

 NCBI

PubMed Nucleotide Protein Genome Structure PMC Taxonomy OMIM

Search **Nucleotide** for **Go** **Clear**

Limits Preview/Index History Clipboard Data

Display default Show: 20 Send to File Get Subsequence Fe

1: J00895. Gallus gallus ova...[gi:212504]

Links

LOCUS CHKOVAL 9206 bp DNA linear VRT 23-JUL-2002
 DEFINITION Gallus gallus ovalbumin gene, complete cds.
 ACCESSION J00895 M24999
 VERSION J00895.1 GI:212504
 KEYWORDS ovalbumin.
 SOURCE Gallus gallus (chicken)
 ORGANISM [Gallus gallus](#)
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
 Phasianinae; Gallus.
 REFERENCE 1 (bases 1343 to 8906)
 AUTHORS McReynolds,L., O'Malley,B.W., Nisbet,A.D., Fothergill,J.E.,
 Givol,D., Fields,S., Robertson,M. and Brownlee,G.G.
 TITLE Sequence of chicken ovalbumin mRNA
 JOURNAL Nature 273 (5665), 723-728 (1978)
 MEDLINE [78199842](#)
 PUBMED [661981](#)
 REFERENCE 2 (bases 1357 to 1389; 2941 to 3052)
 AUTHORS Breathnach,R., Benoist,C., O'Hare,K., Gannon,F. and Chambon,P.
 TITLE Ovalbumin gene: evidence for a leader sequence in mRNA and DNA
 sequences at the exon-intron boundaries
 JOURNAL Proc. Natl. Acad. Sci. U.S.A. 75 (10), 4853-4857 (1978)
 MEDLINE [79116220](#)
 PUBMED [283395](#)
 REFERENCE 3 (bases 5576 to 5624)
 AUTHORS Lai,E.C., Woo,S.L., Dugaiczyk,A. and O'Malley,B.W.
 TITLE The ovalbumin gene: alleles created by mutations in the intervening
 sequences of the natural gene
 JOURNAL Cell 16 (1), 201-211 (1979)
 MEDLINE [79126029](#)
 PUBMED [421270](#)
 REFERENCE 4 (bases 2675 to 5042)
 AUTHORS Robertson,M.A., Staden,R., Tanaka,Y., Catterall,J.F., O'Malley,B.W.
 and Brownlee,G.G.
 TITLE Sequence of three introns in the chick ovalbumin gene
 JOURNAL Nature 278 (5702), 370-372 (1979)
 MEDLINE [79135070](#)
 PUBMED [423993](#)
 REFERENCE 5 (bases 1282 to 1420; 2952 to 2999)
 AUTHORS Gannon,F., O'Hare,K., Perrin,F., LePennec,J.P., Benoist,C.O.,
 Cochet,M., Breathnach,R., Royal,A., Garapin,A., Cami,B. and
 Chambon,P.
 TITLE Organisation and sequences at the 5' end of a cloned complete
 ovalbumin gene
 JOURNAL Nature 278 (5703), 428-434 (1979)
 MEDLINE [79199627](#)
 PUBMED [450048](#)
 REFERENCE 6 (bases 1043 to 1562; 2675 to 4732; 8885 to 9206)
 AUTHORS Benoist,C., O'Hare,K., Breathnach,R. and Chambon,P.
 TITLE The ovalbumin gene-sequence of putative control regions
 JOURNAL Nucleic Acids Res. 8 (1), 127-142 (1980)
 MEDLINE [80122213](#)

PUBMED [6243777](#)
REFERENCE 7 (bases 1 to 1042)
AUTHORS Heilig,R., Muraskowsky,R. and Mandel,J.L.
TITLE The ovalbumin gene family. The 5' end region of the X and Y genes
JOURNAL J. Mol. Biol. 156 (1), 1-19 (1982)
MEDLINE [82242066](#)
PUBMED [6178832](#)
REFERENCE 8 (bases 443 to 611)
AUTHORS Scheweers,L.A., Frank,D.E., Weigel,N.L. and Sanders,M.M.
TITLE The steroid-dependent regulatory element in the ovalbumin gene does
not function as a typical steroid response element
JOURNAL J. Biol. Chem. 265 (13), 7590-7595 (1990)
MEDLINE [90237065](#)
PUBMED [2332444](#)
REFERENCE 9 (bases 1 to 9206)
AUTHORS Woo,S.I., Beattie,W.G., Catterall,J.F., Dugaiczyk,A., Staden,R.,
Brownlee,G.G. and O'Malley,B.W.
TITLE Complete nucleotide sequence of the chicken chromosomal ovalbumin
gene and its biological significance
JOURNAL Biochemistry 20 (22), 6437-6446 (1981)
MEDLINE [82069038](#)
PUBMED [6272839](#)
COMMENT On Feb 8, 2002 this sequence version replaced gi:[341287](#).
[2] and ivs junctions.
[1] exons only.
Eight exons reported. Sequence homologies with adenovirus early 1a,
adenovirus major late, chicken conalbumin, chx and chy genes
noted for 5' flanking sequence.
OV1.3 is identical to OV1.8 except that intron E is shorter by 522
nucleotides [3].
FEATURES Location/Qualifiers
source 1..9206
/organism="Gallus gallus"
/mol_type="genomic DNA"
/db_xref="taxon:9031"
/tissue_type="oviduct"
misc_signal 443..611
/note="steroid-dependent regulatory element"
/citation=[8]
variation 1282
/note="g may be c"
/citation=[9]
variation 1309
/note="g may be a"
/citation=[9]
exon 1343..3163
/note="ovalbumin"
/number=1
variation 1376
/note="g may be c"
/citation=[7]
/citation=[9]
variation 1385
/note="g may be a"
/citation=[7]
/citation=[9]
intron 1390..2978
/note="oval intron A"
variation 1393
/note="a may be g"
/citation=[9]
conflict 1471
/citation=[6]
/replace=""

conflict 1523
/citation=[6]
/replace=""
conflict 1538..1539
/citation=[6]
/replace=""
conflict 2681
/citation=[6]
/replace=""
conflict 2696
/citation=[6]
/replace=""
CDS join(2996..3163,3415..3465,4047..4175,4576..4693,
5652..5794,6126..6281,7864..8259)
/codon_start=1
/product="ovalbumin"
/protein_id="[AAB59956.1](#)"
/db_xref="GI:212505"
/translation="MGSIGAASMEFCDFVKELKVHHANENIFYCPIAIMSALAMVYL
GAKDSTRTQINKVVRFDKLPGFGDSIEAQCGTSVNVHSSLRDILNQITKPNDVYSFSL
ASRLYAEERYPILPEYLQCVKELYRGGLEPINFQTAADQARELINSWVESQTNGIIRN
VLQPSSVDSQTAMVLVNAIVFKGLWEKAFKDEDTQAMPFRVTEQESKPVQMYYQIGLF
RVASMASEKMKILELPFASGTMSMLVLLPDEVSGLEQLESIINFEKLTEWTSSNVMEE
RKIKVYLP RMKMEEKYNLTSLMAMGITDVFSSANLSGISSAESLKISQAVHAAHAE
INEAGREVVGSAEAGVDAASVSEEFRADHPFLFCIKHIATNAVLF GGRCVSP"
variation 3010
/note="t may be c"
/citation=[9]
variation 3154
/note="a may be g"
/citation=[9]
intron 3164..3414
/note="oval intron B"
exon 3415..3465
intron 3466..4046
/note="oval intron C"
conflict 3552
/citation=[6]
/replace=""
conflict 3683
/citation=[6]
/replace=""
conflict 3934
/citation=[6]
/replace=""
conflict 3960
/citation=[6]
/replace=""
conflict 3994
/citation=[6]
/replace=""
exon 4047..4175
/number=3
intron 4176..4575
/note="oval intron D"
conflict 4207..4208
/citation=[6]
/replace=""
conflict 4396
/citation=[6]
/replace=""
exon 4576..4693
/number=4
intron 4694..5651

```

variation      /note="oval intron E"
5579..5580
variation      /note="difference between clones OV1.8 and OV1.3"
/citation=[3]
/replace="tcc"
exon          5652..5794
/number=5
variation      5747
/note="g may be a"
/citation=[9]
intron         5795..6125
/note="oval intron F"
exon          6126..6281
/number=6
intron         6282..7863
/note="oval intron G"
exon          7864..8906
/note="ovalbumin"
/number=7
variation      8032
/note="can be g"
/citation=[1]
conflict       8492..8505
/citation=[1]
/replace=""

```

BASE COUNT 2994 a 1749 c 1721 g 2742 t
ORIGIN

```

1 ctgcagactg acatgcattt cataggtaga gataacattt actggaaagc acatctatca
61 tcataaaaag caggaagat tttcagactt tcttagtggc tgaaatagaa gaaaaagacg
121 tgattaaaaa caaaaatgaaa caaaaaaaaaat cagttgatac ctgtgggtga gacatccagc
181 aaaaaaaaaat tatttgcact accatcttgt cttaagtccct cagacttggc aaggagaatg
241 tagatttcta cagtatatat gtttcacaa aaggaaggag agaaacaaaa gaaaatggca
301 ctgactaaac ttcaagctgt ggtatagggaa agtaattctg cttaacagag attgcagtga
361 tctctatgtt tgcattgtt aattatgtt tactttttc ccccattttt aaatcaaaca
421 gtgcatttaca gaggtcagaa tggtttctt actgtttgtc aattcttatta tttcaataca
481 gaacaatagc ttctataact gaaatataatt tgctattgtt tattatgatt gtccctcgaa
541 ccatgaacac tcctccagct gaatttcaca attcctctgt catctgccag gccattaaatgt
601 tattcatgga agatotttga ggaacactgc aagttcatat cataaacaca tttgaaatttg
661 agtattgttt tgcattgtt ggagctatgt tttgctgtt cctcagaaaa aaagtttggtt
721 ataaaggcatt cacaccata aaaagataga tttaaatatt ccagctatac gaaagaaaatgt
781 gcgtctgctc ttcaactctag tctcagttgg ctccttcaca tgcatgttcc tttatttctc
841 ctatttgtc aagaaaataa taggtcacgt cttgttctca ctatgtccct gcctagcatg
901 gtcagatgc acgttgtaga tacaagaagg atcaaatgaa acagacttct ggtctgttac
961 tacaaccata gtaataagca cactaactaa taattgttta ttatgtttt catctctaag
1021 gttccccat ttttctgttt tcttaaagat cccattatct gggtgttaact gaagctcaat
1081 ggaacatgag caatatttcc cagtcttctc tcccattccaa cagtcctgtat ggattagcag
1141 aacaggcaga aaacacattt ttacccagaa tttaaaacta atatttgcct tccattcaat
1201 cccaaatgga cctattgaaa cttaaatctt acccaatccc attaaatgtat ttctatggcg
1261 tcaaaggctca aacttctgaa gggAACCTGT gggtgggtca caattcaggc tatataattcc
1321 ccagggctca gccagtgtct gtacatacag ctagaaagct gtattgcctt tagcagtcaa
1381 gtcgaaagg taagcaactc tctggaattt ccttctctt atattagctc ttacttgcac
1441 ctaaaacttta aaaaatttac aattattgtt ctatgtgtt tatcttttaag ggtgaagtac
1501 ctgcgtgata cccctataa aaacttctca cctgtgtatg cattctgcac tatttttatta
1561 tgtgtaaaag ctttctgttt gttttcagga ggcttattct ttgtgtttaa aatatgtttt
1621 taatttcaga acatotttac ctgtcgatca ctatctgata tgctttgcag tttgcttgat
1681 taacttcttag ccctacagag tgcacagaga gcaaaaatcat ggtgttcagt gaattctggg
1741 gagttattttt aatgtgaaaa ttctctagaa gtttaattcc tgcaaagtgc agctgctgat
1801 cactacacaa gataaaaaatg tgggggggtgc ataaacgtat attcttacaa taatagatac
1861 atgtgaactt atatacagaa aagaaaatga gaaaatgtt tgcgtgtata ctcacacacg
1921 tggtcagtaa aaacttttga ggggttaat acagaaaatc caatcctgag gccccagcac
1981 tcagtagcga tataaagggc tgggctctga aggacttctg actttcacag attatataaa
2041 ttcagggaaa gcaactagat tcatgctggc tccaaaagct gtgctttata taagcacact
2101 ggctatacaa tagttgtaca gttcagctt ttataataga aacagacaga acaagtataa
2161 atcttctattt ggtctatgtc atgaacaaga attcattcag tggctctgtt ttatagtaaa

```

2221 cattgctatt ttatcatgtc tgcatttctc ttctgtctga atgtcaccac taaaatttta
2281 ctccacagaa agtttatact acagtacaca tgcatatctt tgagcaaagc aaaccatacc
2341 tgaaagtgc atagagcaga atatgaatta catcgctgtc tttctctag actacatgac
2401 cccatataaa ttacattact tatctattct gccatcacca aaacaaggtaaaaactt
2461 ttgaagatct actcatagca agtagtgtc aacaaacaga tatttctcta catttatttt
2521 taggaaataa aaataagaaa taaaatagtc agaaggcctc tgcttctca tatatctgtc
2581 caaacctaaa gtttactgaa atttgcttct tgaatttcca gtttgcaag cctatcagat
2641 tgtgtttaa tcagaggtac tgaaaagtat caatgaattc tagcttcac tgaacaaaaa
2701 tatgttagagg caactggctt ctgggacagt ttgctaccca aaagacaact gaatgcaaat
2761 acataaaatag atttatgaat atggtttga acatgcacat gagaggtgga tatagcaaca
2821 gacacattac cacagaatta cttaaaact acttgttaac atttaattgc ctaaaaaactg
2881 ctcgtaattt actgtttag cctaccatag agtaccctgc atggactat gtacagcatt
2941 ccattcctac attttcaactg ttctgctgt tgctctagac aactcagagt tcaccatggg
3001 ctccatcggt gcagcaagca tggaaattttg ttttgcgttca ttcaaggagc tcaaagtcc
3061 ccatgccaat gagaacatct tctactgccc cattgcccatt atgtcagctc tagccatgg
3121 atacctgggt gcaaaagaca gcaccaggac acaaataat aaggtgagcc tacagttaa
3181 gattaaaacc tttgccctgc tcaatggagc cacagcactt aattgtatga taatgtccct
3241 tggaaactgc atagctcaga ggctgaaaat ctgaaaccag agttatctaa aagtgtggcc
3301 acctccaact cccagagtgt tacccaaatg cactagctg aaatctgaa actggattgc
3361 ataacttctt tttgtcataa ccattatttc agtactattt atttcaattt acaggttgg
3421 cgcttgata aacttccagg attcggagac agtattgaag ctcaggtaca gaaataattt
3481 caccccttc tctatgtccc tttccctctgg aagcaaaaata cagcagatga agcaatctct
3541 tagctgttcc aaggcccttc tgatgagcag ctatgtctct gcatccagca gttggagaa
3601 cactgttcat aagaacagag aaaaagaagg aagaacagg ggattcagaa caaacagaag
3661 ataaaactca ggacaaaaat accgtgtgaa tgaggaaact tggatatttgcgtt
3721 agcaagacag ctagatgatt ctggataaaat gggctgggtt gggaaaagaa gaaagctgg
3781 ctgatctgct ggagctagat tattgcagca ggtaggcagg agttccctag agaaaagat
3841 gagggaatta cagaagaaaa acagcacaaa attgtaaata ttggaaaagg accacatcg
3901 ttagttact agcagtaaga cagacagat gaaaatagt tttgtaaaca gaagtatcta
3961 actactttac tctgttcatc cactacgtaa aacttactaa gtaataaaac tagaataaca
4021 acatctttct ttctttgtt attcagtgtg gcacatctgt aaacgttcac tttcactta
4081 gagacatctt caaccaaattt accaaaccaa atgatgttta ttcggtcagc cttgcccagta
4141 gactttatgc tgaagagaga tacccaaatcc tgccagtaag ttgctctaaa atctgatctg
4201 agtgttattcc atgccaatgc tctaccatc tgtaatgc gaaacagtccat agttccacat
4261 gtttcaactaa gaaaatttct ttttctctt gtttacaaa tggaaagagag gacaataac
4321 atttctctat caccgacctg aaactctaca gtcttcagag aatgaatggc ttgtctaaag
4381 aatgtcaaat cttaactatac agtatttca tattacacta ctaaatacac tataaggcat
4441 agcatgttgt aatacagtgt aaaatagtt tttacactac tatattatta atatctgtt
4501 attccagttc tgcatttcac atttgcaaaa ctgtttgaaa ttcgatctg aaagctgaat
4561 actcttgctt tacaggaata cttgcagtgt gtgaaggaaac tggatatttgcgtt
4621 cctatcaact ttcaaacagc tgcatatcaa gccagagagc tcatcaattc ctgggttagaa
4681 agtcagacaa atggtaaggt agaacatgt ttgtacatag tgaggttgg ttccaccctaa
4741 tactgagaac ttggatatac ctcagccagc gtgtttgctg ttcaagctta ccagagctgt
4801 ttagtgcctg ttaagcaggg catacagtc tgaggcttt gaaaaatctt aacagacaaa
4861 gggcaatgga aaatcggtg taagggatgg tagggataaa atgcataaaaaa agaggtacca
4921 caattttgat ttttgcctt atgcctctt gcgtggttcc tcaattttc tacttcattt
4981 ctcatctctt cagagcattc ctccctca tgcttgaac acagatgaaa gactgtgaat
5041 tctaactgag atgaaaacat ccacaaccac acaacctctg gtgtggagtc acattctgtg
5101 aaggcaaaaaa ctaggccacg taatctatgc gtgcacagta cgcgttaagct atgtgtgtg
5161 caggacaatg tgaggaaacat actatgtc acaaggactgc agaataaaca ggagcaaagt
5221 ttttgaagaa aacagagtaa aatcctttt tcctcttttgc ttacatttt tacatataatc
5281 tcaaatttcc tcttgggtt gaagcaagta atatttatgt ttcttggtagt gtttgggtt
5341 gaagaccatt ctgggataag agaaaatttca gtggttcttc ccctaattcat aaaatgtcg
5401 gtttagttt tttgtacac agaaaatctct tcattttttca tcttttgg tgattcttg
5461 tagagagaga aacaagactt actgacaata gcagcaagaa aatcaatctt ggaagaacaa
5521 gattgcaatt gcaaaaacaa accaatgtcc ttggccctac atcctttcc ccataaaattc
5581 tacattctt atctaccttgc tgcttgcac catgatatac gtaaactctc tttccttatt
5641 cattcttaaa ggaattatca gaaatgtct tcagccaagc tccgtggatt ctcaaactgc
5701 aatggttctg gttatgcac ttgtcttca aggactgtgg gagaaggcat ttaaggatga
5761 agacacacaa gcaatgcctt tcagagtgc tgaggtat gggcataacct tagagatgta
5821 atctagaatt tatgaagaga gtagacatgt tggatattttgc acactgcatt agcgtatctg
5881 ctcatcttgc tgcatctctt tcagacactg tggtaaaaagc agggaaatctt ctttatgtct
5941 ctctcgatc aatattccctg acattgcacaa gctccctgaga aataacttca gattccactt
6001 ttccttaggaa ggcttctggta tgagaactaa tcattttttca tggtaacttgc catttctgtc

6061 tccagaagaata atctttgtta aaactatatt ctctctctct tttttttttt tttttgggttc
6121 tccagcaaga aagcaaacct gtgcagatga tgtaccagat tggtttatTTT agagtggcat
6181 caatggcttc tgagaaaatg aagatcctgg agctccatt tgccagtggg acaatgagca
6241 tgttgggtgct gttgcctgat gaagtcttag gccttgagca ggtatggccc tagaaagtgg
6301 cttcagaata ttAAAACAC atggaaattt agctgttgta aagctctttt caacacagtt
6361 atcctaaaac atttaaccag cacaatttc atcatgattc aatatgtgat tggtgcata
6421 aagtgttagat ttgtcccact gggcctgca atagccccatg ctgagcatgg cttgctgaaa
6481 gaactgcttt agagggtgaa aagttgaca cagcagacaa gatgatttc acctaaggcag
6541 ctgttactgt agtggcttga actctaaagg tcttgtatct ccattccctgt gcactgagga
6601 gcttcctgga aagttcatat aaggTTTact agttctaact attatctcat ttgtggcac
6661 tcaatgtgct ttgttcacgt cttcataaat taatctatct aaaaatttgg atgtgttaaa
6721 gcaatttcag aaataaacatg tacataatgt acaattattg atatgaacag aacacaggca
6781 tagcatattt taattaggag gactgttagtt attttgaata ggaaacacaa tgtaataat
6841 gagaattcat tgaaatgttA gtatgctAAC tcaatctAA ttataaaagat aaagaggcat
6901 ttaatcacag cttagattcc atcacttgg acagacaggc atatgaatga ttatgtacag
6961 ctcttaggaaa aaaagtatgt aggaaaaacta gtacattttg attagaaaagt ctgaaaatga
7021 ggtgccttga tcaaagagaa tacgtgttt tgaaaaaaa aaagtttgg atagaggtgtt
7081 aagagagaat atattttaaat ggtgtttctt caaactgcca tggccagatt tggtaagag
7141 acattcagta agtaggcaag gaaagaaaata ttacttagta caaagcaaca tcagtaata
7201 caaaagaaac caattattcc agatgccaat ctcgtaatAG ggttaagaga tttccacccc
7261 tctagtggc accagtgcAA ccagtaactt tgcttaattt cattttctt tttaatgg
7321 cagatatacg tttgaactga gtgatcatga actggtaactg tgtaatagat gaagacata
7381 ttgacgacta aacttctgtat ttttttttttcaatttctc ttgaaagatc agttcccagt
7441 cttagtaacag ctgatagttt aagtatca gatggctac cattaacac tggcctctga
7501 gaggtcttaa atgttagagac agctttaaac tcaaaaggcac agagtgttattttaga
7561 ttcccagc aaagaaaata aacagggagg agcttttaagg gagtagccat ctcattattt
7621 ttattttttt aagaaatggc agcaaggcctt caaaagaaaa ataagacaga gcagagaaga
7681 aagagtcatg gtatgtttt ctatcttagc aaaattaatc tctacatgccc tagaaaaaaag
7741 ccatgacaag agcaatcagt tcaaaaggta tatgcaaaaa accacataat agtaactagt
7801 actgcattgc caggaaggaa gttatgtcgc catttttttttcaatttctt atctcattt
7861 cagttgaga gtataatcaa ctttttttttcaatttcttcaatttcttcaatttcttcaatttctt
7921 gaagagagga agatcaaagt gtacttaccc cggcatgaaga ggaccaggc taatgttat
7981 acatctgtct taatggctat gggcattact gacgtgttA gcttttcaatttcttcaatttctt
8041 ggcatctcct cagcagagag cctgaagata tctcaagctt tccatgcagg acatgcagaa
8101 atcaatgaag caggcagaga ggtggtaggg tcagcagagg ctggagtttgc tgctgcaagc
8161 gtctctgaag aatttagggc tgaccatcca ttttttttttcaatttcttcaatttcttcaatttctt
8221 aacgcgcgttC tcttcttttttcaatttcttcaatttcttcaatttcttcaatttcttcaatttctt
8281 ctgtcccttc caacaagacc cagagcaactg tagtatttttttcaatttcttcaatttctt
8341 atctgctgca tccagacttc ataaaagctg gagcttaatc tagaaaaaaa atcagaaaga
8401 aattacactg tgagaacagg tgcaatttcc ttttttttttcaatttcttcaatttcttcaatttctt
8461 tcatggatga aggcttaagg gaatgaaaatt ggactcacag tactggatca tcacactgaa
8521 aaatgcaccc tgatacatca gcagaagggtt tatggggaa aatgcagcc ttccaattaa
8581 gccagatatac tgatgtacca agctgctcca gaatttttttcaatttcttcaatttcttcaatttctt
8641 attatcaact gtcaccaacc atttttttttcaatttcttcaatttcttcaatttcttcaatttctt
8701 ctgataactac aaggcttccctt ctttttttttcaatttcttcaatttcttcaatttcttcaatttctt
8761 catttctccc taaaactttga ctcaatcatg gtatgttggc tataaaaatc ttataattca
8821 caaattgttt tccttgcatttcatatgtt gggctttgtt aatgtgttctt ttttttttttcaatttctt
8881 taatcataat aaaaacatgt ttaagcaaaacttttttttcaatttcttcaatttcttcaatttctt
8941 aaggTTTGTGCTT agcaggaaa gaatgacatg cagaggaata agtatggaca cacaggctag
9001 cagcgactgt agaacaagta ctatgtgggtt agaagttgaa caagagtccc ctacaagcaa
9061 cttaatctaa taagcttagt gtttttttttcaatttcttcaatttcttcaatttcttcaatttctt
9121 gttctccctt ctaagcatca ctttttttttcaatttcttcaatttcttcaatttcttcaatttctt
9181 ctgcctgtat ctggcgtggg gtgtat

11