**Severe acute respiratory syndrome coronavirus 2 isolate SARS-CoV-2/human/USA/TX-CDC-STM-MD5ND9CRF/2022, complete genome**

GenBank: OM945690.2

[FASTA](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?report=fasta) [Graphics](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?report=graph)

[Go to:](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2" \l "goto2211578148_0)

LOCUS OM945690 29873 bp RNA linear VRL 25-MAR-2022

DEFINITION Severe acute respiratory syndrome coronavirus 2 isolate

SARS-CoV-2/human/USA/TX-CDC-STM-MD5ND9CRF/2022, complete genome.

ACCESSION OM945690

VERSION OM945690.2

DBLINK BioProject: [PRJNA720050](https://www.ncbi.nlm.nih.gov/bioproject/PRJNA720050)

BioSample: [SAMN26529505](https://www.ncbi.nlm.nih.gov/biosample/SAMN26529505)

KEYWORDS purposeofsampling:baselinesurveillance.

SOURCE Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)

ORGANISM [Severe acute respiratory syndrome coronavirus 2](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=2697049)

Viruses; Riboviria; Orthornavirae; Pisuviricota; Pisoniviricetes;

Nidovirales; Cornidovirineae; Coronaviridae; Orthocoronavirinae;

Betacoronavirus; Sarbecovirus.

REFERENCE 1 (bases 1 to 29873)

AUTHORS Howard,D., Batra,D., Cook,P.W., Caravas,J., Rambo-Martin,B.,

Sammons,S., Unoarumhi,Y., Schmerer,M., Lacek,K.A., Kendall,T.,

Caban Figueroa,V., Ca,H., Morrison,S., Gulvick,C., Sula,E.,

Paden,C.R. and MacCannell,D.

TITLE CDC Sars CoV2 Sequencing Baseline Constellation

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 29873)

AUTHORS Howard,D., Batra,D., Cook,P.W., Caravas,J., Rambo-Martin,B.,

Sammons,S., Unoarumhi,Y., Schmerer,M., Lacek,K.A., Kendall,T.,

Caban Figueroa,V., Ca,H., Morrison,S., Gulvick,C., Sula,E.,

Paden,C.R. and MacCannell,D.

TITLE Direct Submission

JOURNAL Submitted (09-MAR-2022) Respiratory Viruses Branch, Division of

Viral Diseases, Centers for Disease Control and Prevention, 1600

Clifton Rd, Atlanta, GA 30329, USA

COMMENT On Mar 25, 2022 this sequence version replaced [OM945690.1](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.1).

##Assembly-Data-START##

Assembly Method :: Helix klados-fastagenerator-3.0.1

Sequencing Technology :: Illumina NovaSeq

##Assembly-Data-END##

FEATURES Location/Qualifiers

source 1..29873

/organism="Severe acute respiratory syndrome coronavirus

2"

/mol\_type="genomic RNA"

/isolate="SARS-CoV-2/human/USA/TX-CDC-STM-MD5ND9CRF/2022"

/isolation\_source="nasal swab"

/host="Homo sapiens"

/db\_xref="taxon:[2697049](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=2697049)"

/country="USA: Texas"

/collection\_date="2022-02-25"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=266&to=21543) 266..21543

/gene="ORF1ab"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?location=266:13456,13456:21543) join(266..13456,13456..21543)

/gene="ORF1ab"

/ribosomal\_slippage

/codon\_start=1

/product="ORF1ab polyprotein"

/protein\_id="[UMX47158.2](https://www.ncbi.nlm.nih.gov/protein/2211578149)"

/translation="MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEVLSEARQ

HLKDGTCGLVEVEKGVLPQLEQPYVFIKRSDARTAPHGHVMVELVAELGGIQYGRSGE

TLGVLVPHVGEIPVAYRKVLLRKNGNKGAGGHSYGADLKSFDLGDELGTDPYEDFQEN

WNTKHSSGVTRELMRELNGGAYTRYVDNNFCGPDGYPLECIKDLLARAGKASCTLSEQ

LDFIDTKRGVYCCREHEHEIAWYTERSEKSYELQTPFEIKLAKKFDTFNGECPNFVFP

LNSIIKTIQPRVEKKKLDGFMGRIRSVYPVASPNECNQMCLSTLMKCDHCGETSWQTG

DFVKATCEFCGTENLTKEGATTCGYLPQNAVVKIYCPACHNSEVGPEHSLAEYHNESG

LKTILRKGGRTIAFGGCVFSYVGCHNKCAYWVPRASANIGCNHTGVVGEGSEGLNDNL

LEILQKEKVNINIVGDFKLNEEIAIILASFSASTSAFVETVKGLDYKAFKQIVESCGN

FKVTKGKAKKGAWNIGEQKSILSPLYAFASEAARVVRSIFSRTLETAQNSVRVLQKAA

ITILDGISQYSLRLIDAMMFTSDLATNNLVVMAYITGGVVQLTSQWLTNIFGTVYEKL

KPVLDWLEEKFKEGVEFLRDGWEIVKFISTCACEIVGGQIVTCAKEIKESVQTFFKLV

NKFLALCADSIIIGGAKLKALNLGETFVTHSKGLYRKCVKSREETGLLMPLKAPKEII

FLEGETLPTEVLTEEVVLKTGDLQPLEQPTSEAVEAPLVGTPVCINGLMLLEIKDTEK

YCALAPNMMVTNNTFTLKGGAPTKVTFGDDTVIEVQGYKSVNITFELDERIDKVLNER

CSAYTVELGTEVNEFACVVADAVIKTLQPVSELLTPLGIDLDEWSMATYYLFDESGEF

KLASHMYCSFYPPDEDEEEGDCEEEEFEPSTQYEYGTEDDYQGKPLEFGATSAALQPE

EEQEEDWLDDDSQQTVGQQDGSEDNQTTTIQTIVEVQPQLEMELTPVVQTIEVNSFSG

YLKLTDNVYIKNADIVEEAKKVKPTVVVNAANVYLKHGGGVAGALNKATNNAMQVESD

DYIATNGPLKVGGSCVLSGHNLAKHCLHVVGPNVNKGEDIQLLKSAYENFNQHEVLLA

PLLSAGIFGADPIHSLRVCVDTVRTNVYLAVFDKNLYDKLVSSFLEMKSEKQVEQKIA

EIPKEEVKPFITESKPSVEQRKQDDKKIKACVEEVTTTLEETKFLTENLLLYIDINGN

LHPDSATLVSDIDITFLKKDAPYIVGDVVQEGVLTAVVIPTKKAGGTTEMLAKALRKV

PTDNYITTYPGQGLNGYTVEEAKTVLKKCKSAFYILPSIISNEKQEILGTVSWNLREM

LAHAEETRKLMPVCVETKAIVSTIQRKYKGIKIQEGVVDYGARFYFYTSKTTVASLIN

TLNDLNETLVTMPLGYVTHGLNLEEAARYMRSLKVPATVSVSSPDAVTAYNGYLTSSS

KTPEEHFIETISLAGSYKDWSYSGQSTQLGIEFLKRGDKSVYYTSNPTTFHLDGEVIT

FDNLKTLLSLREVRTIKVFTTVDNINLHTQVVDMSMTYGQQFGPTYLDGADVTKIKPH

NSHEGKTFYVLPNDDTLRVEAFEYYHTTDPSFLGRYMSALNHTKKWKYPQVNGLTSIK

WADNNCYLATALLTLQQIELKFNPPALQDAYYRARAGEAANFCALILAYCNKTVGELG

DVRETMSYLFQHANLDSCKRVLNVVCKTCGQQQTTLKGVEAVMYMGTLSYEQFKKGVQ

IPCTCGKQATKYLVQQESPFVMMSAPPAQYELKHGTFTCASEYTGNYQCGHYKHITSK

ETLYCIDGALLTKSSEYKGPITDVFYKENSYTTTIKPVTYKLDGVVCTEIDPKLDNYY

KKDNSYFTEQPIDLVPNQPYPNASFDNFKFVCDNIKFADDLNQLTGYKKPASRELKVT

FFPDLNGDVVAIDYKHYTPSFKKGAKLLHKPIVWHVNNATNKATYKPNTWCIRCLWST

KPVETSNSFDVLKSEDAQGMDNLACEDLKPVSEEVVENPTIQKDVLECNVKTTEVVGD

IILKPANNIKITEEVGHTDLMAAYVDNSSLTIKKPNELSRVLGLKTLATHGLAAVNSV

PWDTIANYAKPFLNKVVSTTTNIVTRCLNRVCTNYMPYFFTLLLQLCTFTRSTNSRIK

ASMPTTIAKNTVKSVGKFCLEASFNYLKSPNFSKLINIIIWFLLLSVCLGSLIYSTAA

LGVLMSNLGMPSYCTGYREGYLNSTNVTIATYCTGSIPCSVCLSGLDSLDTYPSLETI

QITISSFKWDLTAFGLVAEWFLAYILFTRFFYVLGLAAIMQLFFSYFAVHFISNSWLM

WLIINLVQMAPISAMVRMYIFFASFYYVWKSYVHVVDGCNSSTCMMCYKRNRATRVEC

TTIVNGVRRSFYVYANGGKGFCKLHNWNCVNCDTFCAGSTFISDEVARDLSLQFKRPI

NPTDQSSYIVDSVTVKNGSIHLYFDKAGQKTYERHSLSHFVNLDNLRANNTKGSLPIN

VIVFDGKSKCEESSAKSASVYYSQLMCQPILLLDQALVSDVGDSAEVAVKMFDAYVNT

FSSTFNVPMEKLKTLVATAEAELAKNVSLDNVLSTFISAARQGFVDSDVETKDVVECL

KLSHQSDIEVTGDSCNNYMLTYNKVENMTPRDLGACIDCSARHINAQVAKSHNITLIW

NVKDFMSLSEQLRKQIRSAAKKNNLPFKLTCATTRQVVNVVTTKIALKGGKIVNNWLK

QLIKVTIVFLFVAAIFYLITPVHVMSKHTDFSSEIIGYKAIDGGVTRDIASTDTCFAN

KHADFDTWFSQRGGSYTNDKACPLIAAVITREVGFVVPGLPGTILRTTNGDFLHFLPR

VFSAVGNICYTPSKLIEYTDFATSACVLAAECTIFKDASGKPVPYCYDTNVLEGSVAY

ESLRPDTRYVLMDGSIIQFPNTYLEGSVRVVTTFDSEYCRHGTCERSEAGVCVSTSGR

WVLNNDYYRSLPGVFCGVDAVNLLTNMFTPLIQPIGALDISASIVAGGIVAIVVTCLA

YYFMRFRRAFGEYSHVVAFNTLLFLMSFTVLCLTPVYSFLPGVYSVIYLYLTFYLTND

VSFLAHIQWMVMFTPLVPFWITIAYIICISTKHFYWFFSNYLKRRVVFNGVSFSTFEE

AALCTFLLNKEMYLKLRSDVLLPLTQYNRYLALYNKYKYFSGAMDTTSYREAACCHLA

KALNDFSNSGSDVLYQPPQISITSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNGL

WLDDVVYCPRHVICTSEDMLNPNYEDLLIRKSNHNFLVQAGNVQLRVIGHSMQNCVLK

LKVDTANPKTPKYKFVRIQPGQTFSVLACYNGSPSGVYQCAMRHNFTIKGSFLNGSCG

SVGFNIDYDCVSFCYMHHMELPTGVHAGTDLEGNFYGPFVDRQTAQAAGTDTTITVNV

LAWLYAAVINGDRWFLNRFTTTLNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAVL

DMCASLKELLQNGMNGRTILGSALLEDEFTPFDVVRQCSGVTFQSAVKRTIKGTHHWL

LLTILTSLLVLVQSTQWSLFFFLYENAFLPFAMGIIAMSAFAMMFVKHKHAFLCLFLL

PSLATVAYFNMVYMPASWVMRIMTWLDMVDTSFKLKDCVMYASAVVLLILMTARTVYD

DGARRVWTLMNVLTLVYKVYYGNALDQAISMWALIISVTSNYSGVVTTVMFLARGVVF

MCVEYCPIFFITGNTLQCIMLVYCFLGYFCTCYFGLFCLLNRYFRLTLGVYDYLVSTQ

EFRYMNSQGLLPPKNSIDAFKLNIKLLGVGGKPCIKVATVQSKMSDVKCTSVVLLSVL

QQLRVESSSKLWAQCVQLHNDILLAKDTTEAFEKMVSLLSVLLSMQGAVDINKLCEEM

LDNRATLQAIASEFSSLPSYAAFATAQEAYEQAVANGDSEVVLKKLKKSLNVAKSEFD

RDAAMQRKLEKMADQAMTQMYKQARSEDKRAKVTSAMQTMLFTMLRKLDNDALNNIIN

NARDGCVPLNIIPLTTAAKLMVVIPDYNTYKNTCDGTTFTYASALWEIQQVVDADSKI

VQLSEISMDNSPNLAWPLIVTALRANSAVKLQNNELSPVALRQMSCAAGTTQTACTDD

NALAYYNTTKGGRFVLALLSDLQDLKWARFPKSDGTGTIYTELEPPCRFVTDTPKGPK

VKYLYFIKGLNNLNRGMVLGSLAATVRLQAGNATEVPANSTVLSFCAFAVDAAKAYKD

YLASGGQPITNCVKMLCTHTGTGQAITVTPEANMDQESFGGASCCLYCRCHIDHPNPK

GFCDLKGKYVQIPTTCANDPVGFTLKNTVCTVCGMWKGYGCSCDQLREPMLQSADAQS

FLNRVCGVSAARLTPCGTGTSTDVVYRAFDIYNDKVAGFAKFLKTNCCRFQEKDEDDN

LIDSYFVVKRHTFSNYQHEETIYNLLKDCPAVAKHDFFKFRIDGDMVPHISRQRLTKY

TMADLVYALRHFDEGNCDTLKEILVTYNCCDDDYFNKKDWYDFVENPDILRVYANLGE

RVRQALLKTVQFCDAMRNAGIVGVLTLDNQDLNGNWYDFGDFIQTTPGSGVPVVDSYY

SLLMPILTLTRALTAESHVDTDLTKPYIKWDLLKYDFTEERLKLFDRYFKYWDQTYHP

NCVNCLDDRCILHCANFNVLFSTVFPLTSFGPLVRKIFVDGVPFVVSTGYHFRELGVV

HNQDVNLHSSRLSFKELLVYAADPAMHAASGNLLLDKRTTCFSVAALTNNVAFQTVKP

GNFNKDFYDFAVSKGFFKEGSSVELKHFFFAQDGNAAISDYDYYRYNLPTMCDIRQLL

FVVEVVDKYFDCYDGGCINANQVIVNNLDKSAGFPFNKWGKARLYYDSMSYEDQDALF

AYTKRNVIPTITQMNLKYAISAKNRARTVAGVSICSTMTNRQFHQKLLKSIAATRGAT

VVIGTSKFYGGWHNMLKTVYSDVENPHLMGWDYPKCDRAMPNMLRIMASLVLARKHTT

CCSLSHRFYRLANECAQVLSEMVMCGGSLYVKPGGTSSGDATTAYANSVFNICQAVTA

NVNALLSTDGNKIADKYVRNLQHRLYECLYRNRDVDTDFVNEFYAYLRKHFSMMILSD

DAVVCFNSTYASQGLVASIKNFKSVLYYQNNVFMSEAKCWTETDLTKGPHEFCSQHTM

LVKQGDDYVYLPYPDPSRILGAGCFVDDIVKTDGTLMIERFVSLAIDAYPLTKHPNQE

YADVFHLYLQYIRKLHDELTGHMLDMYSVMLTNDNTSRYWEPEFYEAMYTPHTVLQAV

GACVLCNSQTSLRCGACIRRPFLCCKCCYDHVISTSHKLVLSVNPYVCNAPGCDVTDV

TQLYLGGMSYYCKSHKPPISFPLCANGQVFGLYKNTCVGSDNVTDFNAIATCDWTNAG

DYILANTCTERLKLFAAETLKATEETFKLSYGIATVREVLSDRELHLSWEVGKPRPPL

NRNYVFTGYRVTKNSKVQIGEYTFEKGDYGDAVVYRGTTTYKLNVGDYFVLTSHTVMP

LSAPTLVPQEHYVRITGLYPTLNISDEFSSNVANYQKVGMQKYSTLQGPPGTGKSHFA

IGLALYYPSARIVYTACSHAAVDALCEKALKYLPIDKCSRIIPARARVECFDKFKVNS

TLEQYVFCTVNALPETTADIVVFDEISMATNYDLSVVNARLRAKHYVYIGDPAQLPAP

RTLLTKGTLEPEYFNSVCRLMKTIGPDMFLGTCRRCPAEIVDTVSALVYDNKLKAHKD

KSAQCFKMFYKGVITHDVSSAINRPQIGVVREFLTRNPAWRKAVFISPYNSQNAVASK

ILGLPTQTVDSSQGSEYDYVIFTQTTETAHSCNVNRFNVAITRAKVGILCIMSDRDLY

DKLQFTSLEIPRRNVATLQAENVTGLFKDCSKVITGLHPTQAPTHLSVDTKFKTEGLC

VDVPGIPKDMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHAT

REAVGTNLPLQLGFSTGVNLVAVPTGYVDTPNNTDFSRVSAKPPPGDQFKHLIPLMYK

GLPWNVVRIKIVQMLSDTLKNLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDRR

ATCFSTASDTYACWHHSIGFDYVYNPFMIDVQQWGFTGNLQSNHDLYCQVHGNAHVAS

CDAIMTRCLAVHECFVKRVDWTIEYPIIGDELKINAACRKVQHMVVKAALLADKFPVL

HDIGNPKAIKCVPQADVEWKFYDAQPCSDKAYKIEELFYSYATHSDKFTDGVCLFWNC

NVDRYPANSIVCRFDTRVLSNLNLPGCDGGSLYVNKHAFHTPAFDKSAFVNLKQLPFF

YYSDSPCESHGKQVVSDIDYVPLKSATCITRCNLGGAVCRHHANEYRLYLDAYNMMIS

AGFSLWVYKQFDTYNLWNTFTRLQSLENVAFNVVNKGHFDGQQGEVPVSIINNTVYTK

VDGVDVELFENKTTLPVNVAFELWAKRNIKPVPEVKILNNLGVDIAANTVIWDYKRDA

PAHISTIGVCSMTDIAKKPTETICAPLTVFFDGRVDGQVDLFRNARNGVLITEGSVKG

LQPSVGPKQASLNGVTLIGEAVKTQFNYYKKVDGVVQQLPETYFTQSRNLQEFKPRSQ

MEIDFLELAMDEFIERYKLEGYAFEHIVYGDFSHSQLGGLHLLIGLAKRFKESPFELE

DFIPMDSTVKNYFITDAQTGSSKCVCSVIDLLLDDFVEIIKSQDLSVVSKVVKVTIDY

TEISFMLWCKDGHVETFYPKLQSSQAWQPGVAMPNLYKIQRMLLEKCDLQNYGDSATL

PKGIMMNVAKYTQLCQYLNTLTLAVPYNMRVIHFGAGSDKGVAPGTAVLRQWLPTGTL

LVDSDLNDFVSDADSTLIGDCATVHTANKWDLIISDMYDPKTKNVTKENDSKEGFFTY

ICGFIQQKLALGGSVAIKITEHSWNADLYKLMGHFAWWTAFVTNVNASSSEAFLIGCN

YLGKPREQIDGYVMHANYIFWRNTNPIQLSSYSLFDMSKFPLKLRGTAVMSLKEGQIN

DMILSLLSKGRLIIRENNRVVISSDVLVNN"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=1&to=180) 266..805

/gene="ORF1ab"

/product="leader protein"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=181&to=818) 806..2719

/gene="ORF1ab"

/product="nsp2"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=819&to=2762) 2720..8551

/gene="ORF1ab"

/product="nsp3"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=2763&to=3262) 8552..10051

/gene="ORF1ab"

/product="nsp4"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=3263&to=3568) 10052..10969

/gene="ORF1ab"

/product="3C-like proteinase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=3569&to=3855) 10970..11830

/gene="ORF1ab"

/product="nsp6"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=3856&to=3938) 11831..12079

/gene="ORF1ab"

/product="nsp7"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=3939&to=4136) 12080..12673

/gene="ORF1ab"

/product="nsp8"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=4137&to=4249) 12674..13012

/gene="ORF1ab"

/product="nsp9"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=4250&to=4388) 13013..13429

/gene="ORF1ab"

/product="nsp10"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=4389&to=5320) join(13430..13456,13456..16224)

/gene="ORF1ab"

/product="RNA-dependent RNA polymerase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=5321&to=5921) 16225..18027

/gene="ORF1ab"

/product="helicase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=5922&to=6448) 18028..19608

/gene="ORF1ab"

/product="3'-to-5' exonuclease"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=6449&to=6794) 19609..20646

/gene="ORF1ab"

/product="endoRNAse"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47158.2?from=6795&to=7092) 20647..21540

/gene="ORF1ab"

/product="2'-O-ribose methyltransferase"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=266&to=13471) 266..13471

/gene="ORF1ab"

/codon\_start=1

/product="ORF1a polyprotein"

/protein\_id="[UMX47157.1](https://www.ncbi.nlm.nih.gov/protein/2205856994)"

/translation="MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEVLSEARQ

HLKDGTCGLVEVEKGVLPQLEQPYVFIKRSDARTAPHGHVMVELVAELGGIQYGRSGE

TLGVLVPHVGEIPVAYRKVLLRKNGNKGAGGHSYGADLKSFDLGDELGTDPYEDFQEN

WNTKHSSGVTRELMRELNGGAYTRYVDNNFCGPDGYPLECIKDLLARAGKASCTLSEQ

LDFIDTKRGVYCCREHEHEIAWYTERSEKSYELQTPFEIKLAKKFDTFNGECPNFVFP

LNSIIKTIQPRVEKKKLDGFMGRIRSVYPVASPNECNQMCLSTLMKCDHCGETSWQTG

DFVKATCEFCGTENLTKEGATTCGYLPQNAVVKIYCPACHNSEVGPEHSLAEYHNESG

LKTILRKGGRTIAFGGCVFSYVGCHNKCAYWVPRASANIGCNHTGVVGEGSEGLNDNL

LEILQKEKVNINIVGDFKLNEEIAIILASFSASTSAFVETVKGLDYKAFKQIVESCGN

FKVTKGKAKKGAWNIGEQKSILSPLYAFASEAARVVRSIFSRTLETAQNSVRVLQKAA

ITILDGISQYSLRLIDAMMFTSDLATNNLVVMAYITGGVVQLTSQWLTNIFGTVYEKL

KPVLDWLEEKFKEGVEFLRDGWEIVKFISTCACEIVGGQIVTCAKEIKESVQTFFKLV

NKFLALCADSIIIGGAKLKALNLGETFVTHSKGLYRKCVKSREETGLLMPLKAPKEII

FLEGETLPTEVLTEEVVLKTGDLQPLEQPTSEAVEAPLVGTPVCINGLMLLEIKDTEK

YCALAPNMMVTNNTFTLKGGAPTKVTFGDDTVIEVQGYKSVNITFELDERIDKVLNER

CSAYTVELGTEVNEFACVVADAVIKTLQPVSELLTPLGIDLDEWSMATYYLFDESGEF

KLASHMYCSFYPPDEDEEEGDCEEEEFEPSTQYEYGTEDDYQGKPLEFGATSAALQPE

EEQEEDWLDDDSQQTVGQQDGSEDNQTTTIQTIVEVQPQLEMELTPVVQTIEVNSFSG

YLKLTDNVYIKNADIVEEAKKVKPTVVVNAANVYLKHGGGVAGALNKATNNAMQVESD

DYIATNGPLKVGGSCVLSGHNLAKHCLHVVGPNVNKGEDIQLLKSAYENFNQHEVLLA

PLLSAGIFGADPIHSLRVCVDTVRTNVYLAVFDKNLYDKLVSSFLEMKSEKQVEQKIA

EIPKEEVKPFITESKPSVEQRKQDDKKIKACVEEVTTTLEETKFLTENLLLYIDINGN

LHPDSATLVSDIDITFLKKDAPYIVGDVVQEGVLTAVVIPTKKAGGTTEMLAKALRKV

PTDNYITTYPGQGLNGYTVEEAKTVLKKCKSAFYILPSIISNEKQEILGTVSWNLREM

LAHAEETRKLMPVCVETKAIVSTIQRKYKGIKIQEGVVDYGARFYFYTSKTTVASLIN

TLNDLNETLVTMPLGYVTHGLNLEEAARYMRSLKVPATVSVSSPDAVTAYNGYLTSSS

KTPEEHFIETISLAGSYKDWSYSGQSTQLGIEFLKRGDKSVYYTSNPTTFHLDGEVIT

FDNLKTLLSLREVRTIKVFTTVDNINLHTQVVDMSMTYGQQFGPTYLDGADVTKIKPH

NSHEGKTFYVLPNDDTLRVEAFEYYHTTDPSFLGRYMSALNHTKKWKYPQVNGLTSIK

WADNNCYLATALLTLQQIELKFNPPALQDAYYRARAGEAANFCALILAYCNKTVGELG

DVRETMSYLFQHANLDSCKRVLNVVCKTCGQQQTTLKGVEAVMYMGTLSYEQFKKGVQ

IPCTCGKQATKYLVQQESPFVMMSAPPAQYELKHGTFTCASEYTGNYQCGHYKHITSK

ETLYCIDGALLTKSSEYKGPITDVFYKENSYTTTIKPVTYKLDGVVCTEIDPKLDNYY

KKDNSYFTEQPIDLVPNQPYPNASFDNFKFVCDNIKFADDLNQLTGYKKPASRELKVT

FFPDLNGDVVAIDYKHYTPSFKKGAKLLHKPIVWHVNNATNKATYKPNTWCIRCLWST

KPVETSNSFDVLKSEDAQGMDNLACEDLKPVSEEVVENPTIQKDVLECNVKTTEVVGD

IILKPANNIKITEEVGHTDLMAAYVDNSSLTIKKPNELSRVLGLKTLATHGLAAVNSV

PWDTIANYAKPFLNKVVSTTTNIVTRCLNRVCTNYMPYFFTLLLQLCTFTRSTNSRIK

ASMPTTIAKNTVKSVGKFCLEASFNYLKSPNFSKLINIIIWFLLLSVCLGSLIYSTAA

LGVLMSNLGMPSYCTGYREGYLNSTNVTIATYCTGSIPCSVCLSGLDSLDTYPSLETI

QITISSFKWDLTAFGLVAEWFLAYILFTRFFYVLGLAAIMQLFFSYFAVHFISNSWLM

WLIINLVQMAPISAMVRMYIFFASFYYVWKSYVHVVDGCNSSTCMMCYKRNRATRVEC

TTIVNGVRRSFYVYANGGKGFCKLHNWNCVNCDTFCAGSTFISDEVARDLSLQFKRPI

NPTDQSSYIVDSVTVKNGSIHLYFDKAGQKTYERHSLSHFVNLDNLRANNTKGSLPIN

VIVFDGKSKCEESSAKSASVYYSQLMCQPILLLDQALVSDVGDSAEVAVKMFDAYVNT

FSSTFNVPMEKLKTLVATAEAELAKNVSLDNVLSTFISAARQGFVDSDVETKDVVECL

KLSHQSDIEVTGDSCNNYMLTYNKVENMTPRDLGACIDCSARHINAQVAKSHNITLIW

NVKDFMSLSEQLRKQIRSAAKKNNLPFKLTCATTRQVVNVVTTKIALKGGKIVNNWLK

QLIKVTIVFLFVAAIFYLITPVHVMSKHTDFSSEIIGYKAIDGGVTRDIASTDTCFAN

KHADFDTWFSQRGGSYTNDKACPLIAAVITREVGFVVPGLPGTILRTTNGDFLHFLPR

VFSAVGNICYTPSKLIEYTDFATSACVLAAECTIFKDASGKPVPYCYDTNVLEGSVAY

ESLRPDTRYVLMDGSIIQFPNTYLEGSVRVVTTFDSEYCRHGTCERSEAGVCVSTSGR

WVLNNDYYRSLPGVFCGVDAVNLLTNMFTPLIQPIGALDISASIVAGGIVAIVVTCLA

YYFMRFRRAFGEYSHVVAFNTLLFLMSFTVLCLTPVYSFLPGVYSVIYLYLTFYLTND

VSFLAHIQWMVMFTPLVPFWITIAYIICISTKHFYWFFSNYLKRRVVFNGVSFSTFEE

AALCTFLLNKEMYLKLRSDVLLPLTQYNRYLALYNKYKYFSGAMDTTSYREAACCHLA

KALNDFSNSGSDVLYQPPQISITSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNGL

WLDDVVYCPRHVICTSEDMLNPNYEDLLIRKSNHNFLVQAGNVQLRVIGHSMQNCVLK

LKVDTANPKTPKYKFVRIQPGQTFSVLACYNGSPSGVYQCAMRHNFTIKGSFLNGSCG

SVGFNIDYDCVSFCYMHHMELPTGVHAGTDLEGNFYGPFVDRQTAQAAGTDTTITVNV

LAWLYAAVINGDRWFLNRFTTTLNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAVL

DMCASLKELLQNGMNGRTILGSALLEDEFTPFDVVRQCSGVTFQSAVKRTIKGTHHWL

LLTILTSLLVLVQSTQWSLFFFLYENAFLPFAMGIIAMSAFAMMFVKHKHAFLCLFLL

PSLATVAYFNMVYMPASWVMRIMTWLDMVDTSFKLKDCVMYASAVVLLILMTARTVYD

DGARRVWTLMNVLTLVYKVYYGNALDQAISMWALIISVTSNYSGVVTTVMFLARGVVF

MCVEYCPIFFITGNTLQCIMLVYCFLGYFCTCYFGLFCLLNRYFRLTLGVYDYLVSTQ

EFRYMNSQGLLPPKNSIDAFKLNIKLLGVGGKPCIKVATVQSKMSDVKCTSVVLLSVL

QQLRVESSSKLWAQCVQLHNDILLAKDTTEAFEKMVSLLSVLLSMQGAVDINKLCEEM

LDNRATLQAIASEFSSLPSYAAFATAQEAYEQAVANGDSEVVLKKLKKSLNVAKSEFD

RDAAMQRKLEKMADQAMTQMYKQARSEDKRAKVTSAMQTMLFTMLRKLDNDALNNIIN

NARDGCVPLNIIPLTTAAKLMVVIPDYNTYKNTCDGTTFTYASALWEIQQVVDADSKI

VQLSEISMDNSPNLAWPLIVTALRANSAVKLQNNELSPVALRQMSCAAGTTQTACTDD

NALAYYNTTKGGRFVLALLSDLQDLKWARFPKSDGTGTIYTELEPPCRFVTDTPKGPK

VKYLYFIKGLNNLNRGMVLGSLAATVRLQAGNATEVPANSTVLSFCAFAVDAAKAYKD

YLASGGQPITNCVKMLCTHTGTGQAITVTPEANMDQESFGGASCCLYCRCHIDHPNPK

GFCDLKGKYVQIPTTCANDPVGFTLKNTVCTVCGMWKGYGCSCDQLREPMLQSADAQS

FLNGFAV"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=1&to=180) 266..805

/gene="ORF1ab"

/product="leader protein"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=181&to=818) 806..2719

/gene="ORF1ab"

/product="nsp2"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=819&to=2762) 2720..8551

/gene="ORF1ab"

/product="nsp3"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=2763&to=3262) 8552..10051

/gene="ORF1ab"

/product="nsp4"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=3263&to=3568) 10052..10969

/gene="ORF1ab"

/product="3C-like proteinase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=3569&to=3855) 10970..11830

/gene="ORF1ab"

/product="nsp6"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=3856&to=3938) 11831..12079

/gene="ORF1ab"

/product="nsp7"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=3939&to=4136) 12080..12673

/gene="ORF1ab"

/product="nsp8"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=4137&to=4249) 12674..13012

/gene="ORF1ab"

/product="nsp9"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=4250&to=4388) 13013..13429

/gene="ORF1ab"

/product="nsp10"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UMX47157.1?from=4389&to=4401) 13430..13468

/gene="ORF1ab"

/product="nsp11"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=13464&to=13491) 13464..13491

/gene="ORF1ab"

/note="Coronavirus frameshifting stimulation element

stem-loop 1"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=13476&to=13530) 13476..13530

/gene="ORF1ab"

/note="Coronavirus frameshifting stimulation element

stem-loop 2"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=21551&to=25363) 21551..25363

/gene="S"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=21551&to=25363) 21551..25363

/gene="S"

/codon\_start=1

/product="surface glycoprotein"

/protein\_id="[UNR28983.1](https://www.ncbi.nlm.nih.gov/protein/2211578150)"

/translation="MFVFLVLLPLVSSQCVNLTTRTQLPPAYTNSFTRGVYYPDKVFR

SSVLHSTQDLFLPFFSNVTWFHVISGTNGTKRFDNPVLPFNDGVYFASIEKSNIIRGW

IFGTTLDSKTQSLLIVNNATNVVIKVCEFQFCNDPFLDHKNNKSWMESEFRVYSSANN

CTFEYVSQPFLMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPIIVREPEDLPQGFS

ALEPLVDLPIGINITRFQTLLALHRSYLTPGDSSSGWTAGAAAYYVGYLQPRTFLLKY

NENGTITDAVDCALDPLSETKCTLKSFTVEKGIYQTSNFRVQPTESIVRFPNITNLCP

FDEVFNATRFASVYAWNRKRISNCVADYSVLYNLAPFFTFKCYGVSPTKLNDLCFTNV

YADSFVIRGDEVRQIAPGQTGNIADYNYKLPDDFTGCVIAWNSNKLDSKVSGNYNYLY

RLFRKSNLKPFERDISTEIYQAGNKPCNGVAGFNCYFPLQSYSFRPTYGVGHQPYRVV

VLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLKGTGVLTESNKKFLPFQQFGRDI

ADTTDAVRDPQTLEILDITPCSFGGVSVITPGTNTSNQVAVLYQGVNCTEVPVAIHAD

QLTPTWRVYSTGSNVFQTRAGCLIGAEYVNNSYECDIPIGAGICASYQTQTKSHRRAR

SVASQSIIAYTMSLGAENSVAYSNNSIAIPTNFTISVTTEILPVSMTKTSVDCTMYIC

GDSTECSNLLLQYGSFCTQLKRALTGIAVEQDKNTQEVFAQVKQIYKTPPIKYFGGFN

FSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLICAQKFKGLT

VLPPLLTDEMIAQYTSALLAGTITSGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLY

ENQKLIANQFNSAIGKIQDSLSSTASALGKLQDVVNHNAQALNTLVKQLSSKFGAISS

VLNDIFSRLDKVEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMSECV

LGQSKRVDFCGKGYHLMSFPQSAPHGVVFLHVTYVPAQEKNFTTAPAICHDGKAHFPR

EGVFVSNGTHWFVTQRNFYEPQIITTDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFK

EELDKYFKNHTSPDVDLGDISGINASVVNIQKEIDRLNEVAKNLNESLIDLQELGKYE

QYIKWPWYIWLGFIAGLIAIVMVTIMLCCMTSCCSCLKGCCSCGSCCKFDEDDSEPVL

KGVKLHYT"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=25372&to=26199) 25372..26199

/gene="ORF3a"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=25372&to=26199) 25372..26199

/gene="ORF3a"

/codon\_start=1

/product="ORF3a protein"

/protein\_id="[UNR28984.1](https://www.ncbi.nlm.nih.gov/protein/2211578151)"

/translation="MDLFMRIFTIGTVTLKQGEIKDATPSDFVRATATIPIQASLPFG

WLIVGVALLAVFQSASKIITLKKRWQLALSKGVHFVCNLLLLFVTVYSHLLLVAAGLE

APFLYLYALVYFLQSINFVRIIMRLWLCWKCRSKNPLLYDANYFLCWHTNCYDYCIPY

NSVTSSIVITSGDGTTSPISEHDYQIGGYTEKWESGVKDCVVLHSYFTSDYYQLYSTQ

LSTDTGVEHVTFFIYNKIVDEPEEHVQIHTIDGSSGVVNPVMEPIYDEPTTTTSVPL"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=26224&to=26451) 26224..26451

/gene="E"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=26224&to=26451) 26224..26451

/gene="E"

/codon\_start=1

/product="envelope protein"

/protein\_id="[UNR28985.1](https://www.ncbi.nlm.nih.gov/protein/2211578152)"

/translation="MYSFVSEEIGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCC

NIVNVSLVKPSFYVYSRVKNLNSSRVPDLLV"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=26502&to=27170) 26502..27170

/gene="M"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=26502&to=27170) 26502..27170

/gene="M"

/codon\_start=1

/product="membrane glycoprotein"

/protein\_id="[UNR28986.1](https://www.ncbi.nlm.nih.gov/protein/2211578153)"

/translation="MAGSNGTITVEELKKLLEEWNLVIGFLFLTWICLLQFAYANRNR

FLYIIKLIFLWLLWPVTLTCFVLAAVYRINWITGGIAIAMACLVGLMWLSYFIASFRL

FARTRSMWSFNPETNILLNVPLHGTILTRPLLESELVIGAVILRGHLRIAGHHLGRCD

IKDLPKEITVATSRTLSYYKLGASQRVAGDSGFAAYSRYRIGNYKLNTDHSSSSDNIA

LLVQ"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27181&to=27366) 27181..27366

/gene="ORF6"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27181&to=27366) 27181..27366

/gene="ORF6"

/codon\_start=1

/product="ORF6 protein"

/protein\_id="[UNR28987.1](https://www.ncbi.nlm.nih.gov/protein/2211578154)"

/translation="MFHLVDFQVTIAEILLIIMRTFKVSIWNLDYIINLIIKNLSKSL

TENKYSQLDEEQPMEID"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27373&to=27738) 27373..27738

/gene="ORF7a"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27373&to=27738) 27373..27738

/gene="ORF7a"

/codon\_start=1

/product="ORF7a protein"

/protein\_id="[UNR28988.1](https://www.ncbi.nlm.nih.gov/protein/2211578155)"

/translation="MKIILFLALITLATCELYHYQECVRGTTVLLKEPCSSGTYEGNS

PFHPLADNKFALTCFSTQFAFACPDGVKHVYQLRARSVSPKLFIRQEEVQELYSPIFL

IVAAIVFITLCFTLKRKTE"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27735&to=27866) 27735..27866

/gene="ORF7b"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27735&to=27866) 27735..27866

/gene="ORF7b"

/codon\_start=1

/product="ORF7b"

/protein\_id="[UNR28989.1](https://www.ncbi.nlm.nih.gov/protein/2211578156)"

/translation="MIELSLIDFYLCFLAFLLFLVLIMLIIFWFSLELQDHNETCHA"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27873&to=28238) 27873..28238

/gene="ORF8"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=27873&to=28238) 27873..28238

/gene="ORF8"

/codon\_start=1

/product="ORF8 protein"

/protein\_id="[UNR28990.1](https://www.ncbi.nlm.nih.gov/protein/2211578157)"

/translation="MKFLVFLGIITTVAAFHQECSLQSCTQHQPYVVDDPCPIHFYSK

WYIRVGARKSAPLIELCVDEAGSKSPIQYIDIGNYTVSCLPFTINCQEPKLGSLVVRC

SFYEDFLEYHDVRVVLDFI"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=28253&to=29503) 28253..29503

/gene="N"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=28253&to=29503) 28253..29503

/gene="N"

/codon\_start=1

/product="nucleocapsid phosphoprotein"

/protein\_id="[UNR28991.1](https://www.ncbi.nlm.nih.gov/protein/2211578158)"

/translation="MSDNGPQNQRNALRITFGGPSDSTGSNQNGGARSKQRRPQGLPN

NTASWFTALTQHGKEDLKFPRGQGVPINTNSSPDDQIGYYRRATRRIRGGDGKMKDLS

PRWYFYYLGTGPEAGLPYGANKDGIIWVATEGALNTPKDHIGTRNPANNAAIVLQLPQ

GTTLPKGFYAEGSRGGSQASSRSSSRSRNSSRNSTPGSSKRTSPARMAGNGGDAALAL

LLLDRLNQLESKMSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKAYNVTQAFGRRGP

EQTQGNFGDQELIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTYTGAI

KLDDKDPNFKDQVILLNKHIDAYKTFPPTEPKKDKKKKADETQALPQRQKKQQTVTLL

PAADLDDFSKQLQQSMSSADSTQA"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=29528&to=29644) 29528..29644

/gene="ORF10"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=29528&to=29644) 29528..29644

/gene="ORF10"

/codon\_start=1

/product="ORF10 protein"

/protein\_id="[UNR28992.1](https://www.ncbi.nlm.nih.gov/protein/2211578159)"

/translation="MGYINVFAFPFTIYSLLLCRMNSRNYIAQVDVVNFNLT"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=29579&to=29614) 29579..29614

/gene="ORF10"

/note="Coronavirus 3' UTR pseudoknot stem-loop 1"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=29599&to=29627) 29599..29627

/gene="ORF10"

/note="Coronavirus 3' UTR pseudoknot stem-loop 2"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/OM945690.2?from=29698&to=29738) 29698..29738

/note="Coronavirus 3' stem-loop II-like motif (s2m)"

ORIGIN

1 attaaaggtt tataccttcc caggtaacaa accaactaac tttcgatctc ttgtagatct

61 gttctctaaa cgaactttaa aatctgtgtg gctgtcactc ggctgcatgc ttagtgcact

121 cacgcagtat aattaataac taattactgt cgttgacagg acacgagtaa ctcgtctatc

181 ttctgcaggc tgcttacggt ttcgtccgtg ttgcagccga tcatcagcac atctaggttt

241 tgtccgggtg tgaccgaaag gtaagatgga gagccttgtc cctggtttca acgagaaaac

301 acacgtccaa ctcagtttgc ctgttttaca ggttcgcgac gtgctcgtac gtggctttgg

361 agactccgtg gaggaggtct tatcagaggc acgtcaacat cttaaagatg gcacttgtgg

421 cttagtagaa gttgaaaaag gcgttttgcc tcaacttgaa cagccctatg tgttcatcaa

481 acgttcggat gctcgaactg cacctcatgg tcatgttatg gttgagctgg tagcagaact

541 cggaggcatt cagtacggtc gtagtggtga gacacttggt gtccttgtcc ctcatgtggg

601 cgaaatacca gtggcttacc gcaaggttct tcttcgtaag aacggtaata aaggagctgg

661 tggccatagt tacggcgccg atctaaagtc atttgactta ggcgacgagc ttggcactga

721 tccttatgaa gattttcaag aaaactggaa cactaaacat agcagtggtg ttacccgtga

781 actcatgcgt gagcttaacg gaggggcata cactcgctat gtcgataaca acttctgtgg

841 ccctgatggc taccctcttg agtgcattaa agaccttcta gcacgtgctg gtaaagcttc

901 atgcactttg tccgaacaac tggactttat tgacactaag aggggtgtat actgctgccg

961 tgaacatgag catgaaattg cttggtacac ggaacgttct gaaaagagct atgaattgca

1021 gacacctttt gaaattaaat tggcaaagaa atttgacacc ttcaatgggg aatgtccaaa

1081 ttttgtattt cccttaaatt ccataatcaa gactattcaa ccaagggttg aaaagaaaaa

1141 gcttgatggc tttatgggta gaattcgatc tgtctatcca gttgcgtcac caaatgaatg

1201 caaccaaatg tgcctttcaa ctctcatgaa gtgtgatcat tgtggtgaaa cttcatggca

1261 gacgggcgat tttgttaaag ccacttgcga attttgtggc actgagaatt tgactaaaga

1321 aggtgccact acttgtggtt acttacccca aaatgctgtt gttaaaattt attgtccagc

1381 atgtcacaat tcagaagtag gacctgagca tagtcttgcc gaataccata atgaatctgg

1441 cttgaaaacc attcttcgta agggtggtcg cactattgcc tttggaggct gtgtgttctc

1501 ttatgttggt tgccataaca agtgtgccta ttgggttcca cgtgctagcg ctaacatagg

1561 ttgtaaccat acaggtgttg ttggagaagg ttccgaaggt cttaatgaca accttcttga

1621 aatactccaa aaagagaaag tcaacatcaa tattgttggt gactttaaac ttaatgaaga

1681 gatcgccatt attttggcat ctttttctgc ttccacaagt gcttttgtgg aaactgtgaa

1741 aggtttggat tataaagcat tcaaacaaat tgttgaatcc tgtggtaatt ttaaagttac

1801 aaaaggaaaa gctaaaaaag gtgcctggaa tattggtgaa cagaaatcaa tactgagtcc

1861 tctttatgca tttgcatcag aggctgctcg tgttgtacga tcaattttct cccgcactct

1921 tgaaactgct caaaattctg tgcgtgtttt acagaaggcc gctataacaa tactagatgg

1981 aatttcacag tattcactga gactcattga tgctatgatg ttcacatctg atttggctac

2041 taacaatcta gttgtaatgg cctacattac aggtggtgtt gttcagttga cttcgcagtg

2101 gctaactaac atctttggca ctgtttatga aaaactcaaa cccgtccttg attggcttga

2161 agagaagttt aaggaaggtg tagagtttct tagagacggt tgggaaattg ttaaatttat

2221 ctcaacctgt gcttgtgaaa ttgtcggtgg acaaattgtc acctgtgcaa aggaaattaa

2281 ggagagtgtt cagacattct ttaagcttgt aaataaattt ttggctttgt gtgctgactc

2341 tatcattatt ggtggagcta aacttaaagc cttgaattta ggtgaaacat ttgtcacgca

2401 ctcaaaggga ttgtacagaa agtgtgttaa atccagagaa gaaactggcc tactcatgcc

2461 tctaaaagcc ccaaaagaaa ttatcttctt agagggagaa acacttccca cagaagtgtt

2521 aacagaggaa gttgtcttga aaactggtga tttacaacca ttagaacaac ctactagtga

2581 agctgttgaa gctccattgg ttggtacacc agtttgtatt aacgggctta tgttgctcga

2641 aatcaaagac acagaaaagt actgtgccct tgcacctaat atgatggtaa caaacaatac

2701 cttcacactc aaaggcggtg caccaacaaa ggttactttt ggtgatgaca ctgtgataga

2761 agtgcaaggt tacaagagtg tgaatatcac ttttgaactt gatgaaagga ttgataaagt

2821 acttaatgag aggtgctctg cctatacagt tgaactcggt acagaagtaa atgagttcgc

2881 ctgtgttgtg gcagatgctg tcataaaaac tttgcaacca gtatctgaat tacttacacc

2941 actgggcatt gatttagatg agtggagtat ggctacatac tacttatttg atgagtctgg

3001 tgagtttaaa ttggcttcac atatgtattg ttctttttac cctccagatg aggatgaaga

3061 agaaggtgat tgtgaagaag aagagtttga gccatcaact caatatgagt atggtactga

3121 agatgattac caaggtaaac ctttggaatt tggtgccact tctgctgctc ttcaacctga

3181 agaagagcaa gaagaagatt ggttagatga tgatagtcaa caaactgttg gtcaacaaga

3241 cggcagtgag gacaatcaga caactactat tcaaacaatt gttgaggttc aacctcaatt

3301 agagatggaa cttacaccag ttgttcagac tattgaagtg aatagtttta gtggttattt

3361 aaaacttact gacaatgtat acattaaaaa tgcagacatt gtggaagaag ctaaaaaggt

3421 aaaaccaaca gtggttgtta atgcagccaa tgtttacctt aaacatggag gaggtgttgc

3481 aggagcctta aataaggcta ctaacaatgc catgcaagtt gaatctgatg attacatagc

3541 tactaatgga ccacttaaag tgggtggtag ttgtgtttta agcggacaca atcttgctaa

3601 acactgtctt catgttgtcg gcccaaatgt taacaaaggt gaagacattc aacttcttaa

3661 gagtgcttat gaaaatttta atcagcacga agttctactt gcaccattat tatcagctgg

3721 tatttttggt gctgacccta tacattcttt aagagtttgt gtagatactg ttcgcacaaa

3781 tgtctactta gctgtctttg ataaaaatct ctatgacaaa cttgtttcaa gctttttgga

3841 aatgaagagt gaaaagcaag ttgaacaaaa gatcgctgag attcctaaag aggaagttaa

3901 gccatttata actgaaagta aaccttcagt tgaacagaga aaacaagatg ataagaaaat

3961 caaagcttgt gttgaagaag ttacaacaac tctggaagaa actaagttcc tcacagaaaa

4021 cttgttactt tatattgaca ttaatggcaa tcttcatcca gattctgcca ctcttgttag

4081 tgacattgac atcactttct taaagaaaga tgctccatat atagtgggtg atgttgttca

4141 agagggtgtt ttaactgctg tggttatacc tactaaaaag gctggtggca ctactgaaat

4201 gctagcgaaa gctttgagaa aagtgccaac agacaattat ataaccactt acccgggtca

4261 gggtttaaat ggttacactg tagaggaggc aaagacagtg cttaaaaagt gtaaaagtgc

4321 cttttacatt ctaccatcta ttatctctaa tgagaagcaa gaaattcttg gaactgtttc

4381 ttggaatttg cgagaaatgc ttgcacatgc agaagaaaca cgcaaattaa tgcctgtctg

4441 tgtggaaact aaagccatag tttcaactat acagcgtaaa tataagggta ttaaaataca

4501 agagggtgtg gttgattatg gtgctagatt ttacttttac accagtaaaa caactgtagc

4561 gtcacttatc aacacactta acgatctaaa tgaaactctt gttacaatgc cacttggcta

4621 tgtaacacat ggcttaaatt tggaagaagc tgctcggtat atgagatctc tcaaagtgcc

4681 agctacagtt tctgtttctt cacctgatgc tgttacagcg tataatggtt atcttacttc

4741 ttcttctaaa acacctgaag aacattttat tgaaaccatc tcacttgctg gttcctataa

4801 agattggtcc tattctggac aatctacaca actaggtata gaatttctta agagaggtga

4861 taaaagtgta tattacacta gtaatcctac cacattccac ctagatggtg aagttatcac

4921 ctttgacaat cttaagacac ttctttcttt gagagaagtg aggactatta aggtgtttac

4981 aacagtagac aacattaacc tccacacgca agttgtggac atgtcaatga catatggaca

5041 acagtttggt ccaacttatt tggatggagc tgatgttact aaaataaaac ctcataattc

5101 acatgaaggt aaaacatttt atgttttacc taatgatgac actctacgtg ttgaggcttt

5161 tgagtactac cacacaactg atcctagttt tctgggtagg tacatgtcag cattaaatca

5221 cactaaaaag tggaaatacc cacaagttaa tggtttaact tctattaaat gggcagataa

5281 caactgttat cttgccactg cattgttaac actccaacaa atagagttga agtttaatcc

5341 acctgctcta caagatgctt attacagagc aagggctggt gaagcggcta acttttgtgc

5401 acttatctta gcctactgta ataagacagt aggtgagtta ggtgatgtta gagaaacaat

5461 gagttacttg tttcaacatg ccaatttaga ttcttgcaaa agagtcttga acgttgtgtg

5521 taaaacttgt ggacaacagc agacaaccct taagggtgta gaagctgtta tgtacatggg

5581 cacactttct tatgaacaat ttaagaaagg tgttcagata ccttgtacgt gtggtaaaca

5641 agctacaaaa tatctagtac aacaggagtc accttttgtt atgatgtcag caccacctgc

5701 tcagtatgaa cttaagcatg gtacatttac ttgtgctagt gagtacactg gtaattacca

5761 gtgtggtcac tataaacata taacttctaa agaaactttg tattgcatag acggtgcttt

5821 acttacaaag tcctcagaat acaaaggtcc tattacggat gttttctaca aagaaaacag

5881 ttacacaaca accataaaac cagttactta taaattggat ggtgttgttt gtacagaaat

5941 tgaccctaag ttggacaatt attataagaa agacaattct tatttcacag agcaaccaat

6001 tgatcttgta ccaaaccaac catatccaaa cgcaagcttc gataatttta agtttgtatg

6061 tgataatatc aaatttgctg atgatttaaa ccagttaact ggttataaga aacctgcttc

6121 aagagagctt aaagttacat ttttccctga cttaaatggt gatgtggtgg ctattgatta

6181 taaacactac acaccctctt ttaagaaagg agctaaattg ttacataaac ctattgtttg

6241 gcatgttaac aatgcaacta ataaagccac gtataaacca aatacctggt gtatacgttg

6301 tctttggagc acaaaaccag ttgaaacatc aaattcgttt gatgtactga agtcagagga

6361 cgcgcaggga atggataatc ttgcctgcga agatctaaaa ccagtctctg aagaagtagt

6421 ggaaaatcct accatacaga aagacgttct tgagtgtaat gtgaaaacta ccgaagttgt

6481 aggagacatt atacttaaac cagcaaataa tataaaaatt acagaagagg ttggccacac

6541 agatctaatg gctgcttatg tagacaattc tagtcttact attaagaaac ctaatgaatt

6601 atctagagta ttaggtttga aaacccttgc tactcatggt ttagctgctg ttaatagtgt

6661 cccttgggat actatagcta attatgctaa gccttttctt aacaaagttg ttagtacaac

6721 tactaacata gttacacggt gtttaaaccg tgtttgtact aattatatgc cttatttctt

6781 tactttattg ctacaattgt gtacttttac tagaagtaca aattctagaa ttaaagcatc

6841 tatgccgact actatagcaa agaatactgt taagagtgtc ggtaaatttt gtctagaggc

6901 ttcatttaat tatttgaagt cacctaattt ttctaaactg ataaatatta taatttggtt

6961 tttactatta agtgtttgcc taggttcttt aatctactca accgctgctt taggtgtttt

7021 aatgtctaat ttaggcatgc cttcttactg tactggttac agagaaggct atttgaactc

7081 tactaatgtc actattgcaa cctactgtac tggttctata ccttgtagtg tttgtcttag

7141 tggtttagat tctttagaca cctatccttc tttagaaact atacaaatta ccatttcatc

7201 ttttaaatgg gatttaactg cttttggctt agttgcagag tggtttttgg catatattct

7261 tttcactagg tttttctatg tacttggatt ggctgcaatc atgcaattgt ttttcagcta

7321 ttttgcagta cattttatta gtaattcttg gcttatgtgg ttaataatta atcttgtaca

7381 aatggccccg atttcagcta tggttagaat gtacatcttc tttgcatcat tttattatgt

7441 atggaaaagt tatgtgcatg ttgtagacgg ttgtaattca tcaacttgta tgatgtgtta

7501 caaacgtaat agagcaacaa gagtcgaatg tacaactatt gttaatggtg ttagaaggtc

7561 cttttatgtc tatgctaatg gaggtaaagg cttttgcaaa ctacacaatt ggaattgtgt

7621 taattgtgat acattctgtg ctggtagtac atttattagt gatgaagttg cgagagactt

7681 gtcactacag tttaaaagac caataaatcc tactgaccag tcttcttaca tcgttgatag

7741 tgttacagtg aagaatggtt ccatccatct ttactttgat aaagctggtc aaaagactta

7801 tgaaagacat tctctctctc attttgttaa cttagacaac ctgagagcta ataacactaa

7861 aggttcattg cctattaatg ttatagtttt tgatggtaaa tcaaaatgtg aagaatcatc

7921 tgcaaaatca gcgtctgttt actacagtca gcttatgtgt caacctatac tgttactaga

7981 tcaggcatta gtgtctgatg ttggtgatag tgcggaagtt gcagttaaaa tgtttgatgc

8041 ttacgttaat acgttttcat caacttttaa cgtaccaatg gaaaaactca aaacactagt

8101 tgcaactgca gaagctgaac ttgcaaagaa tgtgtcctta gacaatgtct tatctacttt

8161 tatttcagca gctcggcaag ggtttgttga ttcagatgta gaaactaaag atgttgttga

8221 atgtcttaaa ttgtcacatc aatctgacat agaagttact ggcgatagtt gtaataacta

8281 tatgctcacc tataacaaag ttgaaaacat gacaccccgt gaccttggtg cttgtattga

8341 ctgtagtgcg cgtcatatta atgcgcaggt agcaaaaagt cacaacatta ctttgatatg

8401 gaacgttaaa gatttcatgt cattgtctga acaactacga aaacaaatac gtagtgctgc

8461 taaaaagaat aacttacctt ttaagttgac atgtgcaact actagacaag ttgttaatgt

8521 tgtaacaaca aagatagcac ttaagggtgg taaaattgtt aataattggt tgaagcagtt

8581 aattaaagtt acaattgtgt tcctttttgt tgctgctatt ttctatttaa taacacctgt

8641 tcatgtcatg tctaaacata ctgacttttc aagtgaaatc ataggataca aggctattga

8701 tggtggtgtc actcgtgaca tagcatctac agatacttgt tttgctaaca aacatgctga

8761 ttttgacaca tggtttagcc agcgtggtgg tagttatact aatgacaaag cttgcccatt

8821 gattgctgca gtcataacaa gagaagtggg ttttgtcgtg cctggtttgc ctggcacgat

8881 attacgcaca actaatggtg actttttgca tttcttacct agagttttta gtgcagttgg

8941 taacatctgt tacacaccat caaaacttat agagtacact gactttgcaa catcagcttg

9001 tgttttggct gctgaatgta caatttttaa agatgcttct ggtaagccag taccatattg

9061 ttatgatacc aatgtactag aaggttctgt tgcttatgaa agtttacgcc ctgacacacg

9121 ttatgtgctc atggatggct ctattattca atttcctaac acctaccttg aaggttctgt

9181 tagagtggta acaacttttg attctgagta ctgtaggcac ggcacttgtg aaagatcaga

9241 agctggtgtt tgtgtatcta ctagtggtag atgggtactt aacaatgatt attacagatc

9301 tttaccagga gttttctgtg gtgtagatgc tgtaaattta cttactaata tgtttacacc

9361 actaattcaa cctattggtg ctttggacat atcagcatct atagtagctg gtggtattgt

9421 agctatcgta gtaacatgcc ttgcctacta ttttatgagg tttagaagag cttttggtga

9481 atacagtcat gtagttgcct ttaatacttt actattcctt atgtcattca ctgtactctg

9541 tttaacacca gtttactcat tcttacctgg tgtttattct gttatttact tgtacttgac

9601 attttatctt actaatgatg tttctttttt agcacatatt cagtggatgg ttatgttcac

9661 acctttagta cctttctgga taacaattgc ttatatcatt tgtatttcca caaagcattt

9721 ctattggttc tttagtaatt acctaaagag acgtgtagtc tttaatggtg tttcctttag

9781 tacttttgaa gaagctgcgc tgtgcacctt tttgttaaat aaagaaatgt atctaaagtt

9841 gcgtagtgat gtgctattac ctcttacgca atataataga tacttagctc tttataataa

9901 gtacaagtat tttagtggag caatggatac aactagctac agagaagctg cttgttgtca

9961 tctcgcaaag gctctcaatg acttcagtaa ctcaggttct gatgttcttt accaaccacc

10021 acaaatctct atcacctcag ctgttttgca gagtggtttt agaaaaatgg cattcccatc

10081 tggtaaagtt gagggttgta tggtacaagt aacttgtggt acaactacac ttaatggtct

10141 ttggcttgat gacgtagttt actgtccaag acatgtgatc tgcacctctg aagacatgct

10201 taaccctaat tatgaagatt tactcattcg taagtctaat cataatttct tggtacaggc

10261 tggtaatgtt caactcaggg ttattggaca ttctatgcaa aattgtgtac ttaagcttaa

10321 ggttgataca gccaatccta agacacctaa gtataagttt gttcgcattc aaccaggaca

10381 gactttttca gtgttagctt gttacaatgg ttcaccatct ggtgtttacc aatgtgctat

10441 gaggcacaat ttcactatta agggttcatt ccttaatggt tcatgtggta gtgttggttt

10501 taacatagat tatgactgtg tctctttttg ttacatgcac catatggaat taccaactgg

10561 agttcatgct ggcacagact tagaaggtaa cttttatgga ccttttgttg acaggcaaac

10621 agcacaagca gctggtacgg acacaactat tacagttaat gttttagctt ggttgtacgc

10681 tgctgttata aatggagaca ggtggtttct caatcgattt accacaactc ttaatgactt

10741 taaccttgtg gctatgaagt acaattatga acctctaaca caagaccatg ttgacatact

10801 aggacctctt tctgctcaaa ctggaattgc cgttttagat atgtgtgctt cattaaaaga

10861 attactgcaa aatggtatga atggacgtac catattgggt agtgctttat tagaagatga

10921 atttacacct tttgatgttg ttagacaatg ctcaggtgtt actttccaaa gtgcagtgaa

10981 aagaacaatc aagggtacac accactggtt gttactcaca attttgactt cacttttagt

11041 tttagtccag agtactcaat ggtctttgtt cttttttttg tatgaaaatg cctttttacc

11101 ttttgctatg ggtattattg ctatgtctgc ttttgcaatg atgtttgtca aacataagca

11161 tgcatttctc tgtttgtttt tgttaccttc tcttgccact gtagcttatt ttaatatggt

11221 ctatatgcct gctagttggg tgatgcgtat tatgacatgg ttggatatgg ttgatactag

11281 ttttaagcta aaagactgtg ttatgtatgc atcagctgta gtgttactaa tccttatgac

11341 agcaagaact gtgtatgatg atggtgctag gagagtgtgg acacttatga atgtcttgac

11401 actcgtttat aaagtttatt atggtaatgc tttagatcaa gccatttcca tgtgggctct

11461 tataatctct gttacttcta actactcagg tgtagttaca actgtcatgt ttttggccag

11521 aggtgttgtt tttatgtgtg ttgagtattg ccctattttc ttcataactg gtaatacact

11581 tcagtgtata atgctagttt attgtttctt aggctatttt tgtacttgtt actttggcct

11641 cttttgttta ctcaaccgct actttagact gactcttggt gtttatgatt acttagtttc

11701 tacacaggag tttagatata tgaattcaca gggactactc ccacccaaga atagcataga

11761 tgccttcaaa ctcaacatta aattgttggg tgttggtggc aaaccttgta tcaaagtagc

11821 cactgtacag tctaaaatgt cagatgtaaa gtgcacatca gtagtcttac tctcagtttt

11881 gcaacaactc agagtagaat catcatctaa attgtgggct caatgtgtcc agttacacaa

11941 tgacattctc ttagctaaag atactactga agcctttgaa aaaatggttt cactactttc

12001 tgttttgctt tccatgcagg gtgctgtaga cataaacaag ctttgtgaag aaatgctgga

12061 caacagggca accttacaag ctatagcctc agagtttagt tcccttccat catatgcagc

12121 ttttgctact gctcaagaag cttatgagca ggctgttgct aatggtgatt ctgaagttgt

12181 tcttaaaaag ttgaagaagt ctttgaatgt ggctaaatct gaatttgacc gtgatgcagc

12241 catgcaacgt aagttggaaa agatggctga tcaagctatg acccaaatgt ataaacaggc

12301 tagatctgag gacaagaggg caaaagttac tagtgctatg cagacaatgc ttttcactat

12361 gcttagaaag ttggataatg atgcactcaa caacattatc aacaatgcaa gagatggttg

12421 tgttcccttg aacataatac ctcttacaac agcagccaaa ctaatggttg tcataccaga

12481 ctataacaca tataaaaata cgtgtgatgg tacaacattt acttatgcat cagcattgtg

12541 ggaaatccaa caggttgtag atgcagatag taaaattgtt caacttagtg aaattagtat

12601 ggacaattca cctaatttag catggcctct tattgtaaca gctttaaggg ccaattctgc

12661 tgtcaaatta cagaataatg agcttagtcc tgttgcacta cgacagatgt cttgtgctgc

12721 cggtactaca caaactgctt gcactgatga caatgcgtta gcttactaca acacaacaaa

12781 gggaggtagg tttgtacttg cactgttatc cgatttacag gatttgaaat gggctagatt

12841 ccctaagagt gatggaactg gtactatcta tacagaactg gaaccacctt gtaggtttgt

12901 tacagacaca cctaaaggtc ctaaagtgaa gtatttatac tttattaaag gattaaacaa

12961 cctaaataga ggtatggtac ttggtagttt agctgccaca gtacgtctac aagctggtaa

13021 tgcaacagaa gtgcctgcca attcaactgt attatctttc tgtgcttttg ctgtagatgc

13081 tgctaaagct tacaaagatt atctagctag tgggggacaa ccaatcacta attgtgttaa

13141 gatgttgtgt acacacactg gtactggtca ggcaataaca gtcacaccgg aagccaatat

13201 ggatcaagaa tcctttggtg gtgcatcgtg ttgtctgtac tgccgttgcc acatagatca

13261 tccaaatcct aaaggatttt gtgacttaaa aggtaagtat gtacaaatac ctacaacttg

13321 tgctaatgac cctgtgggtt ttacacttaa aaacacagtc tgtaccgtct gcggtatgtg

13381 gaaaggttat ggctgtagtt gtgatcaact ccgcgaaccc atgcttcagt cagctgatgc

13441 acaatcgttt ttaaacgggt ttgcggtgta agtgcagccc gtcttacacc gtgcggcaca

13501 ggcactagta ctgatgtcgt atacagggct tttgacatct acaatgataa agtagctggt

13561 tttgctaaat tcctaaaaac taattgttgt cgcttccaag aaaaggacga agatgacaat

13621 ttaattgatt cttactttgt agttaagaga cacactttct ctaactacca acatgaagaa

13681 acaatttata atttacttaa ggattgtcca gctgttgcta aacatgactt ctttaagttt

13741 agaatagacg gtgacatggt accacatata tcacgtcaac gtcttactaa atacacaatg

13801 gcagacctcg tctatgcttt aaggcatttt gatgaaggta attgtgacac attaaaagaa

13861 atacttgtca catacaattg ttgtgatgat gattatttca ataaaaagga ctggtatgat

13921 tttgtagaaa acccagatat attacgcgta tacgccaact taggtgaacg tgtacgccaa

13981 gctttgttaa aaacagtaca attctgtgat gccatgcgaa atgctggtat tgttggtgta

14041 ctgacattag ataatcaaga tctcaatggt aactggtatg atttcggtga tttcatacaa

14101 accacgccag gtagtggagt tcctgttgta gattcttatt attcattgtt aatgcctata

14161 ttaaccttga ccagggcttt aactgcagag tcacatgttg acactgactt aacaaagcct

14221 tacattaagt gggatttgtt aaaatatgac ttcacggaag agaggttaaa actctttgac

14281 cgttatttta aatattggga tcagacatac cacccaaatt gtgttaactg tttggatgac

14341 agatgcattc tgcattgtgc aaactttaat gttttattct ctacagtgtt cccacttaca

14401 agttttggac cactagtgag aaaaatattt gttgatggtg ttccatttgt agtttcaact

14461 ggataccact tcagagagct aggtgttgta cataatcagg atgtaaactt acatagctct

14521 agacttagtt ttaaggaatt acttgtgtat gctgctgacc ctgctatgca cgctgcttct

14581 ggtaatctat tactagataa acgcactacg tgcttttcag tagctgcact tactaacaat

14641 gttgcttttc aaactgtcaa acccggtaat tttaacaaag acttctatga ctttgctgtg

14701 tctaagggtt tctttaagga aggaagttct gttgaattaa aacacttctt ctttgctcag

14761 gatggtaatg ctgctatcag cgattatgac tactatcgtt ataatctacc aacaatgtgt

14821 gatatcagac aactactatt tgtagttgaa gttgttgata agtactttga ttgttacgat

14881 ggtggctgta ttaatgctaa ccaagtcatc gtcaacaacc tagacaaatc agctggtttt

14941 ccatttaata aatggggtaa ggctagactt tattatgatt caatgagtta tgaggatcaa

15001 gatgcacttt tcgcatatac aaaacgtaat gtcatcccta ctataactca aatgaatctt

15061 aagtatgcca ttagtgcaaa gaatagagct cgcaccgtag ctggtgtctc tatctgtagt

15121 actatgacca atagacagtt tcatcaaaaa ttattgaaat caatagccgc cactagagga

15181 gctactgtag taattggaac aagcaaattc tatggtggtt ggcacaatat gttaaaaact

15241 gtttatagtg atgtagaaaa ccctcacctt atgggttggg attatcctaa atgtgataga

15301 gccatgccta acatgcttag aattatggcc tcacttgttc ttgctcgcaa acatacaacg

15361 tgttgtagct tgtcacaccg tttctataga ttagctaatg agtgtgctca agtattgagt

15421 gaaatggtca tgtgtggcgg ttcactatat gttaaaccag gtggaacctc atcaggagat

15481 gccacaactg cttatgctaa tagtgttttt aacatttgtc aagctgtcac ggccaatgtt

15541 aatgcacttt tatctactga tggtaacaaa attgccgata agtatgtccg caatttacaa

15601 cacagacttt atgagtgtct ctatagaaat agagatgttg acacagactt tgtgaatgag

15661 ttttacgcat atttgcgtaa acatttctca atgatgatac tctctgacga tgctgttgtg

15721 tgtttcaata gcacttatgc atctcaaggt ctagtggcta gcataaagaa ctttaagtca

15781 gttctttatt atcaaaacaa tgtttttatg tctgaagcaa aatgttggac tgagactgac

15841 cttactaaag gacctcatga attttgctct caacatacaa tgctagttaa acagggtgat

15901 gattatgtgt accttcctta cccagatcca tcaagaatcc taggggccgg ctgttttgta

15961 gatgatatcg taaaaacaga tggtacactt atgattgaac ggttcgtgtc tttagctata

16021 gatgcttacc cacttactaa acatcctaat caggagtatg ctgatgtctt tcatttgtac

16081 ttacaataca taagaaagct acatgatgag ttaacaggac acatgttaga catgtattct

16141 gttatgctta ctaatgataa cacttcaagg tattgggaac ctgagtttta tgaggctatg

16201 tacacaccgc atacagtctt acaggctgtt ggggcttgtg ttctttgcaa ttcacagact

16261 tcattaagat gtggtgcttg catacgtaga ccattcttat gttgtaaatg ctgttacgac

16321 catgtcatat caacatcaca taaattagtc ttgtctgtta atccgtatgt ttgcaatgct

16381 ccaggttgtg atgtcacaga tgtgactcaa ctttacttag gaggtatgag ctattattgt

16441 aaatcacata aaccacccat tagttttcca ttgtgtgcta atggacaagt ttttggttta

16501 tataaaaata catgtgttgg tagcgataat gttactgact ttaatgcaat tgcaacatgt

16561 gactggacaa atgctggtga ttacatttta gctaacacct gtactgaaag actcaagctt

16621 tttgcagcag aaacgctcaa agctactgag gagacattta aactgtctta tggtattgct

16681 actgtacgtg aagtgctgtc tgacagagaa ttacatcttt catgggaagt tggtaaacct

16741 agaccaccac ttaaccgaaa ttatgtcttt actggttatc gtgtaactaa aaacagtaaa

16801 gtacaaatag gagagtacac ctttgaaaaa ggtgactatg gtgatgctgt tgtttaccga

16861 ggtacaacaa cttacaaatt aaatgttggt gattattttg tgctgacatc acatacagta

16921 atgccattaa gtgcacctac actagtgcca caagagcact atgttagaat tactggctta

16981 tacccaacac tcaatatctc agatgagttt tctagcaatg ttgcaaatta tcaaaaggtt

17041 ggtatgcaaa agtattctac actccaggga ccacctggta ctggtaagag tcattttgct

17101 attggcctag ctctctacta cccttctgct cgcatagtgt atacagcttg ctctcatgcc

17161 gctgttgatg cactatgtga gaaggcatta aaatatttgc ctatagataa atgtagtaga

17221 attatacctg cacgtgctcg tgtagagtgt tttgacaaat tcaaagtgaa ttcaacatta

17281 gaacagtatg tcttttgtac tgtaaatgca ttgcctgaga cgacagcaga tatagttgtc

17341 tttgatgaaa tttcaatggc cacaaattat gatttgagtg ttgtcaatgc cagattacgt

17401 gctaagcact atgtgtacat tggcgaccct gctcaattac ctgcaccacg cacattgcta

17461 actaagggca cactagaacc agaatatttc aattcagtgt gtagacttat gaaaactata

17521 ggtccagaca tgttcctcgg aacttgtcgg cgttgtcctg ctgaaattgt tgacactgtg

17581 agtgctttgg tttatgataa taagcttaaa gcacataaag acaaatcagc tcaatgcttt

17641 aaaatgtttt ataagggtgt tatcacgcat gatgtttcat ctgcaattaa caggccacaa

17701 ataggcgtgg taagagaatt ccttacacgt aaccctgctt ggagaaaagc tgtctttatt

17761 tcaccttata attcacagaa tgctgtagcc tcaaagattt tgggactacc aactcaaact

17821 gttgattcat cacagggctc agaatatgac tatgtcatat tcactcaaac cactgaaaca

17881 gctcactctt gtaatgtaaa cagatttaat gttgctatta ccagagcaaa agtaggcata

17941 ctttgcataa tgtctgatag agacctttat gacaagttgc aatttacaag tcttgaaatt

18001 ccacgtagga atgtggcaac tttacaagct gaaaatgtaa caggactctt taaagattgt

18061 agtaaggtaa tcactgggtt acatcctaca caggcaccta cacacctcag tgttgacact

18121 aaattcaaaa ctgaaggttt atgtgttgac gtacctggca tacctaagga catgacctat

18181 agaagactca tctctatgat gggttttaaa atgaattatc aagttaatgg ttaccctaac

18241 atgtttatca cccgcgaaga agctataaga catgtacgtg catggattgg cttcgatgtc

18301 gaggggtgtc atgctactag agaagctgtt ggtaccaatt tacctttaca gctaggtttt

18361 tctacaggtg ttaacctagt tgctgtacct acaggttatg ttgatacacc taataataca

18421 gatttttcca gagttagtgc taaaccaccg cctggagatc aatttaaaca cctcatacca

18481 cttatgtaca aaggacttcc ttggaatgta gtgcgtataa agattgtaca aatgttaagt

18541 gacacactta aaaatctctc tgacagagtc gtatttgtct tatgggcaca tggctttgag

18601 ttgacatcta tgaagtattt tgtgaaaata ggacctgagc gcacctgttg tctatgtgat

18661 agacgtgcca catgcttttc cactgcttca gacacttatg cctgttggca tcattctatt

18721 ggatttgatt acgtctataa tccgtttatg attgatgttc aacaatgggg ttttacaggt

18781 aacctacaaa gcaaccatga tctgtattgt caagtccatg gtaatgcaca tgtagctagt

18841 tgtgatgcaa tcatgactag gtgtctagct gtccacgagt gctttgttaa gcgtgttgac

18901 tggactattg aatatcctat aattggtgat gaactgaaga ttaatgcggc ttgtagaaag

18961 gttcaacaca tggttgttaa agctgcatta ttagcagaca aattcccagt tcttcacgac

19021 attggtaacc ctaaagctat taagtgtgta cctcaagctg atgtagaatg gaagttctat

19081 gatgcacagc cttgtagtga caaagcttat aaaatagaag aattattcta ttcttatgcc

19141 acacattctg acaaattcac agatggtgta tgcctatttt ggaattgcaa tgtcgataga

19201 tatcctgcta attccattgt ttgtagattt gacactagag tgctatctaa ccttaacttg

19261 cctggttgtg atggtggcag tttgtatgta aataaacatg cattccacac accagctttt

19321 gataaaagtg cttttgttaa tttaaaacaa ttaccatttt tctattactc tgacagtcca

19381 tgtgagtctc atggaaaaca agtagtgtca gatatagatt atgtaccact aaagtctgct

19441 acgtgtataa cacgttgcaa tttaggtggt gctgtctgta gacatcatgc taatgagtac

19501 agattgtatc tcgatgctta taacatgatg atctcagctg gctttagctt gtgggtttac

19561 aaacaatttg atacttataa cctctggaac acttttacaa gacttcagag tttagaaaat

19621 gtggctttta atgttgtaaa taagggacac tttgatggac aacagggtga agtaccagtt

19681 tctatcatta ataacactgt ttacacaaaa gttgatggtg ttgatgtaga attgtttgaa

19741 aataaaacaa cattacctgt taatgtagca tttgagcttt gggctaagcg caacattaaa

19801 ccagtaccag aggtgaaaat actcaataat ttgggtgtgg acattgctgc taatactgtg

19861 atctgggact acaaaagaga tgctccagca catatatcta ctattggtgt ttgttctatg

19921 actgacatag ccaagaaacc aactgaaacg atttgtgcac cactcactgt cttttttgat

19981 ggtagagttg atggtcaagt agacttattt agaaatgccc gtaatggtgt tcttattaca

20041 gaaggtagtg ttaaaggttt acaaccatct gtaggtccca aacaagctag tcttaatgga

20101 gtcacattaa ttggagaagc cgtaaaaaca cagttcaatt attataagaa agttgatggt

20161 gttgtccaac aattacctga aacttacttt actcagagta gaaatttaca agaatttaaa

20221 cccaggagtc aaatggaaat tgatttctta gaattagcta tggatgaatt cattgaacgg

20281 tataaattag aaggctatgc cttcgaacat atcgtttatg gagattttag tcatagtcag

20341 ttaggtggtt tacatctact gattggacta gctaaacgtt ttaaggaatc accttttgaa

20401 ttagaagatt ttattcctat ggacagtaca gttaaaaact atttcataac agatgcgcaa

20461 acaggttcat ctaagtgtgt gtgttctgtt attgatttat tacttgatga ttttgttgaa

20521 ataataaaat cccaagattt atctgtagtt tctaaggttg tcaaagtgac tattgactat

20581 acagaaattt catttatgct ttggtgtaaa gatggccatg tagaaacatt ttacccaaaa

20641 ttacaatcta gtcaagcgtg gcaaccgggt gttgctatgc ctaatcttta caaaattcaa

20701 agaatgctat tagaaaagtg tgaccttcaa aattatggtg atagtgcaac attacctaaa

20761 ggcataatga tgaatgtcgc aaaatatact caactgtgtc aatatttaaa cacattaaca

20821 ttagctgtac cctataatat gagagttata cattttggtg ctggttctga taaaggagtt

20881 gcaccaggta cagctgtttt aagacagtgg ttgcctacgg gtacgctgct tgtcgattca

20941 gatcttaatg actttgtctc tgatgcagat tcaactttga ttggtgattg tgcaactgta

21001 catacagcta ataaatggga tctcattatt agtgatatgt acgaccctaa gactaaaaat

21061 gttacaaaag aaaatgactc taaagagggt tttttcactt acatttgtgg gtttatacaa

21121 caaaagctag ctcttggagg ttccgtggct ataaagataa cagaacattc ttggaatgct

21181 gatctttata agctcatggg acacttcgca tggtggacag cctttgttac taatgtgaat

21241 gcgtcatcat ctgaagcatt tttaattgga tgtaattatc ttggcaaacc acgcgaacaa

21301 atagatggtt atgtcatgca tgcaaattac atattttgga ggaatacaaa tccaattcag

21361 ttgtcttcct attctttatt tgacatgagt aaatttcccc ttaaattaag gggtactgct

21421 gttatgtctt taaaagaagg tcaaatcaat gatatgattt tatctcttct tagtaaaggt

21481 agacttataa ttagagaaaa caacagagtt gttatttcta gtgatgttct tgttaacaac

21541 taaacgaaca atgtttgttt ttcttgtttt attgccacta gtctctagtc agtgtgttaa

21601 tcttacaacc agaactcaat taccccctgc atacactaat tctttcacac gtggtgttta

21661 ttaccctgac aaagttttca gatcctcagt tttacattca actcaggact tgttcttacc

21721 tttcttttcc aatgttactt ggttccatgt tatctctggg accaatggta ctaagaggtt

21781 tgataaccct gttctaccat ttaatgatgg tgtttatttt gcttccattg agaagtctaa

21841 cataataaga ggctggattt ttggtactac tttagattcg aagacccagt ccctacttat

21901 tgttaataac gctactaatg ttgttattaa agtctgtgaa tttcaatttt gtaatgatcc

21961 atttttggac cacaaaaaca acaaaagttg gatggaaagt gagttcagag tttattctag

22021 tgcgaataat tgcacttttg aatatgtctc tcagcctttt cttatggacc ttgaaggaaa

22081 acagggtaat ttcaaaaatc ttagggaatt tgtgtttaag aatattgatg gttattttaa

22141 aatatattct aagcacacgc ctattatagt gcgtgagcca gaagatctcc ctcagggttt

22201 ttcggcttta gaaccattgg tagatttgcc aataggtatt aacatcacta ggtttcaaac

22261 tttacttgct ttacatagaa gttatttgac tcctggtgat tcttcttcag gttggacagc

22321 tggtgctgca gcttattatg tgggttatct tcaacctagg acttttctat taaaatataa

22381 tgaaaatgga accattacag atgctgtaga ctgtgcactt gaccctctct cagaaacaaa

22441 gtgtacgttg aaatccttca ctgtagaaaa aggaatctat caaacttcta actttagagt

22501 ccaaccaaca gaatctattg ttagatttcc taatattaca aacttgtgcc cttttgatga

22561 agtttttaac gccaccagat ttgcatctgt ttatgcttgg aacaggaaga gaatcagcaa

22621 ctgtgttgct gattattctg tcctatataa tctcgcacca tttttcactt ttaagtgtta

22681 tggagtgtct cctactaaat taaatgatct ctgctttact aatgtctatg cagattcatt

22741 tgtaattaga ggtgatgaag tcagacaaat cgctccaggg caaactggaa atattgctga

22801 ttataattat aaattaccag atgattttac aggctgcgtt atagcttgga attctaacaa

22861 gcttgattct aaggttagtg gtaattataa ttacctgtat agattgttta ggaagtctaa

22921 tctcaaacct tttgagagag atatttcaac tgaaatctat caggccggta acaaaccttg

22981 taatggtgtt gcaggtttta attgttactt tcctttacaa tcatatagtt tccgacccac

23041 ttatggtgtt ggtcaccaac catacagagt agtagtactt tcttttgaac ttctacatgc

23101 accagcaact gtttgtggac ctaaaaagtc tactaatttg gttaaaaaca aatgtgtcaa

23161 tttcaacttc aatggtttaa aaggcacagg tgttcttact gagtctaaca aaaagtttct

23221 gcctttccaa caatttggca gagacattgc tgacactact gatgctgtcc gtgatccaca

23281 gacacttgag attcttgaca ttacaccatg ttcttttggt ggtgtcagtg ttataacacc

23341 aggaacaaat acttctaacc aggttgctgt tctttatcag ggtgttaact gcacagaagt

23401 ccctgttgct attcatgcag atcaacttac tcctacttgg cgtgtttatt ctacaggttc

23461 taatgttttt caaacacgtg caggctgttt aataggggct gaatatgtca acaactcata

23521 tgagtgtgac atacccattg gtgcaggtat atgcgctagt tatcagactc agactaagtc

23581 tcatcggcgg gcacgtagtg tagctagtca atccatcatt gcctacacta tgtcacttgg

23641 tgcagaaaat tcagttgctt actctaataa ctctattgcc atacccacaa attttactat

23701 tagtgttacc acagaaattc taccagtgtc tatgaccaag acatcagtag attgtacaat

23761 gtacatttgt ggtgattcaa ctgaatgcag caatcttttg ttgcaatatg gcagtttttg

23821 tacacaatta aaacgtgctt taactggaat agctgttgaa caagacaaaa acacccaaga

23881 agtttttgca caagtcaaac aaatttacaa aacaccacca attaaatatt ttggtggttt

23941 taatttttca caaatattac cagatccatc aaaaccaagc aagaggtcat ttattgaaga

24001 tctacttttc aacaaagtga cacttgcaga tgctggcttc atcaaacaat atggtgattg

24061 ccttggtgat attgctgcta gagacctcat ttgtgcacaa aagtttaaag gccttactgt

24121 tttgccacct ttgctcacag atgaaatgat tgctcaatac acttctgcac tgttagcggg

24181 tacaatcact tctggttgga cctttggtgc aggtgctgca ttacaaatac catttgctat

24241 gcaaatggct tataggttta atggtattgg agttacacag aatgttctct atgagaacca

24301 aaaattgatt gccaaccaat ttaatagtgc tattggcaaa attcaagact cactttcttc

24361 cacagcaagt gcacttggaa aacttcaaga tgtggtcaac cataatgcac aagctttaaa

24421 cacgcttgtt aaacaactta gctccaaatt tggtgcaatt tcaagtgttt taaatgatat

24481 cttttcacgt cttgacaaag ttgaggctga agtgcaaatt gataggttga tcacaggcag

24541 acttcaaagt ttgcagacat atgtgactca acaattaatt agagctgcag aaatcagagc

24601 ttctgctaat cttgctgcta ctaaaatgtc agagtgtgta cttggacaat caaaaagagt

24661 tgatttttgt ggaaagggct atcatcttat gtccttccct cagtcagcac ctcatggtgt

24721 agtcttcttg catgtgactt atgtccctgc acaagaaaag aacttcacaa ctgctcctgc

24781 catttgtcat gatggaaaag cacactttcc tcgtgaaggt gtctttgttt caaatggcac

24841 acactggttt gtaacacaaa ggaattttta tgaaccacaa atcattacta cagacaacac

24901 atttgtgtct ggtaactgtg atgttgtaat aggaattgtc aacaacacag tttatgatcc

24961 tttgcaacct gaattagatt cattcaagga ggagttagat aaatatttta agaatcatac

25021 atcaccagat gttgatttag gtgacatctc tggcattaat gcttcagttg taaacattca

25081 aaaagaaatt gaccgcctca atgaggttgc caagaattta aatgaatctc tcatcgatct

25141 ccaagaactt ggaaagtatg agcagtatat aaaatggcca tggtacattt ggctaggttt

25201 tatagctggc ttgattgcca tagtaatggt gacaattatg ctttgctgta tgaccagttg

25261 ctgtagttgt ctcaagggct gttgttcttg tggatcctgc tgcaaatttg atgaagacga

25321 ctctgagcca gtgctcaaag gagtcaaatt acattacaca taaacgaact tatggatttg

25381 tttatgagaa tcttcacaat tggaactgta actttgaagc aaggtgaaat caaggatgct

25441 actccttcag attttgttcg cgctactgca acgataccga tacaagcctc actccctttc

25501 ggatggctta ttgttggcgt tgcacttctt gctgtttttc agagcgcttc caaaatcata

25561 actctcaaaa agagatggca actagcactc tccaagggtg ttcactttgt ttgcaacttg

25621 ctgttgttgt ttgtaacagt ttactcacac cttttgctcg ttgctgctgg ccttgaagcc

25681 ccttttctct atctttatgc tttagtctac ttcttgcaga gtataaactt tgtaagaata

25741 ataatgaggc tttggctttg ctggaaatgc cgttccaaaa acccattact ttatgatgcc

25801 aactattttc tttgctggca tactaattgt tacgactatt gtatacctta caatagtgta

25861 acttcttcaa ttgtcattac ttcaggtgat ggcacaacaa gtcctatttc tgaacatgac

25921 taccagattg gtggttatac tgaaaaatgg gaatctggag taaaagactg tgttgtatta

25981 cacagttact tcacttcaga ctattaccag ctgtactcaa ctcaattgag tacagacact

26041 ggtgttgaac atgttacctt cttcatctac aataaaattg ttgatgagcc tgaagaacat

26101 gtccaaattc acacaatcga cggttcatcc ggagttgtta atccagtaat ggaaccaatt

26161 tatgatgaac cgacgacgac tactagcgtg cctttgtaag cacaagctga tgagtacgaa

26221 cttatgtact cattcgtttc ggaagagata ggtacgttaa tagttaatag cgtacttctt

26281 tttcttgctt tcgtggtatt cttgctagtt acactagcca tccttactgc gcttcgattg

26341 tgtgcgtact gctgcaatat tgttaacgtg agtcttgtaa aaccttcttt ttacgtttac

26401 tctcgtgtta aaaatctgaa ttcttctaga gttcctgatc ttctggtcta aacgaactaa

26461 atattatatt agtttttctg tttggaactt taattttagc catggcaggt tccaacggta

26521 ctattaccgt tgaagagctt aaaaagctcc ttgaagaatg gaacctagta ataggtttcc

26581 tattccttac atggatttgt cttctacaat ttgcctatgc caacaggaat aggtttttgt

26641 atataattaa gttaattttc ctctggctgt tatggccagt aactttaact tgttttgtgc

26701 ttgctgctgt ttacagaata aattggatca ccggtggaat tgctatcgca atggcttgtc

26761 tcgtaggctt gatgtggctc agctacttca ttgcttcttt cagactgttt gcgcgtacgc

26821 gttccatgtg gtcattcaat ccagaaacta acattcttct caacgtgcca ctccatggca

26881 ctattctgac cagaccgctt ctagaaagtg aactcgtaat cggagctgtg atccttcgtg

26941 gacatcttcg tattgctgga caccatctag gacgctgtga catcaaggac ctgcctaaag

27001 aaatcactgt tgctacatca cgaacgcttt cttattacaa attgggagct tcgcagcgtg

27061 tagcaggtga ctcaggtttt gctgcataca gtcgctacag gattggcaac tataaattaa

27121 acacagacca ttccagtagc agtgacaata ttgctttgct tgtacagtaa gtgacaacag

27181 atgtttcatc tcgttgactt tcaggttact atagcagaga tattactaat tattatgcgg

27241 acttttaaag tttccatttg gaatcttgat tacatcataa acctcataat taaaaattta

27301 tctaagtcac taactgagaa taaatattct caattagatg aagagcaacc aatggagatt

27361 gattaaacga acatgaaaat tattcttttc ttggcactga taacactcgc tacttgtgag

27421 ctttatcact accaagagtg tgttagaggt acaacagtac ttttaaaaga accttgctct

27481 tctggaacat acgagggcaa ttcaccattt catcctctag ctgataacaa atttgcactg

27541 acttgcttta gcactcaatt tgcttttgct tgtcctgacg gcgtaaaaca cgtctatcag

27601 ttacgtgcca gatcagtttc acctaaactg ttcatcagac aagaggaagt tcaagaactt

27661 tactctccaa tttttcttat tgttgcggca atagtgttta taacactttg cttcacactc

27721 aaaagaaaga cagaatgatt gaactttcat taattgactt ctatttgtgc tttttagcct

27781 ttctgttatt ccttgtttta attatgctta ttatcttttg gttctcactt gaactgcaag

27841 atcataatga aacttgtcac gcctaaacga acatgaaatt tcttgttttc ttaggaatca

27901 tcacaactgt agctgcattt caccaagaat gtagtttaca gtcatgtact caacatcaac

27961 catatgtagt tgatgacccg tgtcctattc acttctattc taaatggtat attagagtag

28021 gagctagaaa atcagcacct ttaattgaat tgtgcgtgga tgaggctggt tctaaatcac

28081 ccattcagta catcgatatc ggtaattata cagtttcctg tttacctttt acaattaatt

28141 gccaggaacc taaattgggt agtcttgtag tgcgttgttc gttctatgaa gactttttag

28201 agtatcatga cgttcgtgtt gttttagatt tcatctaaac gaacaaactt aaatgtctga

28261 taatggaccc caaaatcagc gaaatgcact ccgcattacg tttggtggac cctcagattc

28321 aactggcagt aaccagaatg gtggggcgcg atcaaaacaa cgtcggcccc aaggtttacc

28381 caataatact gcgtcttggt tcaccgctct cactcaacat ggcaaggaag accttaaatt

28441 ccctcgagga caaggcgttc caattaacac caatagcagt ccagatgacc aaattggcta

28501 ctaccgaaga gctaccagac gaattcgtgg tggtgacggt aaaatgaaag atctcagtcc

28561 aagatggtat ttctactacc taggaactgg gccagaagct ggacttccct atggtgctaa

28621 caaagacggc atcatatggg ttgcaactga gggagccttg aatacaccaa aagatcacat

28681 tggcacccgc aatcctgcta acaatgctgc aatcgtgcta caacttcctc aaggaacaac

28741 attgccaaaa ggcttctacg cagaagggag cagaggcggc agtcaagcct cttctcgttc

28801 ctcatcacgt agtcgcaaca gttcaagaaa ttcaactcca ggcagcagta aacgaacttc

28861 tcctgctaga atggctggca atggcggtga tgctgctctt gctttgctgc tgcttgacag

28921 attgaaccag cttgagagca aaatgtctgg taaaggccaa caacaacaag gccaaactgt

28981 cactaagaaa tctgctgctg aggcttctaa gaagcctcgg caaaaacgta ctgccactaa

29041 agcatacaat gtaacacaag ctttcggcag acgtggtcca gaacaaaccc aaggaaattt

29101 tggggaccag gaactaatca gacaaggaac tgattacaaa cattggccgc aaattgcaca

29161 atttgccccc agcgcttcag cgttcttcgg aatgtcgcgc attggcatgg aagtcacacc

29221 ttcgggaacg tggttgacct acacaggtgc catcaaattg gatgacaaag atccaaattt

29281 caaagatcaa gtcattttgc tgaataagca tattgacgca tacaaaacat tcccaccaac

29341 agagcctaaa aaggacaaaa agaagaaggc tgatgaaact caagccttac cgcagagaca

29401 gaagaaacag caaactgtga ctcttcttcc tgctgcagat ttggatgatt tctccaaaca

29461 attgcaacaa tccatgagca gtgctgactc aactcaggcc taaactcatg cagaccacac

29521 aaggcagatg ggctatataa acgttttcgc ttttccgttt acgatatata gtctactctt

29581 gtgcagaatg aattctcgta actacatagc acaagtagat gtagttaact ttaatctcac

29641 atagcaatct ttaatcagtg tgtaacatta gggaggactt gaaagagcca ccacattttc

29701 accgaggcca cgcggagtac gatcgagtgt acagtgaaca atgctaggga gagctgccta

29761 tatggaagag ccctaatgtg taaaattaat tttagtagtg ctatccccat gtgattttaa

29821 tagcttctta ggagaatgac aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa

//