

Bos taurus mitochondrion, complete genome

NCBI Reference Sequence: NC_006853.1

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LOCUS NC_006853 16338 bp DNA circular MAM 07-JUN-2021
DEFINITION Bos taurus mitochondrion, complete genome.
ACCESSION NC_006853
VERSION NC_006853.1
DBLINK BioProject: [PRJNA13366](#)
KEYWORDS RefSeq.
SOURCE mitochondrion Bos taurus (cattle)
ORGANISM [Bos taurus](#)
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Laurasiatheria; Artiodactyla; Ruminantia;
Pecora; Bovidae; Bovinae; Bos.
REFERENCE 1 (bases 1 to 16338)
AUTHORS Chung,H.Y. and Ha,J.M.
TITLE Haplotype analysis of mitochondrial DNA in Korean native cattle
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 16338)
CONSRTM NCBI Genome Project
TITLE Direct Submission
JOURNAL Submitted (22-FEB-2005) National Center for Biotechnology
Information, NIH, Bethesda, MD 20894, USA
REFERENCE 3 (bases 1 to 16338)
AUTHORS Chung,H.Y. and Ha,J.M.
TITLE Direct Submission
JOURNAL Submitted (06-JAN-2004) Animal Genomics & Bioinformatics,
National
Livestock Research Institute, Omokchon don, Suwon, KY 441701,
Korea
COMMENT REVIEWED [REFSEQ](#): This record has been curated by NCBI staff. The
reference sequence was derived from [AY526085](#).
On Feb 27, 2006 this sequence version replaced [NC_001567.3](#).
COMPLETENESS: full length.
FEATURES Location/Qualifiers
source 1..16338
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/organelle="mitochondrion"
/mol_type="genomic DNA"
/db_xref="taxon:[9913](#)"
/breed="Korean native"
[D-loop](#) join(15792..16338,1..363)
[gene](#) 364..430

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	/db_xref="GeneID: 64986886 "
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	/db_xref="GeneID: 64986887 "
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gene	1453..3023
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	/db_xref="GeneID: 64986888 "
rRNA	1453..3023
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gene	3024..3098
	/locus_tag="KEH36_t03"
	/db_xref="GeneID: 64986889 "
tRNA	3024..3098
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	/product="tRNA-Leu"
	/anticodon=(pos:3059..3061,aa:Leu,seq:taa)
	/codon_recognized="UUR"
	/db_xref="GeneID: 64986889 "
gene	3101..4056
	/gene="ND1"
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	/db_xref="GeneID: 3283877 "
CDS	3101..4056
	/gene="ND1"

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residues to the mRNA"
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LLQPIADAIAIKLFIKEPLRPATSSASMFILAPIMALGLALTMWIPLPMPYPLINMNLGV
LFMLAMSSSLAVYSILWSGWASNSKYALIGALRAVAQTISYEVTLAIILSVVLMMSGSF
TLSTLITTQEQMWLILPAWPLAMMWFI STLAE TNRAPFDL TEGESELVSGFNVEYAAG
PFALFFMAEYANIIMMNI FTAILFLGTSHNPHMPELYTINFTIKSLLLTMSFLWIRAS
YPRFRYDQLMHL L WKNFLPLTLALCMWHVSLPILTSGIPPQT"
gene      4057..4125
/locus_tag="KEH36_t04"
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tRNA      4057..4125
/locus_tag="KEH36_t04"
/product="tRNA-Ile"
/anticodon=(pos:4086..4088,aa:Ile,seq:gat)
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gene      complement(4123..4194)
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/db_xref="GeneID:64986890"
tRNA      complement(4123..4194)
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/product="tRNA-Gln"
/db_xref="GeneID:64986890"
gene      4197..4265
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tRNA      4197..4265
/locus_tag="KEH36_t06"
/product="tRNA-Met"
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/db_xref="GeneID:64986891"
gene      4266..5307
/gene="ND2"
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/db_xref="GeneID:3283878"
CDS       4266..5307
/gene="ND2"

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/db_xref="GeneID:3283878"
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MKNHNPRATEASTKYFLTQSTASMLLMMAVIINVMFSGQWTVMKLFSPMASMLMTMAL
AMKLGMAPFHFVPEVTQGIPLSSGLILLTWQKLAPMSVLYQIFPSINLNLILTLVL
SILIGGWGGLNQTQLRKIMAYSSIAHMGWMTAVLPYNPTMTLLNLIIYIIMTSTMFTM
FMANSTTTLSLSHTWNKTPIMTVLILATLLSMGGLPPLSGFMPKWMIIQEMTKNNSI
ILPTFMAITALLNLYFYMRLTYSTTLTMFPSTNNMKMKWQFPLMKKMTFLPTMVVLST
MMLPLTPMLSVLE"
gene      5308..5374
/locus_tag="KEH36_t07"
/db_xref="GeneID:64986877"
tRNA      5308..5374
/locus_tag="KEH36_t07"
/product="tRNA-Trp"
/anticodon=(pos:5338..5340,aa:Trp,seq:tca)
/db_xref="GeneID:64986877"
gene      complement(5376..5444)
/locus_tag="KEH36_t08"
/db_xref="GeneID:64986892"
tRNA      complement(5376..5444)
/locus_tag="KEH36_t08"
/product="tRNA-Ala"
/db_xref="GeneID:64986892"
gene      complement(5446..5518)
/locus_tag="KEH36_t09"
/db_xref="GeneID:64986893"
tRNA      complement(5446..5518)
/locus_tag="KEH36_t09"
/product="tRNA-Asn"
/db_xref="GeneID:64986893"
rep_origin 5519..5549
/note="origin of L-strand replication"
gene      complement(5551..5617)
/locus_tag="KEH36_t10"
/db_xref="GeneID:64986894"
tRNA      complement(5551..5617)

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gene	<pre> complement (5618..5685) /locus_tag="KEH36_t11" /db_xref="GeneID:64986895" </pre>
tRNA	<pre> complement (5618..5685) /locus_tag="KEH36_t11" /product="tRNA-Tyr" /db_xref="GeneID:64986895" </pre>
gene	<pre> 5687..7231 /gene="COX1" /locus_tag="KEH36_p11" /db_xref="GeneID:3283879" </pre>
CDS	<pre> 5687..7231 /gene="COX1" /locus_tag="KEH36_p11" /codon_start=1 /transl_table=2 /product="cytochrome c oxidase subunit I" /protein_id="YP_209207.1" /db_xref="GeneID:3283879" /translation="MFINRWLFSTSHKDIGTLYLLFDAWAGMVGTA LSLLIRAE LGQP GTLLGDDQIYNAVVTAAHAFVMIFFMVMPIMIGGFGNWLVP LMIGAPDMAFFPRMNMMSF WLLPPSFLLLLASSMVEAGAGTGWTVYPPLAGNLAHAGASV DLTIFSLHLAGVSSILG AINFITTIINMKPPAMSQYQTPLFVWSVMITAVLLLLSLPV LAAGITMLLTDRNLNTT FFDPAGGGDPILYQHLEWFFFGHPEVYILILPGFGMISHIV TYYSGKKEPFGYMGMVWA MMSIGFLGFIVWAHHMFTVGMDVDTRAYFTSATMIIAIP TGVKVFSWLATLHGNIKW SPAMMWALGFIFLFTVGGLTGIVLANSSLDIVLHDTYYV VAHFHYVLSMGAVFAIMGG FVHWFPFLFSGYTLNDTWAKIHFAIMFVGVNMTFFPQH FLGLSGMPRRYSYDYPDAYTMW NTISSMGSFISLTAVMLMVFIWEAFASKREVLTVDLT TTNLEWLNGCPPPYHTFEEP TYVNLK" </pre>
gene	<pre> complement (7229..7299) /locus_tag="KEH36_t12" /db_xref="GeneID:64986878" </pre>
tRNA	<pre> complement (7229..7299) /locus_tag="KEH36_t12" /product="tRNA-Ser" /codon_recognized="UCN" /db_xref="GeneID:64986878" </pre>
gene	<pre> 7304..7372 /locus_tag="KEH36_t13" /db_xref="GeneID:64986896" </pre>
tRNA	<pre> 7304..7372 </pre>

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/db_xref="GeneID:3283880"
CDS       7374..8057
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/codon_start=1
/transl_table=2
/product="cytochrome c oxidase subunit II"
/protein_id="YP_209208.1"
/db_xref="GeneID:3283880"
/translation="MAYPMQLGFQDATSPIMEELLHFHDHTLMIVFLISSLVLYIISL
MLTTKLTHSTMDAQEVETIWTILPAIILILIALPSLRILYMMDEINNPSLTVKTMGH
QWYWSYEYTDYEDLSFDSYMIPTSELKPGELRLLEVDNRVVLPMEMTIRMLVSSDVL
HSWAVPSLGLKTD AIPGR LNQTTLMS SRPGLYYGQCSEICGSNHSFMPIVLELVPLKY
FEKWSASML"
gene      8061..8127
/locus_tag="KEH36_t14"
/db_xref="GeneID:64986879"
tRNA      8061..8127
/locus_tag="KEH36_t14"
/product="tRNA-Lys"
/anticodon=(pos:8088..8090,aa:Lys,seq:ttt)
/db_xref="GeneID:64986879"
gene      8129..8329
/locus_tag="KEH36_p09"
/db_xref="GeneID:3283881"
CDS       8129..8329
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/codon_start=1
/transl_table=2
/product="ATP synthase F0 subunit 8"
/protein_id="YP_209209.1"
/db_xref="GeneID:3283881"
/translation="MPQLDTSTWLTMLSMFLTLFIIFQLKVSKHNFYHNPELTPTKM
LKQNTPWETKWTKIYLP LLLPL"
gene      8290..8970

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/ db_xref="GeneID:3283882"
CDS      8290..8970
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/ locus_tag="KEH36_p08"
/ codon_start=1
/ transl_table=2
/ product="ATP synthase F0 subunit 6"
/ protein_id="YP_209210.1"
/ db_xref="GeneID:3283882"
/ translation="MNENLFTSFITPVILGLPLVTLIVLFPSSLFPTS NRLVSNRFVT
LQQWMLQLVSKQMMSIHNSKGQTWTLMLMSLILFIGSTNLLGLLPHSFTPTQLSMNL
GMAIPLWAGAVITGFRNKTKASLAHFLPQGTPTPLIPMLVIIETISLFIQPMALAVRL
TANITAGHLLIHLIGGATLALMSISTTTALITFTILILLTILEFAVAMIQAYVFTLLV
SLYLHDNT"
gene      8970..9750
/ gene="COX3"
/ locus_tag="KEH36_p07"
/ db_xref="GeneID:3283883"
CDS      8970..9750
/ gene="COX3"
/ locus_tag="KEH36_p07"
/ note="TAA stop codon is completed by the addition of 3' A
residues to the mRNA"
/ codon_start=1
/ transl_except=(pos:9750,aa:TERM)
/ transl_table=2
/ product="cytochrome c oxidase subunit III"
/ protein_id="YP_209211.1"
/ db_xref="GeneID:3283883"
/ translation="MTHQTHAYH MVNPSWPPLTGALSALLMTSGLTMWFHFSMTLLM
IGLTNMLTMYQWWRDVIRESTFQGHHTPAVQKGLRYGMILFIISEVLFFTGFFWAFY
HSSLAPTPELGGCWPPTGIHPLNPLEVPLLNTSVLLASGV SITWAHHSIMEGDRK HML
QALFITITLGVYFTLLQASEYYEAPFTISDGVYGSTFFVATGFHGLHVIIGSTFLIVC
FFRQLKFHFTSNHHFGFEAAAWYWHFVDVVWLF LYVSIYWWG"
gene      9754..9822
/ locus_tag="KEH36_t15"
/ db_xref="GeneID:64986880"
tRNA      9754..9822
/ locus_tag="KEH36_t15"
/ product="tRNA-Gly"
/ anticodon=(pos:9785..9787,aa:Gly,seq:tcc)
/ db_xref="GeneID:64986880"

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gene 9823..10168
 /gene="ND3"
 /locus_tag="KEH36_p06"
 /db_xref="GeneID:3283884"

CDS 9823..10168
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 /transl_table=2
 /product="NADH dehydrogenase subunit 3"
 /protein_id="YP_209212.2"
 /db_xref="GeneID:3283884"
 /translation="MNLMLALLTNFTLATLLVIIAFWLPQLNVYSEKTSPTYECGFDPM
 GSARLPFSMKFFLVAITFLLFDLEIALLLPLPWASQTANLNTMLTMAFLIILLAVSL
 AYEWTQKGLEWTE"

gene 10170..10238
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 /db_xref="GeneID:64986881"

tRNA 10170..10238
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 /product="tRNA-Arg"
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gene 10239..10535
 /gene="ND4L"
 /locus_tag="KEH36_p05"
 /db_xref="GeneID:3283885"

CDS 10239..10535
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 /codon_start=1
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 /product="NADH dehydrogenase subunit 4L"
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 /db_xref="GeneID:3283885"
 /translation="MSMVYMNIMMAFTVSLVGLLMYRSHLMSSLLCLEGMMLSLFVMA
 ALTIILNSHFTLASMMPIILLVFAACEAALGLSLLVMVSNTYGTDYVQNLNLLQC"

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 /db_xref="GeneID:3283886"

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 QLFLIMTFTAMELILFYILFEATLVPTLIIITRWGNQTERLNAGLYFLFYTLAGSLPL
 LVALIYIQNTVGSLNFMQLQYWVQPVHNSWSNVFMWLACMMAFMVKMPLYGLHLWLPK
 AHVEAPIAGSMVLA AVLKLG YGMLRITLILNPMTDFMAYPFIMLSLWGMIMTSSIC
 LRQTDLKSLIAYSSVSHMALVIVAILIQTPWSYMGATALMIAHGLTSSMLFCLANSNY
 ERIHSRTMILARGLQTLPLMATWWLLASLTNLALPPTINLIGELFVVMSTFSWSNIT
 IILMGVNMVITALYSYMLIMTQRGKYTYHINNISPSFTRENALMSLHILPLLLLTN
 PKIILGPLY"

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 /locus_tag="KEH36_t18"
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gene 12038..12108
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tRNA 12038..12108
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/protein_id="YP_209215.1"
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FSMWYMYSDPNINKFFKYLLLFLITMLILVTANNLFQLFIGWEGVGIMSFLIGWYWG
RADANTAALQAILYNRIGDIGFILAMAWFLTNLNTWDLQQIFMLNPSDSNMPLIGLAL
AATGKSAQFGLHPWLPSAMEGPTPVSALLHSSTMVAGIFLLIRFYPLTENNKYIQSI
TLCLGAITTLFTAMCALTQNDIKKIIAFSTSSQLGLMMVTIGINQPYLAFLHICTHAF
FKAMLFMCSGSIHSLNDEQDIRKMGGFLKAMPFTTTALIVGSLALTGMPFLTGFYSK
DLIIEAANTSYTNAWALLMTLIATSFTAIYSTRIIFFALLGQPRFPTLVNINENNPLL
INSIKRLLIGSLFAGYIISNNIPPTTIPQMTMPYYLKTALIVTILGFILALEISNMT
KNLKYHYPSNAFKFSTLLGYFPTIMHRLAPYMNLSMSQKSASSLLDLIWLEAILPKTI
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gene      complement(13913..14440)
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/db_xref="GeneID:3283888"
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/db_xref="GeneID:3283888"
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MVYYVLKDKEVEVVFENGLGDWVIYDTGDSGFFSEEAMGIAALYSYGTWLVIIVTGWS
LLIGVVVIMEITRGN"
gene      complement(14441..14509)
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/db_xref="GeneID:64986883"

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 /product="tRNA-Glu"
 /db_xref="GeneID:64986883"

gene 14514..15653
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 /locus_tag="KEH36_p01"
 /db_xref="GeneID:3283889"

CDS 14514..15653
 /gene="CYTB"
 /locus_tag="KEH36_p01"
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 /transl_table=2
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 /protein_id="YP_209217.1"
 /db_xref="GeneID:3283889"
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 ILTGLFLAMHYTSDTTTAFSSVTHICRDVNYGWIIRYMHANGASMFFICLYMHVGRGL
 YYGSYTFLETWNIGVILLLTVMATAFMGYVLPWGQMSFWGATVITNLLSAIPYIGTNL
 VEWIWGGFSVDKATLTRFFAFHFILPFIIMAIAMVHLLFLHETGSNNPTGISSDVDKI
 PFHPYYTIKDILGALLLILALMLLVLFAPDLLGDPDNYTPANPLNTPPHIKPEWYFLF
 AYAILRSIPNKLGGVLALAFSILILALIPLLHTSKQRSMMFRPLSQCLFWALVADLLT
 LTWIGGQPVEHPYITIGQLASVLYFLILVLMPTAGTIENKLLKW"

gene 15658..15726
 /locus_tag="KEH36_t21"
 /db_xref="GeneID:64986884"

tRNA 15658..15726
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 /product="tRNA-Thr"
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 /db_xref="GeneID:64986884"

gene complement (15726..15791)
 /locus_tag="KEH36_t22"
 /db_xref="GeneID:64986899"

tRNA complement (15726..15791)
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 /product="tRNA-Pro"
 /anticodon=(pos:complement(15757..15759),aa:Pro,seq:ggg)
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ORIGIN

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121 attgtagctg gacttaactg catcttgagc accagcataa tgataagcat ggacattaca
181 gtcaatggtc acaggacata aattatatta tatatcccc cttcataaaa atttccccct

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241 taaatatcta ccaccacttt taacagactt ttccctagat acttatttaa atttttcacg
301 ctttcaatac tcaatttagc actccaaaca aagtcaatat ataaacgcag gccccccccc
361 cccgttgatg tagcttaacc caaagcaagg cactgaaaat gcctagatga gtctcccaac
421 tccataaaca cataggtttg gtcccagcct tctgtttaac tcttaataaa cttacacatg
481 caagcatcta caccocagtg agaatgcct ctaggttatt aaaactaaga ggagctggca
541 tcaagcacac accctgtagc tcacgacgcc ttgcttaacc acaccccacg ggaaacagca
601 gtgacaaaaa ttaagccata aacgaaagtt tgactaagtt atattaatta gggttggtaa
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721 acgtgttaaa gcaccatacc aaataggggt aaattctaac taagctgtaa aaagccatga
781 ttaaaataaa aataaatgac gaaagtgacc ctacaatagc cgacgcacta tagctaagac
841 ccaaactggg attagatacc ccactatgct tagccctaaa cacagataat tacataaaca
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