**Severe acute respiratory syndrome coronavirus 2 isolate SARS-CoV-2/human/IND/LNHD135/2022 ORF1ab polyprotein (ORF1ab), ORF1a polyprotein (ORF1ab), surface glycoprotein (S), ORF3a protein (ORF3a), envelope protein (E), membrane glycoprotein (M), ORF6 protein (O...**

GenBank: ON060009.1

[FASTA](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?report=fasta) [Graphics](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?report=graph)

[Go to:](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?expand-gaps=on" \l "goto2211481700_0)

LOCUS ON060009 29772 bp RNA linear VRL 24-MAR-2022

DEFINITION Severe acute respiratory syndrome coronavirus 2 isolate

SARS-CoV-2/human/IND/LNHD135/2022 ORF1ab polyprotein (ORF1ab),

ORF1a polyprotein (ORF1ab), surface glycoprotein (S), ORF3a protein

(ORF3a), envelope protein (E), membrane glycoprotein (M), ORF6

protein (ORF6), ORF7a protein (ORF7a), and ORF7b (ORF7b) genes,

complete cds; ORF8 protein (ORF8) gene, partial cds; and

nucleocapsid phosphoprotein (N) and ORF10 protein (ORF10) genes,

complete cds.

ACCESSION ON060009

VERSION ON060009.1

KEYWORDS .

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 29772)

AUTHORS Kumar,S., Lomash,A., Kumar,S., Mohammed,F., Kapoor,S., Garg,S.,

Saxena,S., Manchanda,V., Siddiqui,O., Bothra,M., Varughese,B.,

Jindal,A., Dhakad,M.S., Sharma,A., Aasif,M.K., Suravajhala,P.N. and

Polipalli,S.K.

TITLE Direct Submission

JOURNAL Submitted (24-MAR-2022) Genome Sequencing Lab, MAMC & Lok Nayak

Hospital, JLN Marg, New Delhi, Delhi 110002, India

COMMENT ##Assembly-Data-START##

Assembly Method :: Commander v. sep-2021

Sequencing Technology :: ONT

##Assembly-Data-END##

FEATURES Location/Qualifiers

source 1..29772

/organism="Severe acute respiratory syndrome coronavirus

2"

/mol\_type="genomic RNA"

/isolate="SARS-CoV-2/human/IND/LNHD135/2022"

/isolation\_source="Oronasopharyngeal Swab"

/host="Homo sapiens"

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

/country="India: Delhi"

/collection\_date="2022-01-18"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=248&to=21537) 248..21537

/gene="ORF1ab"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?location=248:13450,13450:21537) join(248..13450,13450..21537)

/gene="ORF1ab"

/ribosomal\_slippage

/codon\_start=1

/product="ORF1ab polyprotein"

/protein\_id="[UNQ70434.1](https://www.ncbi.nlm.nih.gov/protein/2211481701)"

/translation="MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEVLSEARQ

HLKDGTCGLVEVEKGVLPQLEQPYVFIKRSDARTAPHGHVMVELVAELEGIQYGRSGE

TLGVLVPHVGEIPVAYRKVLLRKNGNKGAGGHRYGADLKSFDLGDELGTDPYEDFQEN

WNTKHSSGVTRELMRELNGGAYTRYVDNNFCGPDGYPLECIKDLLARAGKASCTLSEQ

LDFIDTKRGVYCCREHEHEIAWYTERSEKSYELQTPFEIKLAKKFDTFNGECPNFVFP

LNSIIKTIQPRVEKKKLDGFMGRIRSVYPVASPNECNQMCLSTLMKCDHCGETSWQTG

DFVKATCEFCGTENLTKEGATTCGYLPQNAVVKIYCPACHNSEVGPEHSLAEYHNESG

LKTILRKGGRTIAFGGCVFSYVGCHNKCAYWVPRASANIGCNHTGVVGEGSEGLNDNL

LEILQKEKVNINIVGDFKLNEEIAIILASFSASTSAFVETVKGLDYKAFKQIVESCGN

FKVTKGKAKKGAWNIGEQKSILSPLYAFASEAARVVRSIFSRTLETAQNSVRVLQKAA

ITILDGISQYSLRLIDAMMFTSDLATNNLVVMAYITGGVVQLTSQWLTNIFGTVYEKL

KPVLDWLEEKFKEGVEFLRDGWEIVKFISTCACEIVGGQIVTCAKEIKESVQTFFKLV

NKFLALCADSIIIGGAKLKALNLGETFVTHSKGLYRKCVKSREETGLLMPLKAPKEII

FLEGETLPTEVLTEEVVLKTGDLQPLEQPTSEAVEAPLVGTPVCINGLMLLEIKDTEK

YCALAPNMMVTNNTFTLKGGAPTKVTFGDDTVIEVQGYKSVNIIFELDERIDKVLNEK

CSAYTVELGTEVNEFACVVADAVIKTLQPVSELLTPLGIDLDEWSMATYYLFDESGEF

KLASHMYCSFYPPDEDEEEGDCEEEEFEPSTQYEYGTEDDYQGKPLEFGATSAALQPE

EEQEEDWLDDDSQQTVGQQDGSEDNQTTTIQTIVEVQPQLEMELTPVVQTIEVNSFSG

YLKLTDNVYIKNADIVEEAKKVKPTVVVNAANVYLKHGGGVAGALNKATNNAMQVESD

DYIATNGPLKVGGSCVLSGHNLAKHCLHVVGPNVNKGEDIQLLKSAYENFNQHEVLLA

PLLSAGIFGADPIHSLRVCVDTVRTNVYLAVFDKNLYDKLVSSFLEMKSEKQVEQKIA

EIPKEEVKPFITESKPSVEQRKQDDKKIKACVEEVTTTLEETKFLTENLLLYIDINGN

LHPDSATLVSDIDITFLKKDAPYIVGDVVQEGVLTAVVIPTKKASGTTEMLAKALRKV

PTDNYITTYPGQGLNGYTVEEAKTVLKKCKSAFYILPSIISNEKQEILGTVSWNLREM

LAHAEETRKLMPVCVETKAIVSTIQRKYKGIKIQEGVVDYGARFYFYTSKTTVASLIN

TLNDLNETLVTMPLGYVTHGLNLEEAARYMRSLKVPATVSVSSPDAVTAYNGYLTSSS

KTPEEHFIETISLAGSYKDWSYSGQSTQLGIEFLKRGDKSVYYTSNPTTFHLDGEVIT

FDNLKTLLSLREVRTIKVFTTVDNINLHTQVVDMSMTYGQQFGPTYLDGADVTKIKPH

NSHEGKTFYVLPNDDTLRVEAFEYYHTTDPSFLGRYMSALNHTKKWKYPQVNGLTSIK

WADNNCYLATALLTLQQIELKFNPPALQDAYYRARAGEAANFCALILAYCNKTVGELG

DVRETMSYLFQHANLDSCKRVLNVVCKTCGQQQTTLKGVEAVMYMGTLSYEQFKKGVQ

IPCTCGKQATKYLVQQESPFVMMSAPPAQYELKHGTFTCASEYTGNYQCGHYKHITSK

ETLYCIDGALLTKSSEYKGPITDVFYKENSYTTTIKPVTYKLDGVVCTEIDPKLDNYY

KKDNSYFTEQPIDLVPNQPYPNASFDNFKFVCDNIKFADDLNQLTGYKKPASRELKVT

FFPDLNGDVVAIDYKHYTPSFKKGAKLLHKPIVWHVNNATNKATYKPNTWCIRCLWST

KPVETSNSFDVLKSEDAQGMDNLACEDLKPVSEEVVENPTIQKDVLECNVKTTEVVGD

IILKPANNSLKITEEVGHTDLMAAYVDNSSLTIKKPNELSRVLGLKTLATHGLAAVNS

VPWDTIANYAKPFLNKVVSTTTNIVTRCLNRVCTNYMPYFFTLLLQLCTFTRSTNSRI

KASMPTTIAKNTVKSVGKFCLEASFNYLKSPNFSKLINIIIWFLLLSVCLGSLIYSTA

ALGVLMSNLGMPSYCTGYREGYLNSTNVTIATYCTGSIPCSVCLSGLDSLDTYPSLET

IQITISSFKWDLTAFGLVAEWFLAYILFTRFFYVLGLAAIMQLFFSYFAVHFISNSWL

MWLIINLVQMAPISAMVRMYIFFASFYYVWKSYVHVVDGCNSSTCMMCYKRNRATRVE

CTTIVNGVRRSFYVYANGGKGFCKLHNWNCVNCDTFCAGSTFISDEVARDLSLQFKRP

INPTDQSSYIVDSVTVKNGSIHLYFDKAGQKTYERHSLSHFVNLDNLRANNTKGSLPI

NVIVFDGKSKCEESSAKSASVYYSQLMCQPILLLDQALVSDVGDSAEVAVKMFDAYVN

TFSSTFNVPMEKLKTLVATAEAELAKNVSLDNVLSTFISAARQGFVDSDVETKDVVEC

LKLSHQSDIEVTGDSCNNYMLTYNKVENMTPRDLGACIDCSARHINAQVAKSHNIALI

WNVKDFMSLSEQLRKQIRSAAKKNNLPFKLTCATTRQVVNVVTTKIALKGGKIVNNWL

KQLIKVTLVFLFVAAIFYLITPVHVMSKHTDFSSEIIGYKAIDGGVTRDIASTDTCFA

NKHADFDTWFSQRGGSYTNDKACPLIAAVITREVGFVVPGLPGTILRTTNGDFLHFLP

RVFSAVGNICYTPSKLIEYTDFATSACVLAAECTIFKDASGKPVPYCYDTNVLEGSVA

YESLRPDTRYVLMDGSIIQFPNTYLEGSVRVVTTFDSEYCRHGTCERSEAGVCVSTSG

RWVLNNDYYRSLPGVFCGVDAVNLFTNMFTPLIQPIGALDISASIVAGGIVAIVVTCL

AYYFMRFRRAFGEYSHVVAFNTLLFLMSFIVLCLTPVYSFLPGVYSVIYLYLTFYLTN

DVSFLAHIQWMVMFTPLVPFWITIAYIICISTKHFYWFFSNYLKRRVVFNGVSFSTFE

EAALCTFLLNKEMYLKLRSDVLLPFTQYNRYLALYNKYKYFSGAMDTTSYREAACCHL

AKALNDFSNSGSDVLYQPPQISITSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNG

LWLDDVVYCPRHVICTSEDMLNPNYEDLLIRKSNHNFLVQAGNVQLRVIGHSMQNCVL

KLKVDTANPKTPKYKFVRIQPGQTFSVLACYNGSPSGVYQCAMRHNFTIKGSFLNGSC

GSVGFNIDYDCVSFCYMHHMELPTGVHAGTDLEGNFYGPFVDRQTAQAAGTDTTITVN

VLAWLYAAVINGDRWFLNRFTTTLNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAV

LDMCASLKELLQNGMNGRTILGSALLEDEFTPFDVVRQCSGVTFQSAVKRTIKGTHHW

LLLTILTSLLVLVQSTQWSLFFFLYENAFLPFAMGIIAMSAFAMMFVKHKHAFLCLFL

LPSLATVAYFNMVYMPASWVMRIMTWLDMVDTSLSGLKLKDCVMYASAVVLLILMTAR

TVYDDGARRVWTLMNVLTLVYKVYYGNALDQAISMWALIISVTSNYSGVVTTVMFLAR

GIVFMCVEYCPIFFITGNTLQCIMLVYCFLGYFCTCYFGLFCLLNRYFRLTLGVYDYL

VSTQEFRYMNSQGLLPPKNSIDAFKLNIKLLGVGGKPCIKVATVQSKMSDVKCTSVVL

LSVLQQLRVESSSKLWAQCVQLHNDILLAKDTTEAFEKMVSLLSVLLSMQGAVDINKL

CEEMLDNRATLQAIASEFSSLPSYAAFATAQEAYEQAVANGDSEVVLKKLKKSLNVAK

SEFDRDAAMQRKLEKMADQAMTQMYKQARSEDKRAKVTSAMQTMLFTMLRKLDNDALN

NIINNARDGCVPLNIIPLTTAAKLMVVIPDYNTYKNTCDGTTFTYASALWEIQQVVDA

DSKIVQLSEISMDNSPNLAWPLIVTALRANSAVKLQNNELSPVALRQMSCAAGTTQTA

CTDDNALAYYNTTKGGRFVLALLSDLQDLKWARFPKSDGTGTIYTELEPPCRFVTDTP

KGPKVKYLYFIKGLNNLNRGMVLGSLAATVRLQAGNATEVPANSTVLSFCAFAVDAAK

AYKDYLASGGQPITNCVKMLCTHTGTGQAITVTPEANMDQESFGGASCCLYCRCHIDH

PNPKGFCDLKGKYVQIPTTCANDPVGFTLKNTVCTVCGMWKGYGCSCDQLREPMLQSA

DAQSFLNRVCGVSAARLTPCGTGTSTDVVYRAFDIYNDKVAGFAKFLKTNCCRFQEKD

EDDNLIDSYFVVKRHTFSNYQHEETIYNLLKDCPAVAKHDFFKFRIDGDMVPHISRQR

LTKYTMADLVYALRHFDEGNCDTLKEILVTYNCCDDDYFNKKDWYDFVENPDILRVYA

NLGERVRQALLKTVQFCDAMRNAGIVGVLTLDNQDLNGNWYDFGDFIQTTPGSGVPVV

DSYYSLLMPILTLTRALTAESHVDTDLTKPYIKWDLLKYDFTEERLKLFDRYFKYWDQ

TYHPNCVNCLDDRCILHCANFNVLFSTVFPLTSFGPLVRKIFVDGVPFVVSTGYHFRE

LGVVHNQDVNLHSSRLSFKELLVYAADPAMHAASGNLLLDKRTTCFSVAALTNNVAFQ

TVKPGNFNKDFYDFAVSKGFFKEGSSVELKHFFFAQDGNAAISDYDYYRYNLPTMCDI

RQLLFVVEVVDKYFDCYDGGCINANQVIVNNLDKSAGFPFNKWGKARLYYDSMSYEDQ

DALFAYTKRNVIPTITQMNLKYAISAKNRARTVAGVSICSTMTNRQFHQKLLKSIAAT

RGATVVIGTSKFYGGWHNMLKTVYSDVENPHLMGWDYPKCDRAMPNMLRIMASLVLAR

KHTTCCSLSHRFYRLANECAQVLSEMVMCGGSLYVKPGGTSSGDATTAYANSVFNICQ

AVTANVNALLSTDGNKIADKYVRNLQHRLYECLYRNRDVDTDFVNEFYAYLRKHFSMM

ILSDDAVVCFNSTYASQGLVASIKNFKSVLYYQNNVFMSEAKCWTETDLTKGPHEFCS

QHTMLVKQGDDYVYLPYPDPSRILGAGCFVDDIVKTDGTLMIERFVSLAIDAYPLTKH

PNQEYADVFHLYLQYIRKLHDELTGHMLDMYSVMLTNDNTSRYWEPEFYEAMYTPHTV

LQAVGACVLCNSQTSLRCGACIRRPFLCCKCCYDHVISTSHKLVLSVNPYVCNAPGCD

VTDVTQLYLGGMSYYCKSHKPPISFPLCANGQVFGLYKNTCVGSDNVTDFNAIATCDW

TNAGDYILANTCTERLKLFAAETLKATEETFKLSYGIATVREVLSDRELHLSWEVGKP

RPPLNRNYVFTGYRVTKNSKVQIGEYTFEKGDYGDAVVYRGTTTYKLNVGDYFVLTSH

TVMPLSAPTLVPQEHYVRITGLYPTLNISDEFSSNVANYQKVGMQKYSTLQGPPGTGK

SHFAIGLALYYPSARIVYTACSHAAVDALCEKALKYLPIDKCSRIIPARARVECFDKF

KVNSTLEQYVFCTVNALPETTADIVVFDEISMATNYDLSVVNARLCAKHYVYIGDPAQ

LPAPRTLLTKGTLEPEYFNSVCRLMKTIGPDMFLGTCRRCPAEIVDTVSALVYDNKLK

AHKDKSAQCFKMFYKGVITHDVSSAINRPQIGVVREFLTRNPAWRKAVFISPYNSQNA

VASKILGLPTQTVDSSQGSEYDYVIFTQTTETAHSCNVNRFNVAITRAKVGILCIMSD

RDLYDKLQFTSLEIPRRNVATLQAENVTGLFKDCSKVITGLHPTQAPTHLSVDTKFKT

EGLCVDVPGIPKDMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEG

CHATREAVGTNLPLQLGFSTGVNLVAVPTGYVDTPNNTDFSRVSAKPPPGDQFKHLIP

LMYKGLPWNVVRIKIVQMLSDTLKNLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCL

CDRRATCFSTASDTYACWHHSIGFDYVYNPFMIDVQQWGFTGNLQSNHDLYCQVHGNA

HVASCDAIMTRCLAVHECFVKRVDWTIEYPIIGDELKINAACRKVQHMVVKAALLADK

FPVLHDIGNPKAIKCVPQADVEWKFYDAQPCSDKAYKIEELFYSYATHSDKFTDGVCL

FWNCNVDRYPANSIVCRFDTRVLSNLNLPGCDGGSLYVNKHAFHTPAFDKSAFVNLKQ

LPFFYYSDSPCESHGKQVVSDIDYVPLKSATCITRCNLGGAVCRHHANEYRLYLDAYN

MMISAGFSLWVYKQFDTYNLWNTFTRLQSLENVAFNVVNKGHFDGQQGEVPVSIINNT

VYTKVDGVDVELFENKTTLPVNVAFELWAKRNIKPVPEVKILNNLGVDIAANTVIWDY

KRDAPAHISTIGVCSMTDIAKKPIETICAPLTVFFDGRVDGQVDLFRNARNGVLITEG

SVKGLQPSVGPKQASLNGVTLIGEAVKTQFNYYKKVDGVVQQLPETYFTQSRNLQEFK

PRSQMEIDFLELAMDEFIERYKLEGYAFEHIVYGDFSHSQLGGLHLLIGLAKRFKESP

FELEDFIPMDSTVKNYFITDAQTGSSKCVCSVIDLLLDDFVEIIKSQDLSVVSKVVKV

TIDYTEISFMLWCKDGHVETFYPKLQSSQAWQPGVAMPNLYKMQRMLLEKCDLQNYGD

SATLPKGIMMNVAKYTQLCQYLNTLTLAVPYNMRVIHFGAGSDKGVAPGTAVLRQWLP

TGTLLVDSDLNDFVSDADSTLIGDCATVHTANKWDLIISDMYDPKTKNVTKENDSKEG

FFTYICGFIQQKLALGGSVAIKITEHSWNADLYKLMGHFAWWTAFVTNVNASSSEAFL

IGCNYLGKPREQIDGYVMHANYIFWRNTNPIQLXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXLVNN"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=1&to=180) 248..787

/gene="ORF1ab"

/product="leader protein"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=181&to=818) 788..2701

/gene="ORF1ab"

/product="nsp2"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=819&to=2763) 2702..8536

/gene="ORF1ab"

/product="nsp3"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=2764&to=3263) 8537..10036

/gene="ORF1ab"

/product="nsp4"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=3264&to=3569) 10037..10954

/gene="ORF1ab"

/product="3C-like proteinase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=3570&to=3859) 10955..11824

/gene="ORF1ab"

/product="nsp6"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=3860&to=3942) 11825..12073

/gene="ORF1ab"

/product="nsp7"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=3943&to=4140) 12074..12667

/gene="ORF1ab"

/product="nsp8"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=4141&to=4253) 12668..13006

/gene="ORF1ab"

/product="nsp9"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=4254&to=4392) 13007..13423

/gene="ORF1ab"

/product="nsp10"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=4393&to=5324) join(13424..13450,13450..16218)

/gene="ORF1ab"

/product="RNA-dependent RNA polymerase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=5325&to=5925) 16219..18021

/gene="ORF1ab"

/product="helicase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=5926&to=6452) 18022..19602

/gene="ORF1ab"

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

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=6453&to=6798) 19603..20640

/gene="ORF1ab"

/product="endoRNAse"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70434.1?from=6799&to=7096) 20641..21534

/gene="ORF1ab"

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

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=248&to=13465) 248..13465

/gene="ORF1ab"

/codon\_start=1

/product="ORF1a polyprotein"

/protein\_id="[UNQ70435.1](https://www.ncbi.nlm.nih.gov/protein/2211481702)"

/translation="MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEVLSEARQ

HLKDGTCGLVEVEKGVLPQLEQPYVFIKRSDARTAPHGHVMVELVAELEGIQYGRSGE

TLGVLVPHVGEIPVAYRKVLLRKNGNKGAGGHRYGADLKSFDLGDELGTDPYEDFQEN

WNTKHSSGVTRELMRELNGGAYTRYVDNNFCGPDGYPLECIKDLLARAGKASCTLSEQ

LDFIDTKRGVYCCREHEHEIAWYTERSEKSYELQTPFEIKLAKKFDTFNGECPNFVFP

LNSIIKTIQPRVEKKKLDGFMGRIRSVYPVASPNECNQMCLSTLMKCDHCGETSWQTG

DFVKATCEFCGTENLTKEGATTCGYLPQNAVVKIYCPACHNSEVGPEHSLAEYHNESG

LKTILRKGGRTIAFGGCVFSYVGCHNKCAYWVPRASANIGCNHTGVVGEGSEGLNDNL

LEILQKEKVNINIVGDFKLNEEIAIILASFSASTSAFVETVKGLDYKAFKQIVESCGN

FKVTKGKAKKGAWNIGEQKSILSPLYAFASEAARVVRSIFSRTLETAQNSVRVLQKAA

ITILDGISQYSLRLIDAMMFTSDLATNNLVVMAYITGGVVQLTSQWLTNIFGTVYEKL

KPVLDWLEEKFKEGVEFLRDGWEIVKFISTCACEIVGGQIVTCAKEIKESVQTFFKLV

NKFLALCADSIIIGGAKLKALNLGETFVTHSKGLYRKCVKSREETGLLMPLKAPKEII

FLEGETLPTEVLTEEVVLKTGDLQPLEQPTSEAVEAPLVGTPVCINGLMLLEIKDTEK

YCALAPNMMVTNNTFTLKGGAPTKVTFGDDTVIEVQGYKSVNIIFELDERIDKVLNEK

CSAYTVELGTEVNEFACVVADAVIKTLQPVSELLTPLGIDLDEWSMATYYLFDESGEF

KLASHMYCSFYPPDEDEEEGDCEEEEFEPSTQYEYGTEDDYQGKPLEFGATSAALQPE

EEQEEDWLDDDSQQTVGQQDGSEDNQTTTIQTIVEVQPQLEMELTPVVQTIEVNSFSG

YLKLTDNVYIKNADIVEEAKKVKPTVVVNAANVYLKHGGGVAGALNKATNNAMQVESD

DYIATNGPLKVGGSCVLSGHNLAKHCLHVVGPNVNKGEDIQLLKSAYENFNQHEVLLA

PLLSAGIFGADPIHSLRVCVDTVRTNVYLAVFDKNLYDKLVSSFLEMKSEKQVEQKIA

EIPKEEVKPFITESKPSVEQRKQDDKKIKACVEEVTTTLEETKFLTENLLLYIDINGN

LHPDSATLVSDIDITFLKKDAPYIVGDVVQEGVLTAVVIPTKKASGTTEMLAKALRKV

PTDNYITTYPGQGLNGYTVEEAKTVLKKCKSAFYILPSIISNEKQEILGTVSWNLREM

LAHAEETRKLMPVCVETKAIVSTIQRKYKGIKIQEGVVDYGARFYFYTSKTTVASLIN

TLNDLNETLVTMPLGYVTHGLNLEEAARYMRSLKVPATVSVSSPDAVTAYNGYLTSSS

KTPEEHFIETISLAGSYKDWSYSGQSTQLGIEFLKRGDKSVYYTSNPTTFHLDGEVIT

FDNLKTLLSLREVRTIKVFTTVDNINLHTQVVDMSMTYGQQFGPTYLDGADVTKIKPH

NSHEGKTFYVLPNDDTLRVEAFEYYHTTDPSFLGRYMSALNHTKKWKYPQVNGLTSIK

WADNNCYLATALLTLQQIELKFNPPALQDAYYRARAGEAANFCALILAYCNKTVGELG

DVRETMSYLFQHANLDSCKRVLNVVCKTCGQQQTTLKGVEAVMYMGTLSYEQFKKGVQ

IPCTCGKQATKYLVQQESPFVMMSAPPAQYELKHGTFTCASEYTGNYQCGHYKHITSK

ETLYCIDGALLTKSSEYKGPITDVFYKENSYTTTIKPVTYKLDGVVCTEIDPKLDNYY

KKDNSYFTEQPIDLVPNQPYPNASFDNFKFVCDNIKFADDLNQLTGYKKPASRELKVT

FFPDLNGDVVAIDYKHYTPSFKKGAKLLHKPIVWHVNNATNKATYKPNTWCIRCLWST

KPVETSNSFDVLKSEDAQGMDNLACEDLKPVSEEVVENPTIQKDVLECNVKTTEVVGD

IILKPANNSLKITEEVGHTDLMAAYVDNSSLTIKKPNELSRVLGLKTLATHGLAAVNS

VPWDTIANYAKPFLNKVVSTTTNIVTRCLNRVCTNYMPYFFTLLLQLCTFTRSTNSRI

KASMPTTIAKNTVKSVGKFCLEASFNYLKSPNFSKLINIIIWFLLLSVCLGSLIYSTA

ALGVLMSNLGMPSYCTGYREGYLNSTNVTIATYCTGSIPCSVCLSGLDSLDTYPSLET

IQITISSFKWDLTAFGLVAEWFLAYILFTRFFYVLGLAAIMQLFFSYFAVHFISNSWL

MWLIINLVQMAPISAMVRMYIFFASFYYVWKSYVHVVDGCNSSTCMMCYKRNRATRVE

CTTIVNGVRRSFYVYANGGKGFCKLHNWNCVNCDTFCAGSTFISDEVARDLSLQFKRP

INPTDQSSYIVDSVTVKNGSIHLYFDKAGQKTYERHSLSHFVNLDNLRANNTKGSLPI

NVIVFDGKSKCEESSAKSASVYYSQLMCQPILLLDQALVSDVGDSAEVAVKMFDAYVN

TFSSTFNVPMEKLKTLVATAEAELAKNVSLDNVLSTFISAARQGFVDSDVETKDVVEC

LKLSHQSDIEVTGDSCNNYMLTYNKVENMTPRDLGACIDCSARHINAQVAKSHNIALI

WNVKDFMSLSEQLRKQIRSAAKKNNLPFKLTCATTRQVVNVVTTKIALKGGKIVNNWL

KQLIKVTLVFLFVAAIFYLITPVHVMSKHTDFSSEIIGYKAIDGGVTRDIASTDTCFA

NKHADFDTWFSQRGGSYTNDKACPLIAAVITREVGFVVPGLPGTILRTTNGDFLHFLP

RVFSAVGNICYTPSKLIEYTDFATSACVLAAECTIFKDASGKPVPYCYDTNVLEGSVA

YESLRPDTRYVLMDGSIIQFPNTYLEGSVRVVTTFDSEYCRHGTCERSEAGVCVSTSG

RWVLNNDYYRSLPGVFCGVDAVNLFTNMFTPLIQPIGALDISASIVAGGIVAIVVTCL

AYYFMRFRRAFGEYSHVVAFNTLLFLMSFIVLCLTPVYSFLPGVYSVIYLYLTFYLTN

DVSFLAHIQWMVMFTPLVPFWITIAYIICISTKHFYWFFSNYLKRRVVFNGVSFSTFE

EAALCTFLLNKEMYLKLRSDVLLPFTQYNRYLALYNKYKYFSGAMDTTSYREAACCHL

AKALNDFSNSGSDVLYQPPQISITSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNG

LWLDDVVYCPRHVICTSEDMLNPNYEDLLIRKSNHNFLVQAGNVQLRVIGHSMQNCVL

KLKVDTANPKTPKYKFVRIQPGQTFSVLACYNGSPSGVYQCAMRHNFTIKGSFLNGSC

GSVGFNIDYDCVSFCYMHHMELPTGVHAGTDLEGNFYGPFVDRQTAQAAGTDTTITVN

VLAWLYAAVINGDRWFLNRFTTTLNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAV

LDMCASLKELLQNGMNGRTILGSALLEDEFTPFDVVRQCSGVTFQSAVKRTIKGTHHW

LLLTILTSLLVLVQSTQWSLFFFLYENAFLPFAMGIIAMSAFAMMFVKHKHAFLCLFL

LPSLATVAYFNMVYMPASWVMRIMTWLDMVDTSLSGLKLKDCVMYASAVVLLILMTAR

TVYDDGARRVWTLMNVLTLVYKVYYGNALDQAISMWALIISVTSNYSGVVTTVMFLAR

GIVFMCVEYCPIFFITGNTLQCIMLVYCFLGYFCTCYFGLFCLLNRYFRLTLGVYDYL

VSTQEFRYMNSQGLLPPKNSIDAFKLNIKLLGVGGKPCIKVATVQSKMSDVKCTSVVL

LSVLQQLRVESSSKLWAQCVQLHNDILLAKDTTEAFEKMVSLLSVLLSMQGAVDINKL

CEEMLDNRATLQAIASEFSSLPSYAAFATAQEAYEQAVANGDSEVVLKKLKKSLNVAK

SEFDRDAAMQRKLEKMADQAMTQMYKQARSEDKRAKVTSAMQTMLFTMLRKLDNDALN

NIINNARDGCVPLNIIPLTTAAKLMVVIPDYNTYKNTCDGTTFTYASALWEIQQVVDA

DSKIVQLSEISMDNSPNLAWPLIVTALRANSAVKLQNNELSPVALRQMSCAAGTTQTA

CTDDNALAYYNTTKGGRFVLALLSDLQDLKWARFPKSDGTGTIYTELEPPCRFVTDTP

KGPKVKYLYFIKGLNNLNRGMVLGSLAATVRLQAGNATEVPANSTVLSFCAFAVDAAK

AYKDYLASGGQPITNCVKMLCTHTGTGQAITVTPEANMDQESFGGASCCLYCRCHIDH

PNPKGFCDLKGKYVQIPTTCANDPVGFTLKNTVCTVCGMWKGYGCSCDQLREPMLQSA

DAQSFLNGFAV"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=1&to=180) 248..787

/gene="ORF1ab"

/product="leader protein"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=181&to=818) 788..2701

/gene="ORF1ab"

/product="nsp2"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=819&to=2763) 2702..8536

/gene="ORF1ab"

/product="nsp3"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=2764&to=3263) 8537..10036

/gene="ORF1ab"

/product="nsp4"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=3264&to=3569) 10037..10954

/gene="ORF1ab"

/product="3C-like proteinase"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=3570&to=3859) 10955..11824

/gene="ORF1ab"

/product="nsp6"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=3860&to=3942) 11825..12073

/gene="ORF1ab"

/product="nsp7"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=3943&to=4140) 12074..12667

/gene="ORF1ab"

/product="nsp8"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=4141&to=4253) 12668..13006

/gene="ORF1ab"

/product="nsp9"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=4254&to=4392) 13007..13423

/gene="ORF1ab"

/product="nsp10"

[mat\_peptide](https://www.ncbi.nlm.nih.gov/protein/UNQ70435.1?from=4393&to=4405) 13424..13462

/gene="ORF1ab"

/product="nsp11"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=13458&to=13485) 13458..13485

/gene="ORF1ab"

/note="Coronavirus frameshifting stimulation element

stem-loop 1"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=13470&to=13524) 13470..13524

/gene="ORF1ab"

/note="Coronavirus frameshifting stimulation element

stem-loop 2"

gap 21359..21522

/estimated\_length=164

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=21545&to=25366) 21545..25366

/gene="S"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=21545&to=25366) 21545..25366

/gene="S"

/codon\_start=1

/product="surface glycoprotein"

/protein\_id="[UNQ70436.1](https://www.ncbi.nlm.nih.gov/protein/2211481703)"

/translation="MFVFLVLLPLVSSQCVNLITRTQLPPAYTNSFTRGVYYPDKVFR

SSVLHSTQDLFLPFFSNVTWFHAIHVSGTNGTKRFDNPVLPFNDGVYFASTEKSNIIR

GWIFGTTLDSKTQSLLIVNNATNVVIKVCEFQFCNDPFLDVYYHKNNKSWMESEFRVY

SSANNCTFEYVSQPFLMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPINLGRDLPQ

GFSALEPLVDLPIGINITRFQTLLALHRSYLTPGDSSSGWTAGAAAYYVGYLQPRTFL

LKYNENGTITDAVDCALDPLSETKCTLKSFTVEKGIYQTSNFRVQPTESIVRFPNITN

LCPFDEVFNATRFASVYAWNRKRISNCVADYSVLYNFAPFFAFKCYGVSPTKLNDLCF

TNVYADSFVIRGNEVSQIAPGQTGNIADYNYKLPDDFTGCVIAWNSNKLDSKVGGNYN

YLYRLFRKSNLKPFERDISTEIYQAGNKPCNGVAGFNCYFPLRSYGFRPTYGVGHQPY

RVVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGTGVLTESNKKFLPFQQFG

RDIADTTDAVRDPQTLEILDITPCSFGGVSVITPGTNTSNQVAVLYQGVNCTEVPVAI

HADQLTPTWRVYSTGSNVFQTRAGCLIGAEYVNNSYECDIPIGAGICASYQTQTKSHR

RARSVASQSIIAYTMSLGAENSVAYSNNSIAIPTNFTISVTTEILPVSMTKTSVDCTM

YICGDSTECSNLLLQYGSFCTQLKRALTGIAVEQDKNTQEVFAQVKQIYKTPPIKYFG

GFNFSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLICAQKFN

GLTVLPPLLTDEMIAQYTSALLAGTITSGWTFGAGAALQIPFAMQMAYRFNGIGVTQN

VLYENQKLIANQFNSAIGKIQDSLSSTASALGKLQDVVNHNAQALNTLVKQLSSKFGA

ISSVLNDILSRLDKVEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMS

ECVLGQSKRVDFCGKGYHLMSFPQSAPHGVVFLHVTYVPAQEKNFTTAPAICHDGKAH

FPREGVFVSNGTHWFVTQRNFYEPQIITTDNTFVSGNCDVVIGIVNNTVYDPLQPELD

SFKEELDKYFKNHTSPDVDLGDISGINASVVNIQKEIDRLNEVAKNLNESLIDLQELG

KYEQYIKWPWYIWLGFIAGLIAIVMVTIMLCCMTSCCSCLKGCCSCGSCCKFDEDDSE

PVLKGVKLHYT"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=25375&to=26202) 25375..26202

/gene="ORF3a"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=25375&to=26202) 25375..26202

/gene="ORF3a"

/codon\_start=1

/product="ORF3a protein"

/protein\_id="[UNQ70437.1](https://www.ncbi.nlm.nih.gov/protein/2211481704)"

/translation="MDLFMRIFTIGTVTLKQGEIKDATPSDFVRATATIPIQASLPFG

WLIVGVALLAVFQSASKIITLKKRWQLALSKGVHFVCNLLLLFVTVYSHLLLVAAGLE

APFLYLYALVYFLQSINFVRIIMRLWLCWKCRSKNPLLYDANYFLCWHTNCYDYCIPY

NSVTSSIVITSGDGTTSPISEHDYQIGGYTEKWESGVKDCVVLHSYFTSDYYQLYSTQ

LSTDIGVEHVTFFIYNKIVDEPEEHVQIHTIDGSSGVVNPVMEPIYDEPTTTTSVPL"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=26227&to=26454) 26227..26454

/gene="E"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=26227&to=26454) 26227..26454

/gene="E"

/codon\_start=1

/product="envelope protein"

/protein\_id="[UNQ70438.1](https://www.ncbi.nlm.nih.gov/protein/2211481705)"

/translation="MYSFVSEEIGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCC

NIVNVSLVKPSFYVYSRVKNLNSSRVPDLLV"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=26505&to=27173) 26505..27173

/gene="M"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=26505&to=27173) 26505..27173

/gene="M"

/codon\_start=1

/product="membrane glycoprotein"

/protein\_id="[UNQ70439.1](https://www.ncbi.nlm.nih.gov/protein/2211481706)"

/translation="MADSNGTITVEELKKLLEEWNLVIGFLFLTWICLLQFAYANRNR

FLYIIKLIFLWLLWPVTLTCFVLAAVYRINWITGGIAIAMACLVGLMWLSYFIASFRL

FARTRSMWSFNPETNILLNVPLHGTILTRPLLESELVIGAVILRGHLRIAGHHLGRCD

IKDLPKEITVATSRTLSYYKLGASQRVAGDSGFAAYSRYRIGNYKLNTDHSSSSDNIA

LLVQ"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=27184&to=27369) 27184..27369

/gene="ORF6"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=27184&to=27369) 27184..27369

/gene="ORF6"

/codon\_start=1

/product="ORF6 protein"

/protein\_id="[UNQ70440.1](https://www.ncbi.nlm.nih.gov/protein/2211481707)"

/translation="MFHLVDFQVTIAEILLIIMRTFKVSIWNLDYIINLIIKNLSKSL

TENKYSQLDEEQPMEIL"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=27376&to=27741) 27376..27741

/gene="ORF7a"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=27376&to=27741) 27376..27741

/gene="ORF7a"

/codon\_start=1

/product="ORF7a protein"

/protein\_id="[UNQ70441.1](https://www.ncbi.nlm.nih.gov/protein/2211481708)"

/translation="MKIILFLALITLATCELYHYQECVRGTTVLLKEPCSSGTYEGNS

PFHPLADNKFALTCFSTQFAFACPDGVKHVYQLRARSVSPKLFIRQEEVQELYSPIFL

IVAAIVFITLCFTLKRKTE"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=27738&to=27869) 27738..27869

/gene="ORF7b"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=27738&to=27869) 27738..27869

/gene="ORF7b"

/codon\_start=1

/product="ORF7b"

/protein\_id="[UNQ70442.1](https://www.ncbi.nlm.nih.gov/protein/2211481709)"

/translation="MIELSLIDFYLCFLAFLLFLVLIMLIIFWFSLELQDHNETCHA"

gap 27877..28184

/estimated\_length=308

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=28185&to=28241) <28185..28241

/gene="ORF8"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=28185&to=28241) <28185..28241

/gene="ORF8"

/codon\_start=1

/product="ORF8 protein"

/protein\_id="[UNQ70443.1](https://www.ncbi.nlm.nih.gov/protein/2211481710)"

/translation="FYEDFLEYHDVRVVLDFI"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=28256&to=29515) 28256..29515

/gene="N"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=28256&to=29515) 28256..29515

/gene="N"

/codon\_start=1

/product="nucleocapsid phosphoprotein"

/protein\_id="[UNQ70444.1](https://www.ncbi.nlm.nih.gov/protein/2211481711)"

/translation="MSDNGPQNQRNAPRITFGGPSDSTGSNQNGERSGARSKQRRPQG

LPNNTASWFTALTQHGKEDLKFPRGQGVPINTNSSPDDQIGYYRRATRRIRGGDGKMK

DLSPRWYFYYLGTGPEAGLPYGANKDGIIWVATEGALNTPKDHIGTRNPANNAAIVLQ

LPQGTTLPKGFYAEGSRGGSQASSRSSSRSRNSSRNSTPGSSKRTSPARMAGNGGDAA

LALLLLDRLNQLESKMSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKAYNVTQAFGR

RGPEQTQGNFGDQELIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTYT

GVIKLDDKDPNFKDQVILLNKHIDAYKTFPPTEPKKDKKKKADETQALPQRQKKQQTV

TLLPAADLDDFSKQLQQSMSRADSTQA"

[gene](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=29540&to=29656) 29540..29656

/gene="ORF10"

[CDS](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=29540&to=29656) 29540..29656

/gene="ORF10"

/codon\_start=1

/product="ORF10 protein"

/protein\_id="[UNQ70445.1](https://www.ncbi.nlm.nih.gov/protein/2211481712)"

/translation="MGYINVFAFPFTIYSLLLCRMNSRNYIAQVDVVNFNLT"

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=29591&to=29626) 29591..29626

/gene="ORF10"

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

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=29611&to=29639) 29611..29639

/gene="ORF10"

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

[stem\_loop](https://www.ncbi.nlm.nih.gov/nuccore/ON060009.1?from=29710&to=29750) 29710..29750

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

ORIGIN

1 cccaggtaac aaaccaacca actttcgatc tcttgtagat ctgttctcta aacgaacttt

61 aaaatctgtg tggctgtcac tcggctgcat gcttagtgca ctcacgcagt ataattaata

121 actaattact gtcgttgaca ggacacgagt aactcgtcta tcttctgcag gctgcttacg

181 gtttcgtccg tgttgcagcc gatcatcagc acatctaggt tttgtccggg tgtgaccgaa

241 aggtaagatg gagagccttg tccctggttt caacgagaaa acacacgtcc aactcagttt

301 gcctgtttta caggttcgcg acgtgctcgt acgtggcttt ggagactccg tggaggaggt

361 cttatcagag gcacgtcaac atcttaaaga tggcacttgt ggcttagtag aagttgaaaa

421 aggcgttttg cctcaacttg aacagcccta tgtgttcatc aaacgttcgg atgctcgaac

481 tgcacctcat ggtcatgtta tggttgagct ggtagcagaa ctcgaaggca ttcagtacgg

541 tcgtagtggt gagacacttg gtgtccttgt ccctcatgtg ggcgaaatac cagtggctta

601 ccgcaaggtt cttcttcgta agaacggtaa taaaggagct ggtggccata ggtacggcgc

661 cgatctaaag tcatttgact taggcgacga gcttggcact gatccttatg aagattttca

721 agaaaactgg aacactaaac atagcagtgg tgttacccgt gaactcatgc gtgagcttaa

781 cggaggggca tacactcgct atgtcgataa caacttctgt ggccctgatg gctaccctct

841 tgagtgcatt aaagaccttc tagcacgtgc tggtaaagct tcatgcactt tgtccgaaca

901 actggacttt attgacacta agaggggtgt atactgctgc cgtgaacatg agcatgaaat

961 tgcttggtac acggaacgtt ctgaaaagag ctatgaattg cagacacctt ttgaaattaa

1021 attggcaaag aaatttgaca ccttcaatgg ggaatgtcca aattttgtat ttcccttaaa

1081 ttccataatc aagactattc aaccaagggt tgaaaagaaa aagcttgatg gctttatggg

1141 tagaattcga tctgtctatc cagttgcgtc accaaatgaa tgcaaccaaa tgtgcctttc

1201 aactctcatg aagtgtgatc attgtggtga aacttcatgg cagacgggcg attttgttaa

1261 agccacttgc gaattttgtg gcactgagaa tttgactaaa gaaggtgcca ctacttgtgg

1321 ttacttaccc caaaatgctg ttgttaaaat ttattgtcca gcatgtcaca attcagaagt

1381 aggacctgag catagtcttg ccgaatacca taatgaatct ggcttgaaaa ccattcttcg

1441 taagggtggt cgcactattg cctttggagg ctgtgtgttc tcttatgttg gttgccataa

1501 caagtgtgcc tattgggttc cacgtgctag cgctaacata ggttgtaacc atacaggtgt

1561 tgttggagaa ggttccgaag gtcttaatga caaccttctt gaaatactcc aaaaagagaa

1621 agtcaacatc aatattgttg gtgactttaa acttaatgaa gagatcgcca ttattttggc

1681 atctttttct gcttccacaa gtgcttttgt ggaaactgtg aaaggtttgg attataaagc

1741 attcaaacaa attgttgaat cctgtggtaa ttttaaagtt acaaaaggaa aagctaaaaa

1801 aggtgcctgg aatattggtg aacagaaatc aatactgagt cctctttatg catttgcatc

1861 agaggctgct cgtgttgtac gatcaatttt ctcccgcact cttgaaactg ctcaaaattc

1921 tgtgcgtgtt ttacagaagg ccgctataac aatactagat ggaatttcac agtattcact

1981 gagactcatt gatgctatga tgttcacatc tgatttggct actaacaatc tagttgtaat

2041 ggcctacatt acaggtggtg ttgttcagtt gacttcgcag tggctaacta acatctttgg

2101 cactgtttat gaaaaactca aacccgtcct tgattggctt gaagagaagt ttaaggaagg

2161 tgtagagttt cttagagacg gttgggaaat tgttaaattt atctcaacct gtgcttgtga

2221 aattgtcggt ggacaaattg tcacctgtgc aaaggaaatt aaggagagtg ttcagacatt

2281 ctttaagctt gtaaataaat ttttggcttt gtgtgctgac tctatcatta ttggtggagc

2341 taaacttaaa gccttgaatt taggtgaaac atttgtcacg cactcaaagg gattgtacag

2401 aaagtgtgtt aaatccagag aagaaactgg cctactcatg cctctaaaag ccccaaaaga

2461 aattatcttc ttagagggag aaacacttcc cacagaagtg ttaacagagg aagttgtctt

2521 gaaaactggt gatttacaac cattagaaca acctactagt gaagctgttg aagctccatt

2581 ggttggtaca ccagtttgta ttaacgggct tatgttgctc gaaatcaaag acacagaaaa

2641 gtactgtgcc cttgcaccta atatgatggt aacaaacaat accttcacac tcaaaggcgg

2701 tgcaccaaca aaggttactt ttggtgatga cactgtgata gaagtgcaag gttacaagag

2761 tgtgaatatc atttttgaac ttgatgaaag gattgataaa gtacttaatg agaagtgctc

2821 tgcctataca gttgaactcg gtacagaagt aaatgagttc gcctgtgttg tggcagatgc

2881 tgtcataaaa actttgcaac cagtatctga attacttaca ccactgggca ttgatttaga

2941 tgagtggagt atggctacat actacttatt tgatgagtct ggtgagttta aattggcttc

3001 acatatgtat tgttcttttt accctccaga tgaggatgaa gaagaaggtg attgtgaaga

3061 agaagagttt gagccatcaa ctcaatatga gtatggtact gaagatgatt accaaggtaa

3121 acctttggaa tttggtgcca cttctgctgc tcttcaacct gaagaagagc aagaagaaga

3181 ttggttagat gatgatagtc aacaaactgt tggtcaacaa gacggcagtg aggacaatca

3241 gacaactact attcaaacaa ttgttgaggt tcaacctcaa ttagagatgg aacttacacc

3301 agttgttcag actattgaag tgaatagttt tagtggttat ttaaaactta ctgacaatgt

3361 atacattaaa aatgcagaca ttgtggaaga agctaaaaag gtaaaaccaa cagtggttgt

3421 taatgcagcc aatgtttacc ttaaacatgg aggaggtgtt gcaggagcct taaataaggc

3481 tactaacaat gccatgcaag ttgaatctga tgattacata gctactaatg gaccacttaa

3541 agtgggtggt agttgtgttt taagcggaca caatcttgct aaacactgtc ttcatgttgt

3601 cggcccaaat gttaacaaag gtgaagacat tcaacttctt aagagtgctt atgaaaattt

3661 taatcagcac gaagttctac ttgcaccatt attatcagct ggtatttttg gtgctgaccc

3721 tatacattct ttaagagttt gtgtagatac tgttcgcaca aatgtctact tagctgtctt

3781 tgataaaaat ctctatgaca aacttgtttc aagctttttg gaaatgaaga gtgaaaagca

3841 agttgaacaa aagatcgctg agattcctaa agaggaagtt aagccattta taactgaaag

3901 taaaccttca gttgaacaga gaaaacaaga tgataagaaa atcaaagctt gtgttgaaga

3961 agttacaaca actctggaag aaactaagtt cctcacagaa aacttgttac tttatattga

4021 cattaatggc aatcttcatc cagattctgc cactcttgtt agtgacattg acatcacttt

4081 cttaaagaaa gatgctccat atatagtggg tgatgttgtt caagagggtg ttttaactgc

4141 tgtggttata cctactaaaa aggctagtgg cactactgaa atgctagcga aagctttgag

4201 aaaagtgcca acagacaatt atataaccac ttacccgggt cagggtttaa atggttacac

4261 tgtagaggag gcaaagacag tgcttaaaaa gtgtaaaagt gctttttaca ttctaccatc

4321 tattatctct aatgagaagc aagaaattct tggaactgtt tcttggaatt tgcgagaaat

4381 gcttgcacat gcagaagaaa cacgcaaatt aatgcctgtc tgtgtggaaa ctaaagccat

4441 agtttcaact atacagcgta aatataaggg tattaaaata caagagggtg tggttgatta

4501 tggtgctaga ttttactttt acaccagtaa aacaactgta gcgtcactta tcaacacact

4561 taacgatcta aatgaaactc ttgttacaat gccacttggc tatgtaacac atggcttaaa

4621 tttggaagaa gctgctcggt atatgagatc tctcaaagtg ccagctacag tttctgtttc

4681 ttcacctgat gctgttacag cgtataatgg ttatcttact tcttcttcta aaacacctga

4741 agaacatttt attgaaacca tctcacttgc tggttcctat aaagattggt cctattctgg

4801 acaatctaca caactaggta tagaatttct taagagaggt gataaaagtg tatattacac

4861 tagtaatcct accacattcc acctagatgg tgaagttatc acctttgaca atcttaagac

4921 acttctttct ttgagagaag tgaggactat taaggtgttt acaacagtag acaacattaa

4981 cctccacacg caagttgtgg acatgtcaat gacatatgga caacagtttg gtccaactta

5041 tttggatgga gctgatgtta ctaaaataaa acctcataat tcacatgaag gtaaaacatt

5101 ttatgtttta cctaatgatg acactctacg tgttgaggct tttgagtact accacacaac

5161 tgatcctagt tttctgggta ggtacatgtc agcattaaat cacactaaaa agtggaaata

5221 cccacaagtt aatggtttaa cttctattaa atgggcagat aacaactgtt atcttgccac

5281 tgcattgtta acactccaac aaatagagtt gaagtttaat ccacctgctc tacaagatgc

5341 ttattacaga gcaagggctg gtgaagctgc taacttttgt gcacttatct tagcctactg

5401 taataagaca gtaggtgagt taggtgatgt tagagaaaca atgagttact tgtttcaaca

5461 tgccaattta gattcttgca aaagagtctt gaacgtggtg tgtaaaactt gtggacaaca

5521 gcagacaacc cttaagggtg tagaagctgt tatgtacatg ggcacacttt cttatgaaca

5581 atttaagaaa ggtgttcaga taccttgtac gtgtggtaaa caagctacaa aatatctagt

5641 acaacaggag tcaccttttg ttatgatgtc agcaccacct gctcagtatg aacttaagca

5701 tggtacattt acttgtgcta gtgagtacac tggtaattac cagtgtggtc actataaaca

5761 tataacttct aaagaaactt tgtattgcat agacggtgct ttacttacaa agtcctcaga

5821 atacaaaggt cctattacgg atgttttcta caaagaaaac agttacacaa caaccataaa

5881 accagttact tataaattgg atggtgttgt ttgtacagaa attgacccta agttggacaa

5941 ttattataag aaagacaatt cttatttcac agagcaacca attgatcttg taccaaacca

6001 accatatcca aacgcaagct tcgataattt taagtttgta tgtgataata tcaaatttgc

6061 tgatgattta aaccagttaa ctggttataa gaaacctgct tcaagagagc ttaaagttac

6121 atttttccct gacttaaatg gtgatgtggt ggctattgat tataaacact acacaccctc

6181 ttttaagaaa ggagctaaat tgttacataa acctattgtt tggcatgtta acaatgcaac

6241 taataaagcc acgtataaac caaatacctg gtgtatacgt tgtctttgga gcacaaaacc

6301 agttgaaaca tcaaattcgt ttgatgtact gaagtcagag gacgcgcagg gaatggataa

6361 tcttgcctgc gaagatctaa aaccagtctc tgaagaagta gtggaaaatc ctaccataca

6421 gaaagacgtt cttgagtgta atgtgaaaac taccgaagtt gtaggagaca ttatacttaa

6481 accagcaaat aatagtttaa aaattacaga agaggttggc cacacagatc taatggctgc

6541 ttatgtagac aattctagtc ttactattaa gaaacctaat gaattatcta gagtattagg

6601 tttgaaaacc cttgctactc atggtttagc tgctgttaat agtgtccctt gggatactat

6661 agctaattat gctaagcctt ttcttaacaa agttgttagt acaactacta acatagttac

6721 acggtgttta aaccgtgttt gtactaatta tatgccttat ttctttactt tattgctaca

6781 attgtgtact tttactagaa gtacaaattc tagaattaaa gcatctatgc cgactactat

6841 agcaaagaat actgttaaga gtgtcggtaa attttgtcta gaggcttcat ttaattattt

6901 gaagtcacct aatttttcta aactgataaa tattataatt tggtttttac tattaagtgt

6961 ttgcctaggt tctttaatct actcaaccgc tgctttaggt gttttaatgt ctaatttagg

7021 catgccttct tactgtactg gttacagaga aggctatttg aactctacta atgtcactat

7081 tgcaacctac tgtactggtt ctataccttg tagtgtttgt cttagtggtt tagattcttt

7141 agacacctat ccttctttag aaactataca aattaccatt tcatctttta aatgggattt

7201 aactgctttt ggcttagttg cagagtggtt tttggcatat attcttttca ctaggttttt

7261 ctatgtactt ggattggctg caatcatgca attgtttttc agctattttg cagtacattt

7321 tattagtaat tcttggctta tgtggttaat aattaatctt gtacaaatgg ccccgatttc

7381 agctatggtt agaatgtaca tcttctttgc atcattttat tatgtatgga aaagttatgt

7441 gcatgttgta gacggttgta attcatcaac ttgtatgatg tgttacaaac gtaatagagc

7501 aacaagagtc gaatgtacaa ctattgttaa tggtgttaga aggtcctttt atgtctatgc

7561 taatggaggt aaaggctttt gcaaactaca caattggaat tgtgttaatt gtgatacatt

7621 ctgtgctggt agtacattta ttagtgatga agttgcgaga gacttgtcac tacagtttaa

7681 aagaccaata aatcctactg accagtcttc ttacatcgtt gatagtgtta cagtgaagaa

7741 tggttccatc catctttact ttgataaagc tggtcaaaag acttatgaaa gacattctct

7801 ctctcatttt gttaacttag acaacctgag agctaataac actaaaggtt cattgcctat

7861 taatgttata gtttttgatg gtaaatcaaa atgtgaagaa tcatctgcaa aatcagcgtc

7921 tgtttactac agtcagctta tgtgtcaacc tatactgtta ctagatcagg cattagtgtc

7981 tgatgttggt gatagtgcgg aagttgcagt taaaatgttt gatgcttacg ttaatacgtt

8041 ttcatcaact tttaacgtac caatggaaaa actcaaaaca ctagttgcaa ctgcagaagc

8101 tgaacttgca aagaatgtgt ccttagacaa tgtcttatct acttttattt cagcagctcg

8161 gcaagggttt gttgattcag atgtagaaac taaagatgtt gttgaatgtc ttaaattgtc

8221 acatcaatct gacatagaag ttactggcga tagttgtaat aactatatgc tcacctataa

8281 caaagttgaa aacatgacac cccgtgacct tggtgcttgt attgactgta gtgcgcgtca

8341 tattaatgcg caggtagcaa aaagtcacaa cattgctttg atatggaacg ttaaagattt

8401 catgtcattg tctgaacaac tacgaaaaca aatacgtagt gctgctaaaa agaataactt

8461 accttttaag ttgacatgtg caactactag acaagttgtt aatgttgtaa caacaaagat

8521 agcacttaag ggtggtaaaa ttgttaataa ttggttgaag cagttaatta aagttacact

8581 tgtgttcctt tttgttgctg ctattttcta tttaataaca cctgttcatg tcatgtctaa

8641 acatactgac ttttcaagtg aaatcatagg atacaaggct attgatggtg gtgtcactcg

8701 tgacatagca tctacagata cttgttttgc taacaaacat gctgattttg acacatggtt

8761 tagccagcgt ggtggtagtt atactaatga caaagcttgc ccattgattg ctgcagtcat

8821 aacaagagaa gtgggttttg tcgtgcctgg tttgcctggc acgatattac gcacaactaa

8881 tggtgacttt ttgcatttct tacctagagt ttttagtgca gttggtaaca tctgttacac

8941 accatcaaaa cttatagagt acactgactt tgcaacatca gcttgtgttt tggctgctga

9001 atgtacaatt tttaaagatg cttctggtaa gccagtacca tattgttatg ataccaatgt

9061 actagaaggt tctgttgctt atgaaagttt acgccctgac acacgttatg tgctcatgga

9121 tggctctatt attcaatttc ctaacaccta ccttgaaggt tctgttagag tggtaacaac

9181 ttttgattct gagtactgta ggcacggcac ttgtgaaaga tcagaagctg gtgtttgtgt

9241 atctactagt ggtagatggg tacttaacaa tgattattac agatctttac caggagtttt

9301 ctgtggtgta gatgctgtaa atttatttac taatatgttt acaccactaa ttcaacctat

9361 tggtgctttg gacatatcag catctatagt agctggtggt attgtggcta tcgtagtaac

9421 atgccttgcc tactatttta tgaggtttag aagagctttt ggtgaataca gtcatgtagt

9481 tgcctttaat actttactat tccttatgtc attcattgta ctctgtttaa caccagttta

9541 ctcattctta cctggtgttt attctgttat ttacttgtac ttgacatttt atcttactaa

9601 tgatgtttct tttttagcac atattcagtg gatggttatg ttcacacctt tagtaccttt

9661 ctggataaca attgcttata tcatttgtat ttccacaaag catttctatt ggttctttag

9721 taattaccta aagagacgtg tagtctttaa tggtgtttcc tttagtactt ttgaagaagc

9781 tgcgctgtgc acctttttgt taaataaaga aatgtatcta aagttgcgta gtgatgtgct

9841 attacctttt acgcaatata atagatactt agctctttat aataagtaca agtattttag

9901 tggagcaatg gatacaacta gctacagaga agctgcttgt tgtcatctcg caaaggctct

9961 caatgacttc agtaactcag gttctgatgt tctttaccaa ccaccacaaa tctctatcac

10021 ctcagctgtt ttgcagagtg gttttagaaa aatggcattc ccatctggta aagttgaggg

10081 ttgtatggta caagtaactt gtggtacaac tacacttaac ggtctttggc ttgatgacgt

10141 agtttactgt ccaagacatg tgatctgcac ctctgaagat atgcttaacc ctaattatga

10201 agatttactc attcgtaagt ctaatcataa tttcttggta caggctggta atgttcaact

10261 cagggttatt ggacattcta tgcaaaattg tgtacttaag cttaaggttg atacagccaa

10321 tcctaagaca cctaagtata agtttgttcg cattcaacca ggacagactt tttcagtgtt

10381 agcttgttac aatggttcac catctggtgt ttaccaatgt gctatgagac acaatttcac

10441 tattaagggt tcattcctta atggttcatg tggtagtgtt ggttttaaca tagattatga

10501 ctgtgtctct ttttgttaca tgcaccatat ggaattacca actggagttc atgctggcac

10561 agacttagaa ggtaactttt atggaccttt tgttgacagg caaacagcac aagcagctgg

10621 tacggacaca actattacag ttaatgtttt agcttggttg tacgctgctg ttataaatgg

10681 agacaggtgg tttctcaatc gatttaccac aactcttaat gactttaacc ttgtggctat

10741 gaagtacaat tatgaacctc taacacaaga ccatgttgac atactaggac ctctttctgc

10801 tcaaactgga attgccgttt tagatatgtg tgcttcatta aaagaattac tgcaaaatgg

10861 tatgaatgga cgtaccatat tgggtagtgc tttattagaa gatgaattta caccttttga

10921 tgttgttaga caatgctcag gtgttacttt ccaaagtgca gtgaaaagaa caatcaaggg

10981 tacacaccac tggttgttac tcacaatttt gacttcactt ttagttttag tccagagtac

11041 tcaatggtct ttgttctttt ttttgtatga aaatgccttt ttaccttttg ctatgggtat

11101 tattgctatg tctgcttttg caatgatgtt tgtcaaacat aagcatgcat ttctctgttt

11161 gtttttgtta ccttctcttg ccactgtagc ttattttaat atggtctata tgcctgctag

11221 ttgggtgatg cgtattatga catggttgga tatggttgat actagtttgt ctggtttgaa

11281 gctaaaagac tgtgttatgt atgcatcagc tgtagtgtta ctaatcctta tgacagcaag

11341 aactgtgtat gatgatggtg ctaggagagt gtggacactt atgaatgtct tgacactcgt

11401 ttataaagtt tattatggta atgctttaga tcaagccatt tccatgtggg ctcttataat

11461 ctctgttact tctaactact caggtgtagt tacaactgtc atgtttttgg ccagaggtat

11521 tgtttttatg tgtgttgagt attgccctat tttcttcata actggtaata cacttcagtg

11581 tataatgcta gtttattgtt tcttaggcta tttttgtact tgttactttg gcctcttttg

11641 tttactcaac cgctacttta gactgactct tggtgtttat gattacttag tttctacaca

11701 ggagtttaga tatatgaatt cacagggact actcccaccc aagaatagca tagatgcctt

11761 caaactcaac attaaattgt tgggtgttgg tggcaaacct tgtatcaaag tagccactgt

11821 acagtctaaa atgtcagatg taaagtgcac atcagtagtc ttactctcag ttttgcaaca

11881 actcagagta gaatcatcat ctaaattgtg ggctcaatgt gtccagttac acaatgacat

11941 tctcttagct aaagatacta ctgaagcctt tgaaaaaatg gtttcactac tttctgtttt

12001 gctttccatg cagggtgctg tagacataaa caagctttgt gaagaaatgc tggacaacag

12061 ggcaacctta caagctatag cctcagagtt tagttccctt ccatcatatg cagcttttgc

12121 tactgctcaa gaagcttatg agcaggctgt tgctaatggt gattctgaag ttgttcttaa

12181 aaagttgaag aagtctttga atgtggctaa atctgaattt gaccgtgatg cagccatgca

12241 acgtaagttg gaaaagatgg ctgatcaagc tatgacccaa atgtataaac aggctagatc

12301 tgaggacaag agggcaaaag ttactagtgc tatgcagaca atgcttttca ctatgcttag

12361 aaagttggat aatgatgcac tcaacaacat tatcaacaat gcaagagatg gttgtgttcc

12421 cttgaacata atacctctta caacagcagc caaactaatg gttgtcatac cagactataa

12481 cacatataaa aatacgtgtg atggtacaac atttacttat gcatcagcat tgtgggaaat

12541 ccaacaggtt gtagatgcag atagtaaaat tgttcaactt agtgaaatta gtatggacaa

12601 ttcacctaat ttagcatggc ctcttattgt aacagcttta agggccaatt ctgctgtcaa

12661 attacagaat aatgagctta gtcctgttgc actacgacag atgtcttgtg ctgccggtac

12721 tacacaaact gcttgcactg atgacaatgc gttagcttac tacaacacaa caaagggagg

12781 taggtttgta cttgcactgt tatccgattt acaggatttg aaatgggcta gattccctaa

12841 gagtgatgga actggtacta tttatacaga actggaacca ccttgtaggt ttgttacaga

12901 cacacctaaa ggtcctaaag tgaagtattt atactttatt aaaggattaa acaacctaaa

12961 tagaggtatg gtacttggta gtttagctgc cacagtacgt ctacaagctg gtaatgcaac

13021 agaagtgcct gccaattcaa ctgtattatc tttctgtgct tttgctgtag atgctgctaa

13081 agcttacaaa gattatctag ctagtggggg acaaccaatc actaattgtg ttaagatgtt

13141 gtgtacacac actggtactg gtcaggcaat aacagttaca ccggaagcca atatggatca

13201 agaatccttt ggtggtgcat cgtgttgtct gtactgccgt tgccacatag atcatccaaa

13261 tcctaaagga ttttgtgact taaaaggtaa gtatgtacaa atacctacaa cttgtgctaa

13321 tgaccctgtg ggttttacac ttaaaaacac agtctgtacc gtctgcggta tgtggaaagg

13381 ttatggctgt agttgtgatc aactccgcga acccatgctt cagtcagctg atgcacaatc

13441 gtttttaaac gggtttgcgg tgtaagtgca gcccgtctta caccgtgcgg cacaggcact

13501 agtactgatg tcgtatacag ggcttttgac atctacaatg ataaagtagc tggttttgct

13561 aaattcctaa aaactaattg ttgtcgcttc caagaaaagg acgaagatga caatttaatt

13621 gattcttact ttgtagttaa gagacacact ttctctaact accaacatga agaaacaatt

13681 tataatttac ttaaggattg tccagctgtt gctaaacatg acttctttaa gtttagaata

13741 gacggtgaca tggtaccaca tatatcacgt caacgtctta ctaaatacac aatggcagac

13801 ctcgtctatg ctttaaggca ttttgatgaa ggtaattgtg acacattaaa agaaatactt

13861 gtcacataca attgttgtga tgatgattat ttcaataaaa aggactggta tgattttgta

13921 gaaaacccag atatattacg cgtatacgcc aacttaggtg aacgtgtacg ccaagctttg

13981 ttaaaaacag tacaattctg tgatgccatg cgaaatgctg gtattgttgg tgtactgaca

14041 ttagataatc aagatctcaa tggtaactgg tatgatttcg gtgatttcat acaaaccacg

14101 ccaggtagtg gagttcctgt tgtagattct tattattcat tgttaatgcc tatattaacc

14161 ttgaccaggg ctttaactgc agagtcacat gttgacactg acttaacaaa gccttacatt

14221 aagtgggatt tgttaaaata tgacttcacg gaagagaggt taaaactctt tgaccgttat

14281 tttaaatatt gggatcagac ataccaccca aattgtgtta actgtttgga tgacagatgc

14341 attctgcatt gtgcaaactt taatgtttta ttctctacag tgttcccact tacaagtttt

14401 ggaccactag tgagaaaaat atttgttgat ggtgttccat ttgtagtttc aactggatac

14461 cacttcagag agctaggtgt tgtacataat caggatgtaa acttacatag ctctagactt

14521 agttttaagg aattacttgt gtatgctgct gaccctgcta tgcacgctgc ttctggtaat

14581 ctattactag ataaacgcac tacgtgcttt tcagtagctg cacttactaa caatgttgct

14641 tttcaaactg tcaaacccgg taattttaac aaagacttct atgactttgc tgtgtctaag

14701 ggtttcttta aggaaggaag ttctgttgaa ttaaaacact tcttctttgc tcaggatggt

14761 aatgctgcta tcagcgatta tgactactat cgttataatc taccaacaat gtgtgatatc

14821 agacaactac tatttgtagt tgaagttgtt gataagtact ttgattgtta cgatggtggc

14881 tgtattaatg ctaaccaagt catcgtcaac aacctagaca aatcagctgg ttttccattt

14941 aataaatggg gtaaggctag actttattat gattcaatga gttatgagga tcaagatgca

15001 cttttcgcat atacaaaacg taatgtcatc cctactataa ctcaaatgaa tcttaagtat

15061 gccattagtg caaagaatag agctcgcacc gtagctggtg tctctatctg tagtactatg

15121 accaatagac agtttcatca aaaattattg aaatcaatag ccgccactag aggagctact

15181 gtagtaattg gaacaagcaa attctatggt ggttggcaca acatgttaaa aactgtttat

15241 agtgatgtag aaaaccctca ccttatgggt tgggattatc ctaaatgtga tagagccatg

15301 cctaacatgc ttagaattat ggcctcactt gttcttgctc gcaaacatac aacgtgttgt

15361 agcttgtcac accgtttcta tagattagct aatgagtgtg ctcaagtatt gagtgaaatg

15421 gtcatgtgtg gcggttcact atatgttaaa ccaggtggaa cctcatcagg agatgccaca

15481 actgcttatg ctaatagtgt ttttaacatt tgtcaagctg tcacggccaa tgttaatgca

15541 cttttatcta ctgatggtaa caaaattgcc gataagtatg tccgcaattt acaacacaga

15601 ctttatgagt gtctctatag aaatagagat gttgacacag actttgtgaa tgagttttac

15661 gcatatttgc gtaaacattt ctcaatgatg atactttctg acgatgctgt tgtgtgtttc

15721 aatagcactt atgcatctca aggtctagtg gctagcataa agaactttaa gtcagttctt

15781 tattatcaaa acaatgtttt tatgtctgaa gcaaaatgtt ggactgagac tgaccttact

15841 aaaggacctc atgaattttg ctctcaacat acaatgctag ttaaacaggg tgatgattat

15901 gtgtaccttc cttacccaga tccatcaaga atcctagggg ccggctgttt tgtagatgat

15961 atcgtaaaaa cagatggtac acttatgatt gaacggttcg tgtctttagc tatagatgct

16021 tacccactta ctaaacatcc taatcaggag tatgctgatg tctttcattt gtacttacaa

16081 tacataagaa agctacatga tgagttaaca ggacacatgt tagacatgta ttctgttatg

16141 cttactaatg ataacacttc aaggtattgg gaacctgagt tttatgaggc tatgtacaca

16201 ccgcatacag tcttacaggc tgttggggct tgtgttcttt gcaattcaca gacttcatta

16261 agatgtggtg cttgcatacg tagaccattc ttatgttgta aatgctgtta cgaccatgtc

16321 atatcaacat cacataaatt agtcttgtct gttaatccgt atgtttgcaa tgctccaggt

16381 tgtgatgtca cagatgtgac tcaactttac ttaggaggta tgagctatta ttgtaaatca

16441 cataaaccac ccattagttt tccattgtgt gctaatggac aagtttttgg tttatataaa

16501 aatacatgtg ttggtagcga taatgttact gactttaatg caattgcaac atgtgactgg

16561 acaaatgctg gtgattacat tttagctaac acctgtactg aaagactcaa gctttttgca

16621 gcagaaacgc tcaaagctac tgaggagaca tttaaactgt cttatggtat tgctactgta

16681 cgtgaagtgc tgtctgacag agaattacat ctttcatggg aagttggtaa acctagacca

16741 ccacttaacc gaaattatgt ctttactggt tatcgtgtaa ctaaaaacag taaagtacaa

16801 ataggagagt acacctttga aaaaggtgac tatggtgatg ctgttgttta ccgaggtaca

16861 acaacttaca aattaaatgt tggtgattat tttgtgctga catcacatac agtaatgcca

16921 ttaagtgcac ctacactagt gccacaagag cactatgtta gaattactgg cttataccca

16981 acactcaata tctcagatga gttttctagc aatgttgcaa attatcaaaa ggttggtatg

17041 caaaagtatt ctacactcca gggaccacct ggtactggta agagtcattt tgctattggc

17101 ctagctctct actacccttc tgctcgcata gtgtatacag cttgctctca tgccgctgtt

17161 gatgcactat gtgagaaggc attaaaatat ttgcctatag ataaatgtag tagaattata

17221 cctgcacgtg ctcgtgtaga gtgttttgat aaattcaaag tgaattcaac attagaacag

17281 tatgtctttt gtactgtaaa tgcattgcct gagacgacag cagatatagt tgtctttgat

17341 gaaatttcaa tggccacaaa ttatgatttg agtgttgtca atgccagatt atgtgctaag

17401 cactatgtgt acattggcga ccctgctcaa ttacctgcac cacgcacatt gctaactaag

17461 ggcacactag aaccagaata tttcaattca gtgtgtagac ttatgaaaac tataggtcca

17521 gacatgttcc tcggaacttg tcggcgttgt cctgctgaaa ttgttgacac tgtgagtgct

17581 ttggtttatg ataataagct taaagcacat aaagacaaat cagctcaatg ctttaaaatg

17641 ttttataagg gtgttatcac gcatgatgtt tcatctgcaa ttaacaggcc acaaataggc

17701 gtggtaagag aattccttac acgtaaccct gcttggagaa aagctgtctt tatttcacct

17761 tataattcac agaatgctgt agcctcaaag attttgggac taccaactca aactgttgat

17821 tcatcacagg gctcagaata tgactatgtc atattcactc aaaccactga aacagctcac

17881 tcttgtaatg taaacagatt taatgttgct attaccagag caaaagtagg catactttgc

17941 ataatgtctg atagagacct ttatgacaag ttgcaattta caagtcttga aattccacgt

18001 aggaatgtgg caactttaca agctgaaaat gtaacaggac tctttaaaga ttgtagtaag

18061 gtaatcactg ggttacatcc tacacaggca cctacacacc tcagtgttga cactaaattc

18121 aaaactgaag gtttatgtgt tgacgtacct ggcataccta aggacatgac ctatagaaga

18181 ctcatctcta tgatgggttt taaaatgaat tatcaagtta atggttaccc taacatgttt

18241 atcacccgcg aagaagctat aagacatgta cgtgcatgga ttggcttcga tgtcgagggg

18301 tgtcatgcta ctagagaagc tgttggtacc aatttacctt tacagctagg tttttctaca

18361 ggtgttaacc tagttgctgt acctacaggt tatgttgata cacctaataa tacagatttt

18421 tccagagtta gtgctaaacc accgcctgga gatcaattta aacacctcat accacttatg

18481 tacaaaggac ttccttggaa tgtagtgcgt ataaagattg tacaaatgtt aagtgacaca

18541 cttaaaaatc tctctgacag agtcgtattt gtcttatggg cacatggctt tgagttgaca

18601 tctatgaagt attttgtgaa aataggacct gagcgcacct gttgtctatg tgatagacgt

18661 gccacatgct tttccactgc ttcagacact tatgcctgtt ggcatcattc tattggattt

18721 gattacgtct ataatccgtt tatgattgat gttcaacaat ggggttttac aggtaaccta

18781 caaagcaacc atgatctgta ttgtcaagtc catggtaatg cacatgtagc tagttgtgat

18841 gcaatcatga ctaggtgtct agctgtccac gagtgctttg ttaagcgtgt tgactggact

18901 attgaatatc ctataattgg tgatgaactg aagattaatg cggcttgtag aaaggttcaa

18961 cacatggttg ttaaagctgc attattagca gacaaattcc cagttcttca cgacattggt

19021 aaccctaaag ctattaagtg tgtacctcaa gctgatgtag aatggaagtt ctatgatgca

19081 cagccttgta gtgacaaagc ttataaaata gaagaattat tctattctta tgccacacat

19141 tctgacaaat tcacagatgg tgtatgccta ttttggaatt gcaatgtcga tagatatcct

19201 gctaattcca ttgtttgtag atttgacact agagtgctat ctaaccttaa cttgcctggt

19261 tgtgatggtg gcagtttgta tgtaaataaa catgcattcc acacaccagc ttttgataaa

19321 agtgcttttg ttaatttaaa acaattacca tttttctatt actctgacag tccatgtgag

19381 tctcatggaa aacaagtagt gtcagatata gattatgtac cactaaagtc tgctacgtgt

19441 ataacacgtt gcaatttagg tggtgctgtc tgtagacatc atgctaatga gtacagattg

19501 tatctcgatg cttataacat gatgatctca gctggcttta gcttgtgggt ttacaaacaa

19561 tttgatactt ataacctctg gaacactttt acaagacttc agagtttaga aaatgtggct

19621 tttaatgttg taaataaggg acactttgat ggacaacagg gtgaagtacc agtttctatc

19681 attaataaca ctgtttacac aaaagttgat ggtgttgatg tagaattgtt tgaaaataaa

19741 acaacattac ctgttaatgt agcatttgag ctttgggcta agcgcaacat taaaccagta

19801 ccagaggtga aaatactcaa taatttgggt gtggacattg ctgctaatac tgtgatctgg

19861 gactacaaaa gagatgctcc agcacatata tctactattg gtgtttgttc tatgactgac

19921 atagccaaga aaccaattga aacgatttgt gcaccactca ctgtcttttt tgatggtaga

19981 gttgatggtc aagtagactt atttagaaat gcccgtaatg gtgttcttat tacagagggt

20041 agtgttaaag gtttacaacc atctgtaggt cccaaacaag ctagtcttaa tggagtcaca

20101 ttaattggag aagccgtaaa aacacagttc aattattata agaaagttga tggtgttgtc

20161 caacaattac ctgaaactta ctttactcag agtagaaatt tacaagaatt taaacccagg

20221 agtcaaatgg aaattgattt cttagaatta gctatggatg aattcattga acggtataaa

20281 ttagaaggct atgccttcga acatatcgtt tatggagatt ttagtcatag tcagttaggt

20341 ggtttacatc tactgattgg actagctaaa cgttttaagg aatcaccttt tgaattagaa

20401 gattttattc ctatggacag tacagttaaa aactatttca taacagatgc gcaaacaggt

20461 tcatctaagt gtgtgtgttc tgttattgat ttattacttg atgattttgt tgaaataata

20521 aaatcccaag atttatctgt agtttctaag gttgtcaaag tgactattga ctatacagaa

20581 atttcattta tgctttggtg taaagatggc catgtagaaa cattttaccc aaaattacaa

20641 tctagtcaag cgtggcaacc gggtgttgct atgcctaatc tttacaaaat gcaaagaatg

20701 ctattagaaa agtgtgacct tcaaaattat ggtgatagtg caacattacc taaaggcata

20761 atgatgaatg tcgcaaaata tactcaactg tgtcaatatt taaacacatt aacattagct

20821 gtaccctata atatgagagt tatacatttt ggtgctggtt ctgataaagg agttgcacca

20881 ggtacagctg ttttaagaca gtggttgcct acgggtacgc tgcttgtcga ttcagatctt

20941 aatgactttg tctctgatgc agattcaact ttgattggtg attgtgcaac tgtacataca

21001 gctaataaat gggatctcat tattagtgat atgtacgacc ctaagactaa aaatgttaca

21061 aaagaaaatg actctaaaga gggttttttc acttacattt gtgggtttat acaacaaaag

21121 ctagctcttg gaggttccgt ggctataaag ataacagaac attcttggaa tgctgatctt

21181 tataagctca tgggacactt cgcatggtgg acagcctttg ttactaatgt gaatgcgtca

21241 tcatctgaag catttttaat tggatgtaat tatcttggca aaccacgcga acaaatagat

21301 ggttatgtca tgcatgcaaa ttacatattt tggaggaata caaatccaat tcagttgtnn

21361 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn

21421 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn

21481 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nncttgttaa caactaaacg

21541 aacaatgttt gtttttcttg ttttattgcc actagtctct agtcagtgtg ttaatcttat

21601 aaccagaact caattacccc ctgcatacac taattctttc acacgtggtg tttattaccc

21661 tgacaaagtt ttcagatcct cagttttaca ttcaactcag gacttgttct tacctttctt

21721 ttccaatgtt acttggttcc atgctataca tgtctctggg accaatggta ctaagaggtt

21781 tgataaccct gtcctaccat ttaatgatgg tgtttatttt gcttccactg agaagtctaa

21841 cataataaga ggctggattt ttggtactac tttagattcg aagacccagt ccctacttat

21901 tgttaataac gctactaatg ttgttattaa agtctgtgaa tttcaatttt gtaatgatcc

21961 atttttggat gtttattacc acaaaaacaa caaaagttgg atggaaagtg agttcagagt

22021 ttattctagt gcgaataatt gcacttttga atatgtctct cagccttttc ttatggacct

22081 tgaaggaaaa cagggtaatt tcaaaaatct tagggaattt gtgtttaaga atattgatgg

22141 ttattttaaa atatattcta agcacacgcc tattaattta gggcgtgatc tccctcaggg

22201 tttttcggct ttagaaccat tggtagattt gccaataggt attaacatca ctaggtttca

22261 aactttactt gctttacata gaagttattt gactcctggt gattcttctt caggttggac

22321 agctggtgct gcagcttatt atgtgggtta tcttcaacct aggacttttc tattaaaata

22381 taatgaaaat ggaaccatta cagatgctgt agactgtgca cttgaccctc tctcagaaac

22441 aaagtgtacg ttgaaatcct tcactgtaga aaaaggaatc tatcaaactt ctaactttag

22501 agtccaacca acagaatcta ttgttagatt tcctaatatt acaaacttgt gcccttttga

22561 tgaagttttt aacgccacca gatttgcatc tgtttatgct tggaacagga agagaatcag

22621 caactgtgtt gctgattatt ctgtcctata taatttcgca ccatttttcg cttttaagtg

22681 ttatggagtg tctcctacta aattaaatga tctctgcttt actaatgtct atgcagattc

22741 atttgtaatt agaggtaatg aagtcagcca aatcgctcca gggcaaactg gaaatattgc

22801 tgattataat tataaattac cagatgattt tacaggctgc gttatagctt ggaattctaa

22861 caagcttgat tctaaggttg gtggtaatta taattacctg tatagattgt ttaggaagtc

22921 taatctcaaa ccttttgaga gagatatttc aactgaaatc tatcaggccg gtaacaaacc

22981 ttgtaatggt gttgcaggtt ttaattgtta ctttccttta cgatcatatg gtttccgacc

23041 cacttatggt gttggtcacc aaccatacag agtagtagta ctttcttttg aacttctaca

23101 tgcaccagca actgtttgtg gacctaaaaa gtctactaat ttggttaaaa acaaatgtgt

23161 caatttcaac ttcaatggtt taacaggcac aggtgttctt actgagtcta acaaaaagtt

23221 tctgcctttc caacaatttg gcagagacat tgctgacact actgatgctg tccgtgatcc

23281 acagacactt gagattcttg acattacacc atgttctttt ggtggtgtca gtgttataac

23341 accaggaaca aatacttcta accaggttgc tgttctttat cagggtgtta actgcacaga

23401 agtccctgtt gctattcatg cagatcaact tactcctact tggcgtgttt attctacagg

23461 ttctaatgtt tttcaaacac gtgcaggctg tttaataggg gctgaatatg tcaacaactc

23521 atatgagtgt gacataccca ttggtgcagg tatatgcgct agttatcaga ctcagactaa

23581 gtctcatcgg cgggcacgta gtgtagctag tcaatccatc attgcctaca ctatgtcact

23641 tggtgcagaa aattcagttg cttactctaa taactctatt gccataccca caaattttac

23701 tattagtgtt accacagaaa ttctaccagt gtctatgacc aagacatcag tagattgtac

23761 aatgtacatt tgtggtgatt caactgaatg cagcaatctt ttgttgcaat atggcagttt

23821 ttgtacacaa ttaaaacgtg ctttaactgg aatagctgtt gaacaagaca aaaacaccca

23881 agaagttttt gcacaagtca aacaaattta caaaacacca ccaattaaat attttggtgg

23941 ttttaatttt tcacaaatat taccagatcc atcaaaacca agcaagaggt catttattga

24001 agatctactt ttcaacaaag tgacacttgc agatgctggc ttcatcaaac aatatggtga

24061 ttgccttggt gatattgctg ctagagacct catttgtgca caaaagttta acggccttac

24121 tgttttgcca cctttgctca cagatgaaat gattgctcaa tacacttctg cactgttagc

24181 gggtacaatc acttctggtt ggacctttgg tgcaggtgct gcattacaaa taccatttgc

24241 tatgcaaatg gcttataggt ttaatggtat tggagttaca cagaatgttc tctatgagaa

24301 ccaaaaattg attgccaacc aatttaatag tgctattggc aaaattcaag actcactttc

24361 ttccacagca agtgcacttg gaaaacttca agatgtggtc aaccataatg cacaagcttt

24421 aaacacgctt gttaaacaac ttagctccaa atttggtgca atttcaagtg ttttaaatga

24481 tatcctttca cgtcttgaca aagttgaggc tgaagtgcaa attgataggt tgatcacagg

24541 cagacttcaa agtttgcaga catatgtgac tcaacaatta attagagctg cagaaatcag

24601 agcttctgct aatcttgctg ctactaaaat gtcagagtgt gtacttggac aatcaaaaag

24661 agttgatttt tgtggaaagg gctatcatct tatgtccttc cctcagtcag cacctcatgg

24721 tgtagtcttc ttgcatgtga cttatgtccc tgcacaagaa aagaacttca caactgctcc

24781 tgccatttgt catgatggaa aagcacactt tcctcgtgaa ggtgtctttg tttcaaatgg

24841 cacacactgg tttgtaacac aaaggaattt ttatgaacca caaatcatta ctacagacaa

24901 cacatttgtg tctggtaact gtgatgttgt aataggaatt gtcaacaaca cagtttatga

24961 tcctttgcaa cctgaattag attcattcaa ggaggagtta gataaatatt ttaagaatca

25021 tacatcacca gatgttgatt taggtgacat ctctggcatt aatgcttcag ttgtaaacat

25081 tcaaaaagaa attgaccgcc tcaatgaggt tgccaagaat ttaaatgaat ctctcatcga

25141 tctccaagaa cttggaaagt atgagcagta tataaaatgg ccatggtaca tttggctagg

25201 ttttatagct ggcttgattg ccatagtaat ggtgacaatt atgctttgct gtatgaccag

25261 ttgctgtagt tgtctcaagg gctgttgttc ttgtggatcc tgctgcaaat ttgatgaaga

25321 cgactctgag ccagtgctca aaggagtcaa attacattac acataaacga acttatggat

25381 ttgtttatga gaatctttac aattggaact gtaactttga agcaaggtga aatcaaggat

25441 gctactcctt cagattttgt tcgcgctact gcaacgatac cgatacaagc ctcactccct

25501 ttcggatggc ttattgttgg cgttgcactt cttgctgttt ttcagagcgc ttccaaaatc

25561 ataactctca aaaagagatg gcaactagca ctctccaagg gtgttcactt tgtttgcaac

25621 ttgctgttgt tgtttgtaac agtttactca caccttttgc tcgttgctgc tggccttgaa

25681 gccccttttc tctatcttta tgctttagtc tacttcttgc agagtataaa ctttgtaaga

25741 ataataatga ggctttggct ttgctggaaa tgccgttcca aaaacccatt actttatgat

25801 gccaactatt ttctttgctg gcatactaat tgttacgact attgtatacc ttacaatagt

25861 gtaacttctt caattgtcat tacttcaggt gatggcacaa caagtcctat ttctgaacat

25921 gactaccaga ttggtggtta tactgaaaaa tgggaatctg gagtaaaaga ctgtgttgta

25981 ttacacagtt acttcacttc agactattac cagctgtact caactcaatt gagtacagac

26041 attggtgttg aacatgttac cttcttcatc tacaataaaa ttgttgatga gcctgaagaa

26101 catgtccaaa ttcacacaat cgacggttca tccggagttg ttaatccagt aatggaacca

26161 atttatgatg aaccgacgac gactactagc gtgcctttgt aagcacaagc tgatgagtac

26221 gaacttatgt actcattcgt ttcggaagag ataggtacgt taatagttaa tagcgtactt

26281 ctttttcttg ctttcgtggt attcttgcta gttacactag ccatccttac tgcgcttcga

26341 ttgtgtgcgt actgctgcaa tattgttaac gtgagtcttg taaaaccttc tttttacgtt

26401 tactctcgtg ttaaaaatct gaattcttct agagttcctg atcttctggt ctaaacgaac

26461 taaatattat attagttttt ctgtttggaa ctttaatttt agccatggca gattccaacg

26521 gtactattac cgttgaagag cttaaaaagc tccttgaaga atggaaccta gtaataggtt

26581 tcctattcct tacatggatt tgtcttctac aatttgccta tgccaacagg aataggtttt

26641 tgtatataat taagttaatt ttcctctggc tgttatggcc agtaacttta acttgttttg

26701 tgcttgctgc tgtttacaga ataaattgga tcaccggtgg aattgctatc gcaatggctt

26761 gtcttgtagg cttgatgtgg ctcagctact tcattgcttc tttcagactg tttgcgcgta

26821 cgcgttccat gtggtcattt aatccagaaa ctaacattct tctcaacgtg ccactccatg

26881 gcactattct gaccagaccg cttctagaaa gtgaactcgt aatcggagct gtgatccttc

26941 gtggacatct tcgtattgct ggacaccatc taggacgctg tgacatcaag gacctgccta

27001 aagaaatcac tgttgctaca tcacgaacgc tttcttatta caaattggga gcttcgcagc

27061 gtgtagcagg tgactcaggt tttgctgcat acagtcgcta caggattggc aactataaat

27121 taaacacaga ccattccagt agcagtgaca atattgcttt gcttgtacag taagtgacaa

27181 cagatgtttc atctcgttga ctttcaggtt actatagcag agatattact aattattatg

27241 cggactttta aagtttccat ttggaatctt gattacatca taaacctcat aattaaaaat

27301 ttatctaagt cactaactga gaataaatat tctcaattag atgaagagca accaatggag

27361 attctctaaa cgaacatgaa aattattctt ttcttggcac tgataacact cgctacttgt

27421 gagctttatc actaccaaga gtgtgttaga ggtacaacag tacttttaaa agaaccttgc

27481 tcttctggaa catacgaggg caattcacca tttcatcctc tagctgataa caaatttgca

27541 ctgacttgct ttagcactca atttgctttt gcttgtcctg acggcgtaaa acacgtctat

27601 cagttacgtg ccagatcagt ttcacctaaa ctgttcatca gacaagagga agttcaagaa

27661 ctttactctc caatttttct tattgttgcg gcaatagtgt ttataacact ttgcttcaca

27721 ctcaaaagaa agacagaatg attgaacttt cattaattga cttctatttg tgctttttag

27781 cctttctgtt attccttgtt ttaattatgc ttattatctt ttggttctca cttgaactgc

27841 aagatcataa tgaaacttgt cacgcctaaa cgaacannnn nnnnnnnnnn nnnnnnnnnn

27901 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn

27961 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn

28021 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn

28081 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn

28141 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnttctat gaagactttt

28201 tagagtatca tgacgttcgt gttgttttag atttcatcta aacgaacaaa ctaaaatgtc

28261 tgataatgga ccccaaaatc agcgaaatgc accccgcatt acgtttggtg gaccctcaga

28321 ttcaactggc agtaaccaga atggagaacg cagtggggcg cgatcaaaac aacgtcggcc

28381 ccaaggttta cccaataata ctgcgtcttg gttcaccgct ctcactcaac atggcaagga

28441 agaccttaaa ttccctcgag gacaaggcgt tccaattaac accaatagca gtccagatga

28501 ccaaattggc tactaccgaa gagctaccag acgaattcgt ggtggtgacg gtaaaatgaa

28561 agatctcagt ccaagatggt atttctacta cctaggaact gggccagaag ctggacttcc

28621 ctatggtgct aacaaagacg gcatcatatg ggttgcaact gagggagcct tgaatacacc

28681 aaaagatcac attggcaccc gcaatcctgc taacaatgct gcaatcgtgc tacaacttcc

28741 tcaaggaaca acattgccaa aaggcttcta cgcagaaggg agcagaggcg gcagtcaagc

28801 ctcttctcgt tcctcatcac gtagtcgcaa cagttcaaga aattcaactc caggcagcag

28861 taaacgaact tctcctgcta gaatggctgg caatggcggt gatgctgctc ttgctttgct

28921 gctgcttgac agattgaacc agcttgagag caaaatgtct ggtaaaggcc aacaacaaca

28981 aggccaaact gtcactaaga aatctgctgc tgaggcttct aagaagcctc ggcaaaaacg

29041 tactgccact aaagcataca atgtaacaca agctttcggc agacgtggtc cagaacaaac

29101 ccaaggaaat tttggggacc aggaactaat cagacaagga actgattaca aacattggcc

29161 gcaaattgca caatttgccc ccagcgcttc agcgttcttc ggaatgtcgc gcattggcat

29221 ggaagtcaca ccttcgggaa cgtggttgac ctacacaggt gtcatcaaat tggatgacaa

29281 agatccaaat ttcaaagatc aagtcatttt gctgaataag catattgacg catacaaaac

29341 attcccacca acagagccta aaaaggacaa aaagaagaag gctgatgaaa ctcaagcctt

29401 accgcagaga cagaagaaac agcaaactgt gactcttctt cctgctgcag atttggatga

29461 tttctccaaa caattgcaac aatccatgag ccgtgctgac tcaactcagg cctaaactca

29521 tgcagaccac acaaggcaga tgggctatat aaacgttttc gcttttccgt ttacgatata

29581 tagtctactc ttgtgcagaa tgaattctcg taactacata gcacaagtag atgtagttaa

29641 ctttaatctc acatagcaat ctttaatcag tgtgtaacat tagggaggac ttgaaagagc

29701 caccacattt tcaccgaggc cacgcggagt acgatcgagt gtacagtgaa caatgctagg

29761 gagagctgcc ta

//