSLGAVQNRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVLAK  
ANQVPQQV

>gi|30059930| H56

MAQVINTNSLSLITQNNINKNQSSALSTSIERLSSGLRINSAKDDAAGQAIANRFTSNIKG  
LTQAARNANDGISLAQTTEGALSEINNNLQRVRELTVQATTGTNSDSLSSIQDEIKSRL  
DEIDRVSGQTQFNGVNVVLAKDGSMMKIQVGANDGQTISIDLQKIDSSTLGLNGFSVSAQSL  
NVGDSITQITGAAGTKPVGVDFTAVAKDLTTATGKTVDVSSLTLHNTLDAKGAATAQFVV  
QSGSDFYSASIDHASGEVTLNKADVEYKDTDNGLTTAATQKDQLIKVAADSDGAAAGYVT  
FQGKNYATTAPAALNDDTTATATANKVVVELSTATPTAQFSGASSADPLALLDKAIAQVD  
TFRSSLGAVQNRLDSAVTNLNNTTTTNLSEAQSRIQDADYATEVSNMSKAQIIQQAGNSVL  
SKANQVPQQVLSLLQG

**Supplementary Table 1.** Results of MALDI-TOF analysis on *E. coli* flagella (MS-H) using two matrix types (DHB and CHCA)

Strain Number	Serotype	MALDI-TOF Results			
		DHB		CHCA	
		MS-H type <sup>a</sup>	Sequence Coverage (%)	MS-H type <sup>a</sup>	Sequence Coverage (%)
EDL933	H7	H7	89	H7	54
85-489	H21	H21	89	H21	76
87-1215	H7	H7	66	H7	36
H19	H11	H11	24	NS <sup>b</sup>	N/A <sup>c</sup>
E32511	NM <sup>d</sup>	NS <sup>b</sup>	N/A <sup>c</sup>	NS <sup>b</sup>	N/A <sup>c</sup>

<sup>a</sup>Top hits of the mass profiling of H antigens (MS-H) from at least three of four sample-loaded grid spots.

<sup>b</sup>NS, no significant identification.

<sup>c</sup>N/A, not applicable.

<sup>d</sup>NM, non-motile.

**Supplementary Table 2.** Results of MALDI-TOF analysis of “difficult” *E. coli* flagella serotypes<sup>a</sup>

Strain number	Serotype	MS-H type <sup>a</sup>		
		Day 1	Day 2	Day 3
E203 <sup>b</sup>	H35	H35	H35	H35
EC246	H35	H35	H35	H35
EC256	H35	Did not meet $\frac{3}{4}$ threshold	No significant ID <sup>c</sup>	No significant ID <sup>c</sup>
EC556	H35	H35	H35	H35
EC787	H35	H35	H35	H35
EC653	H41	H41	H41	H41
EC209 <sup>b</sup>	H41	No significant ID <sup>c</sup>	No significant ID <sup>c</sup>	No significant ID <sup>c</sup>
EC558	H41	No significant ID <sup>c</sup>	No significant ID <sup>c</sup>	No significant ID <sup>c</sup>

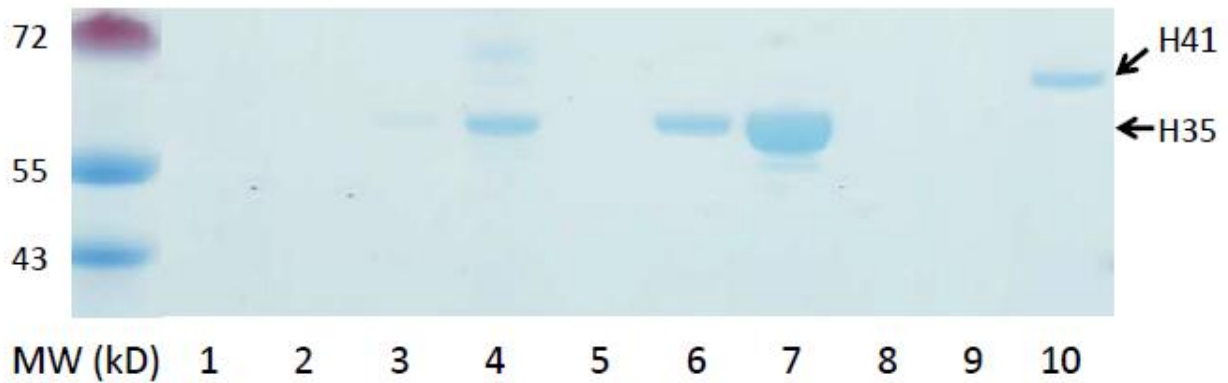
<sup>a</sup>MS-H type is defined as the top hit of the mass profiling search performed on at least three of four sample-loaded grid spots.

<sup>b</sup>*E. coli* reference strains identified only by motility induction in **Table 2** were re-tested, together with other reference strains representing the same H types. The samples were ten-times concentrated and the results obtained by a Mascot database search.

<sup>c</sup>ID, identification

**Supplementary Table 3. Positive H type identification rate of each day out of three day cultures without motility induction for 48 isolates identified**

	MS-H			Total
	Day 1	Day 2	Day 3	
Positive Rate (%)	77.08 (37/48)	83.33 (40/48)	83.33 (40/48)	100.00 (48/48)



**Supplementary Figure 1.** Flagella expression displayed for various *E. coli* isolates using SDS-PAGE. Flagella were enriched on syringe filters and allowed to depolymerize at 37°C for 2 hours. The filters were flushed with hot water (95°C), and vacuum dried for SDS-PAGE. Lanes labeled 1 to 10 each contain one bacterial isolate preparation. Notably, lanes 1 and 2 show no evidence of flagella expression, Lanes 3 to 7 contain reference strains of H35 of varying flagellin expression levels. Lanes 8 to 10 contain reference strains of H41, with only one isolate still expressing flagellin. Expression levels observed for each isolate were supported by MALDI-TOF analysis. MW: molecular marker.