Application programs in "qanalys"

acont	calculation of amino acids content	(1a)
antiseq	production of antistrand sequences	(1)
bcont	calculation of nucleotide content	(1)
codonusg	calculation of codon usage	(2)
dnatoaa	translation from DNA to amino acids	(1b)
gredit	graphic editor for GKS metafiles	(?)
hmatrix	homology matrix for DNA or amino acid sequences	(3)
hypath	hydropathy profiles for amino acid sequences	(1a)
*prodif	calculation of the differences of amino acid sequences	(?)
qformat	general formatter for QANALYS	(4)
seqcut	cut out and joint of sequences	(2)
seqlist	display of nucleotide sequences	(2)
*sqdif	calculation of the diiferences of DNA sequences at the silent and amino acid replacement sites by Miyata and Yasunaga's Method	(?)

example

```
niguts% qanalys
qanalys% acont <input_file >output_file
qanalys% antiseq <input_file >output_file
qanalys% bcont <input_file >output_file
qanalys% codonusg <input_file >output_file
qanalys% dnatoaa <input_file >output_file
qanalys% gredit input_file [ work_type ]
qanalys% hmatrix input_file [ output_file ]
qanalys% hypath input_file [ output_file ]
qanalys% qformat <input_file >output_file
qanalys% seqcut <input_file >output_file
qanalys% seqlist <input_file >output_file
qanalys% exit
niguts%
```

(1) /tmp/qanalys/antiseq.data
(1a) /tmp/qanalys/acont.data
(1b) /tmp/qanalys/dnatoaa.data
(2) /tmp/qanalys/seqcut.data
(3) /tmp/qanalys/hmatrix.data
(4) /tmp/qanalys/qformat.data

2

=== RAT PREPRO-AVP-NP ===

507

ATGCTCGCCATGATGCTCAACACTACGCTCTCTGCTTGCTTCCTGAGCCTGCTGGCCCTC
ACCTCTGCCTGCTACTTCCAGAACTGCCCAAGAGGAGGCAAGAGGGCCACATCCGACATG
GAGCTGAGACAGTGTCTCCCCTGCGGCCCTGGCGGCAAAGGGCGCTGCTTCGGGCCGAGC
ATCTGCTGCGCGGACGAGCTGGGCTGCTTCCTGGGCACCGCCGAGGCGCTGCGCTGCCAG
GAGGAGAACTACCTGCCCTCGCCCTGCCAGTCTGGCCAGAAGCCTTGCGGAAGCGGAGGC
CGCTGCGCTGCCGCGGGCATCTGCTGCAGCGATGAGAGCTGCGTGGCCGAGCCCGAGTGT
CGAGAGGGTTTTTTCCGCCTCACCCGCGCTCGGGAGCAGAGCAACGCCACGCAGCTGGAC
GGGCCAGCCCGGGAGCTGCTGCTTAGGCTGGTACAGCTGGCTGGGACACAAGAGTCCGTG
GATTCTGCCAAGCCCCGGGTCTACTGA

=== BOVINE PREPRO-AVP-NPII ===

610

GCACAGTCTACAGAGCAGCACTGCGCACGTGTGCCCACGCGTGCCAGGATGCCCGACGCC
ACACTGCCCGCCTGCTTCCTCAGCCTGCTGGCCTTCACCTCTGCTTGCTACTTCCAGAAC
TGCCCAAGGGGCGGCAAGAGGGCCATGTCCGACCTGGAGCTGAGACAGTGTCTCCCCTGC
GGCCCCGGGGGCAAAGGCCGCTGCTTCGGGCCCAGCATCTGCTGCGGGGACGAGCTGGGC
TGCTTCGTGGGCACGGCCGAGGCGCTGCGCTGCCAAGAGGAGAACTACCTGCCGTCGCCC
TGCCAGTCCGGCCAGAAGCCCTGCGGGAGCGGGGGCCGCTGCGCCGCCGCCGGCATCTGC
TGCAACGATGAGAGCTGCGTGACCGAGCCCGAGTGCCGGGAAGGTGTCGGCTTCCCCCGC
CGCGTTCGCGCCAACGACCGGAGCAACGCGACCCTGCTGGACGGGCCGAGCGGGGCCTTG
TTGCTGCGGCTGGTGCAGCTGGCGGGGGCGCCGGAGCCCGCGGAGCCCGCCCAGCCCGGC
GTCTACTGAGGCGCGCCCCCCCCCTCCCCACCCCTGCCCTCGCAGCACGAAAAATAAACG
TTTTAAAGGC

2
=== HUMAN MAS ONCOGENE === CELL VOL.45,711-719 ('86)
325
MDGSNVTSFVVEEPTNISTGRNASVGNAHRQIPIVHWVIMSISPVGFVENGILLWFLCFR
MRRNPFTVYITHLSIADISLLFCIFILSIDYALDYELSSGHYYTIVTLSVTFLFGYNTGL
YLLTAISVERCLSVLYPIWYRCHRPKYQSALVCALLWALSCLVTTMEYVMCIDREEESHS
RNDCRAVIIFIAILSFLVFTPLMLVSSTILVVKIRKNTWASHSSKLYIVIMVTIIIFLIF
AMPMRLLYLLYYEYWSTFGNLHHISLLFSTINSSANPFIYFFVGSSKKKRFKESLKVVLT
RAFKDEMQPRRQKDNCNTVTVETVV
=== BOVINE RHODOPSIN (BOVINE) CELL VOL.34 P.807 1983 ===
348
MNGTEGPNFYVPFSNKTGVVRSPFEAPQYYLAEPWQFSMLAAYMFLLIMLGFPINFLTLY
VTVQHKKLRTPLNYILLNLAVADLFMVFGGFTTTLYTSLHGYFVFGPTGCNLEGFFATLG
GEIALWSLVVLAIERYVVVCKPMSNFRFGENHAIMGVAFTWVMALACAAPPLVGWSRYIP
EGMQCSCGIDYYTPHEETNNESFVIYMFVVHFIIPLIVIFFCYGQLVFTVKEAAAQQQES
ATTQKAEKEVTRMVIIMVIAFLICWLPYAGVAFYIFTHQGSDFGPIFMTIPAFFAKTSAV
YNPVIYIMMNKQFRNCMVTTLCCGKNPLGDDEASTTVSKTETSQVAPA

2

=== RAT PREPRO-AVP-NP ===

507 1 507

ATGCTCGCCATGATGCTCAACACTACGCTCTCTGCTTGCTTCCTGAGCCTGCTGGCCCTC
ACCTCTGCCTGCTACTTCCAGAACTGCCCAAGAGGAGGCAAGAGGGCCACATCCGACATG
GAGCTGAGACAGTGTCTCCCCTGCGGCCCTGGCGGCAAAGGGCGCTGCTTCGGGCCGAGC
ATCTGCTGCGCGGACGAGCTGGGCTGCTTCCTGGGCACCGCCGAGGCGCTGCGCTGCCAG
GAGGAGAACTACCTGCCCTCGCCCTGCCAGTCTGGCCAGAAGCCTTGCGGAAGCGGAGGC
CGCTGCGCTGCCGCGGGCATCTGCTGCAGCGATGAGAGCTGCGTGGCCGAGCCCGAGTGT
CGAGAGGGTTTTTTCCGCCTCACCCGCGCTCGGGAGCAGAGCAACGCCACGCAGCTGGAC
GGGCCAGCCCGGGAGCTGCTGCTTAGGCTGGTACAGCTGGCTGGGACACAAGAGTCCGTG
GATTCTGCCAAGCCCCGGGTCTACTGA

=== BOVINE PREPRO-AVP-NPII ===

610 49 549

GCACAGTCTACAGAGCAGCACTGCGCACGTGTGCCCACGCGTGCCAGGATGCCCGACGCC
ACACTGCCCGCCTGCTTCCTCAGCCTGCTGGCCTTCACCTCTGCTTGCTACTTCCAGAAC
TGCCCAAGGGGCGGCAAGAGGGCCATGTCCGACCTGGAGCTGAGACAGTGTCTCCCCTGC
GGCCCCGGGGGCAAAGGCCGCTGCTTCGGGCCCAGCATCTGCTGCGGGGACGAGCTGGGC
TGCTTCGTGGGCACGGCCGAGGCGCTGCGCTGCCAAGAGGAGAACTACCTGCCGTCGCCC
TGCCAGTCCGGCCAGAAGCCCTGCGGGAGCGGGGGCCGCTGCGCCGCCGCCGGCATCTGC
TGCAACGATGAGAGCTGCGTGACCGAGCCCGAGTGCCGGGAAGGTGTCGGCTTCCCCCGC
CGCGTTCGCGCCAACGACCGGAGCAACGCGACCCTGCTGGACGGGCCGAGCGGGGCCTTG
TTGCTGCGGCTGGTGCAGCTGGCGGGGGCGCCGGAGCCCGCGGAGCCCGCCCAGCCCGGC
GTCTACTGAGGCGCGCCCCCCCCCTCCCCACCCCTGCCCTCGCAGCACGAAAAATAAACG
TTTTAAAGGC

```
    2
    0
    4
  175  272 == EX1 ==
  442  550 == EX2 ==
  785  889 == EX3 ==
 1175 1297 == EX4 ==
    1
=== SOYBEAN LEGHEMOGLOBIN (LBC) ===
 1523
GATCATTGGCTCT--GTCATGCCGATTGACACCCTCCACAAGCCAAGAGAAACTTAAGTT
GTAAACTTTCTCACTCCAGCCTTCTATATAACATGTATTGGATGTGAAGTTATTGCATAA
CTTGCATTGAACAATAGAAAATAACAAAAAAAAAGTAAAAAAGTAGAAAAGAAATATGGGT
GCTTTCACTGAGAAGCAAGAGGCTTTGGTGAGTAGCTCATTCGAAGCATTCAAGGCAAAC
ATTCCTCAATACAGCGTTGTGTTCTACAATTCGTAAGTTTTCTCTATAAGCATGTGTCTT
TCATTCTATGTTTTTCTTCTGGAAATTTTTTGTGTTTGAAAAAAGATATATATATATATA
TATATATATATATATATATATATATATATATATATATATATTTTGTTAATGTGAGTGGTTTT
GGTTTGATTAAAAATAAATAGGATTCTGGAGAAAGCACCTGCAGCAAAGGACTTGTTCTC
ATTTCTAGCAAATGGAGTAGACCCCACTAATCCTAAGCTCACGGGCCATGCTGAAAAGCT
TTTTGCATTGGTAAGTATCAGCCAACTAAAATTATAACTATTTTATGTGATTAATTTTAA
GATTAAACATCATGTATTTTAACACTCTTAAAATATCAATGAACATTAATTTTTTGAATT
GTATTTTATATTTTTACCATATCTTGAACTAGGAATAATATATAAATTTCTATTAGTATT
TCTTGGTAATTACATATATATATATATATATAATCCTTGTGATAATTATTTTTCGAATTT
GTAGGTGCGTGACTCAGCTGGTCAACTTAAAACAAATGGAACAGTGGTGGCTGATGCTGC
ACTTGTTTCTATCCATGCCCAAAAAGCAGTCACTGATCCTCAGTTCGTGGTATGATAAAT
AATACTAGTAAAATGTTACAATAAATGCAAACTTAAGTTTTACGTACATAGTGATCATGA
CTTCATGCATGGCTATTATTTTTTCATATTTATTGAAGTCAACTTAAAATTTTGTAAATA
CAGATCGATGCTAGTAATTTGTTGAGATCATGAGAAAACGTACCACTACTCCAATAGCAT
TACTCATTTTGAAAATTGTATAACTGTGATCTAATTATAAGGAAAAAGTGTATATAAGAG
CTAATCCATTATTAATGTTTTTTATATTTTGTAGGTGGTTAAAGAAGCACTGCTGAAAAC
AATAAAGGAAGCTGTTGGCGGCAATTGGAGTGACGAATTGAGCAGTGCTTGGGAAGTAGC
CTATGATGAATTGGCAGCAGCAATTAAAAAGGCATAATTAGGATCTACTGCATTGCCGTA
AAGTGTAATAAATAAATCTTGTTTCAACTAAAACTTGTTATTAAACAAGTTCCCTATATA
AATGTTGTTTAAAATAAGTAAATTTCATTGTATTGGATAAACACTTTTAAGTTATATATT
TCCATATATTTACGTTTGTGAATCATAATCGATACTTTATAAAAATAAATTCCAAATAAT
TTATACGTTTTAAAAATTATTTT
    0
    4
  115  212 == EX1 ==
  332  440 == EX2 ==
  674  778 == EX3 ==
 1459 1581 == EX4 ==
    1
=== SOYBEAN LEGHEMOGLOBIN (LBA) ===
 1886
AAGCTTTGGTTTTCTCACTCTCCAAGCCCTCTATATAAACAAATATTGGAGTGAAGTTGT
TGCATAACTTGCATCGAACAATTAATAGAAATAACAGAAAATTAAAAAAGAAATATGGTT
GCTTTCACTGAGAAGCAAGATGCTTTGGTGAGTAGCTCATTCGAAGCATTCAAGGCAAAC
ATTCCTCAATACAGCGTTGTGTTCTACACTTCGTAAGTTTTCTCTCTAAGCATGTGTCTT
CCATTCTATGTTTTTCTTTTGGAAATTTGTTGTGTTTGAAAAAAGATATATTGTTAATGT
GAGTGGTTTTGGTTTGATTAAAAATGAATAGGATACTGGAGAAAGCACCTGCAGCAAAGG
ACTTGTTCTCATTTCTAGCAAATGGAGTAGACCCCACTAATCCTAAGCTCACGGGCCATG
CTGAAAAGCTTTTTGCATTGGTAAGTATCACCCAACTAAAATTATAACTATTTTATGTGA
TTAATTTTAAGATTAAGCATCATGTATTTTAACACTCTTAAAACATCAATGAACATTAAT
TCTTTGAATTGTATTTTATATTTTTGCCATATCTTGAACTAGGAATAGTATATAAATTTC
TATTAGTATTTGTTGATAATTATTTTTCTTTCATAACTATCTTGTCACATATTATATATT
TTTTGAATTGTAGGTGCGTGACTCAGCTGGTCAACTTAAAGCAAGTGGAACAGTGGTGGC
TGATGCCGCACTTGGTTCTGTTCATGCCCAAAAAGCAGTCACTGATCCTCAGTTCGTGGT
ATGATAAATAATGAAATGTTATAATAAATTATGCATACTTCAATTTTTCATGGAGCAGTA
TAATCATCAACACACACTTCTTTTGTTTCATGCATTTGATAACTACAATCTTAAAATGTT
GCAATCTTAAAAATAGTATTAAAAATATAACATTTAATTAGCTCATCAATATTTTTCTGT
TGCAATTTTTTATGAAAAAATTATAATTATGAATTCTTTGAGCAATGTTTAATTAAAAAA
TTGATTTAATAATGAAATAACTAAGCTACCTCTGTCTCGTTTTTCATTTAAACTATGACA
TAAACAATGAATAAAGTAAACTAAACCATGACATGTTTATTTTTGAATGAGGTTATTAAT
AATTTTTTTTCACTATCTATTGCAATGTTCATTGATTATCAATTATCTTGGTTGCATTGA
TTCTCTCGATTTTTTTCTTGAGGTTAAGCTTCAGTTCAATATATATTCATTTTTTGATAA
```

AAAAAAATAGTACAATATATTTTCATTTAGCTGATCATATTTATTTAAGTTCAACTTAAA
ATTTTATAGATGTTAATTGATATAATTTGTTGAGATGATGAGAAGACCAATACCATTACG
TACTCTTTTGAAAGTGTTATATGGATTTTAATTATAAGGAAAAATGTAAGAGCTAAACCA
TTGCTGATGATTTTGAAGGTGGTTAAAGAAGCACTGCTGAAAACAATAAAGGCAGCAGTT
GGGGACAAATGGAGTGACGAGTTGAGCCGTGCTTGGGAAGTAGCCTACGATGAATTGGCA
GCAGCTATTAAGAAGGCATAATTAGTATCTATTGCAGTAAAGTGTAATAAATAAATCTTG
TTTCACTATAAAACTTGTTACTATTAGACAAGGGCCTGATACAAAATGTTGGTTAAAATA
ATGGAATTATATAGTATTGGATAAAAATCTTAAGGTTAATATTCTATATTTGCGTAGGTT
TATGCTTGTGAATCATTATCGGTATTTTTTTTCCTTTCTGATAATTAATCGGTAAATTAT
ACAAATAAGTTCAAAATGATTTATATGTTTCAAAATTATTTTAACAGCAGGTAAAATGTT
ATTTGGTACGAAAGCTAATTCGTCGA

1
500 25
63 65
=== HUMAN MAS ONCOGENE === CELL VOL.45,711-719 ('86)
325
MDGSNVTSFVVEEPTNISTGRNASVGNAHRQIPIVHWVIMSISPVGFVENGILLWFLCFR
MRRNPFTVYITHLSIADISLLFCIFILSIDYALDYELSSGHYYTIVTLSVTFLFGYNTGL
YLLTAISVERCLSVLYPIWYRCHRPKYQSALVCALLWALSCLVTTMEYVMCIDREEESHS
RNDCRAVIIFIAILSFLVFTPLMLVSSTILVVKIRKNTWASHSSKLYIVIMVTIIIFLIF
AMPMRLLYLLYYEYWSTFGNLHHISLLFSTINSSANPFIYFFVGSSKKKRFKESLKVVLT
RAFKDEMQPRRQKDNCNTVTVETVV
3
=== BOVINE RHODOPSIN (BOVINE) CELL VOL.34 P.807 1983 ===
348
MNGTEGPNFYVPFSNKTGVVRSPFEAPQYYLAEPWQFSMLAAYMFLLIMLGFPINFLTLY
VTVQHKKLRTPLNYILLNLAVADLFMVFGGFTTTLYTSLHGYFVFGPTGCNLEGFFATLG
GEIALWSLVVLAIERYVVVCKPMSNFRFGENHAIMGVAFTWVMALACAAPPLVGWSRYIP
EGMQCSCGIDYYTPHEETNNESFVIYMFVVHFIIPLIVIFFCYGQLVFTVKEAAAQQQES
ATTQKAEKEVTRMVIIMVIAFLICWLPYAGVAFYIFTHQGSDFGPIFMTIPAFFAKTSAV
YNPVIYIMMNKQFRNCMVTTLCCGKNPLGDDEASTTVSKTETSQVAPA
=== MUSCARINIC ACHR ===
460
MNTSAPPAVSPNITVLAPGKGPWQVAFIGITTGLLSLATVTGNLLVLISFKVNTELKTVN
NYFLLSLACADLIIGTFSMNLYTTYLLMGHWALGTLACDLWLALDYVASNASVMNLLLIS
FDRYFSVTRPLSYRAKRTPRRAALMIGLAWLVSFVLWAPAILFWQYLVGERTVLAGQCYI
QFLSQPIITFGTAMAAFYLPVTVMCTLYWRIYRETENRARELAALQGSETPGKGGGSSSS
SERSQPGAEGSPETPPGRCCRCCRAPRLLQAYSWKEEEEEDEGSMESLTSSEGEEPGSEV
VIKMPMVDPEAQAPAKQPPRSSPNTVKRPTRKGRERAGKGQKPRGKEQLAKRKTFSLVKE
KKAARTLSAILLAFIVTWTPYNIMVLVSTFCKDCVPETLWELGYWLCYVNSTINPMCYAL
CNKAFRDTFRLLLLCRWDKRRWRKIPKRPGSVHRTPSRQC
=== BETA-ADRENERGIC RECEPTOR (HAMSTER) NATURE VOL.321 P.75 1986' ===
418
MGPPGNDSDFLLTTNGSHVPDHDVTEERDEAWVVGMAILMSVIVLAIVFGNVLVITAIAK
FERLQTVTNYFITSLACADLVMGLAVVPFGASHILMKMWNFGNFWCEFWTSIDVLCVTAS
IETLCVIAVDRYIAITSPFKYQSLLTKNKARMVILMVWIVSGLTSFLPIQMHWYRATHQK
AIDCYHKETCCDFFTNQAYAIASSIVSFYVPLVVMVFVYSRVFQVAKRQLQKIDKSEGRF
HSPNLGQVEQDGRSGHGLRRSSKFCLKEHKALKTLGIIMGTFTLCWLPFFIVNIVHVIQD
NLIPKEVYILLNWLGYVNSAFNPLIYCRSPDFRIAFQELLCLRRSSSKAYGNGYSSNSNG
KTDYMGEASGCQLGQEKESERLCEDPPGTESFVNCQGTVPSLSLDSQGRNCSTNDSPL

```
=== RAT PREPRO-AVP-NP ===
ATGCTCGCCATGATG
CTCAACACTACGCTCTCTGCTTGCTTCCTGAGCCTGCTGGCCCTC
ACCTCTGCCTGCTACTTCCAGAACTGCCCAAGAGGAGGCAAGAGGGCCACATCC
GACATG   GAGCTGAGACAGTGTCTCCCCTGCGGCCCTGGCGGCAAAGGGCGCTGCTTCGGGCCGAGC
ATCTGCTGCGCGGACGAGCTGGGCTGCTTCCTGGGCACCGCCGAGGCGCTGCGCTGCCAG
GAGGAGAACTACCTGCCCTCGCCCTG
CCAGTCTGGCCAGAAGCCTTGCGGAAGCGGAGGC
CGCTGCGCTGCCGCGGGCATCTGCTGCAGCGATGAGAGCTGCGTG
GCCGAGCCCGAGTGT CGAGAGGGTTTTTTCCGCCTCACCCGCGCTCGGGAGCAGAGCAACGCCA
CGCAGCTGGAC
GGGCCAGCCCGGGAGCTGCTGCTTAGGCTGGTACAGCTGGCTGGGACACAAGAGTCCGTG
GATTCTGCCAAGCCCCGGGTCTACTGA
//
=== BOVINE PREPRO-AVP-NPII ===
GCACAGTCTACAGAGCAGCACTGCGCACGTGTGCCCACGCGTG
CCAGGATGCCCGACGCC
ACACTGCCCGCCTGCTTCCTCAGCCTGCTGGCCTTCACCTCTGCTTGCTACTTC
CAGAAC  TGCCCAAGGGGCGGCAAGAGGGCCATGTCCGACCTGGAGCTGAGACAGTGTCTCCCCTGC
GGCCCCGGGGGCAAAGGCCGCTGCTT     CGGGCCCAGCATCTGCTGCGGGGACGAGCTGGGC
TGCTTCGTGGGCACGGCCGAGGCGCTGCGCTGCCAAGAGGAGAACTACCTGCCGTCGCCC
TGCCAGTCCGGCCAGAAGCCCTGCGGGAGCGGGGGCCGCTGCGCCGCCGCCGGCATCTGC
TGCAACGATGAGAGCTGCGTGACCGAGCCC
GAGTGCCGGGAAGGTGTCGGCTTCCCCCGC
CGCGTTCGCGCCAACGACCGGAGCAACGCGACCCTGCTGGACGGGCCGAGCGGGGCCTTG
     TTGCTGCGGCTGGTGCAGCTGGCGGGGGCGCCGGAGCCCGCGGAGCCCGCCCAGCCCGGC
GTCTACTGAGGCGCGCCCCCCCCCTCCCCACCCCTGCCCTCGCAGCACGAAAAATAAACG
TTTTAAAGGC
//
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