NRCD Human Full-Length cDNA Clone

Gene Engineering Division
RIKEN BioResource Research Center

RIKEN Clone ID : ARe04D08

Lot# : 7672_B3Jr

Vector : pKA1U5

Gene	COL18A1	
RefSeq_mRNA	NM_130445.4	5399 bp

● Plasmid DNA purification

Date : 2023/10/26 Culture : LB (100 ug/ml Ampicillin) 5 ml -> at 37 deg C O/N

Date : 2023/10/27 Purification : QIAGEN Miniprep kit -> dH_2O 100 ul

● Digestion by restriction enzyme/Concentrarion calibration

Date : 2023/10/27

DNA concentration (O.D.): 265 ng/ul

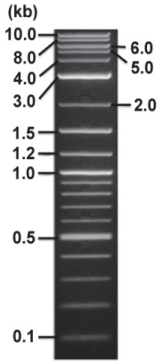
< Size of fragment expected from this clone >

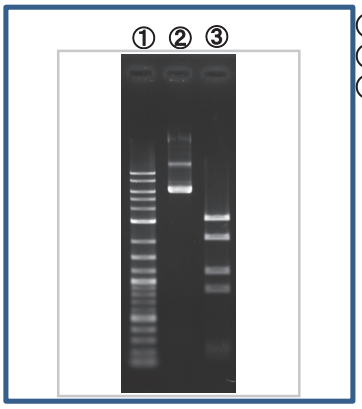
DNA	0.35	ul
Enzyme (BamHI)	1	ul
Buffer H	1	ul
dH_2O	7.65	ul
Total	10	ul

BamHI 3.1kb (vector), 2.1, 1.2, 0.9, 0.2, 0.2 kb

Erectrophoresis : 1% agarose gel, 1x TAE Buffer

Marker : 2-Log DNA Ladder (NEB#N3200L)





①:Marker
②:uncut
③:BamHI

● Confirmation of the sequence

Date : 2023/11/06

full sequence	ARe04D08hts01.seq

検 '25.04.09 笹沼

● Adjust plasmid DNA solution to 25 ng/ul

Date : 2023/12/12

DNA (265 ng/ul)	82	ul
10x TE	87	ul
dH_2O	700	ul
Total	869	ul

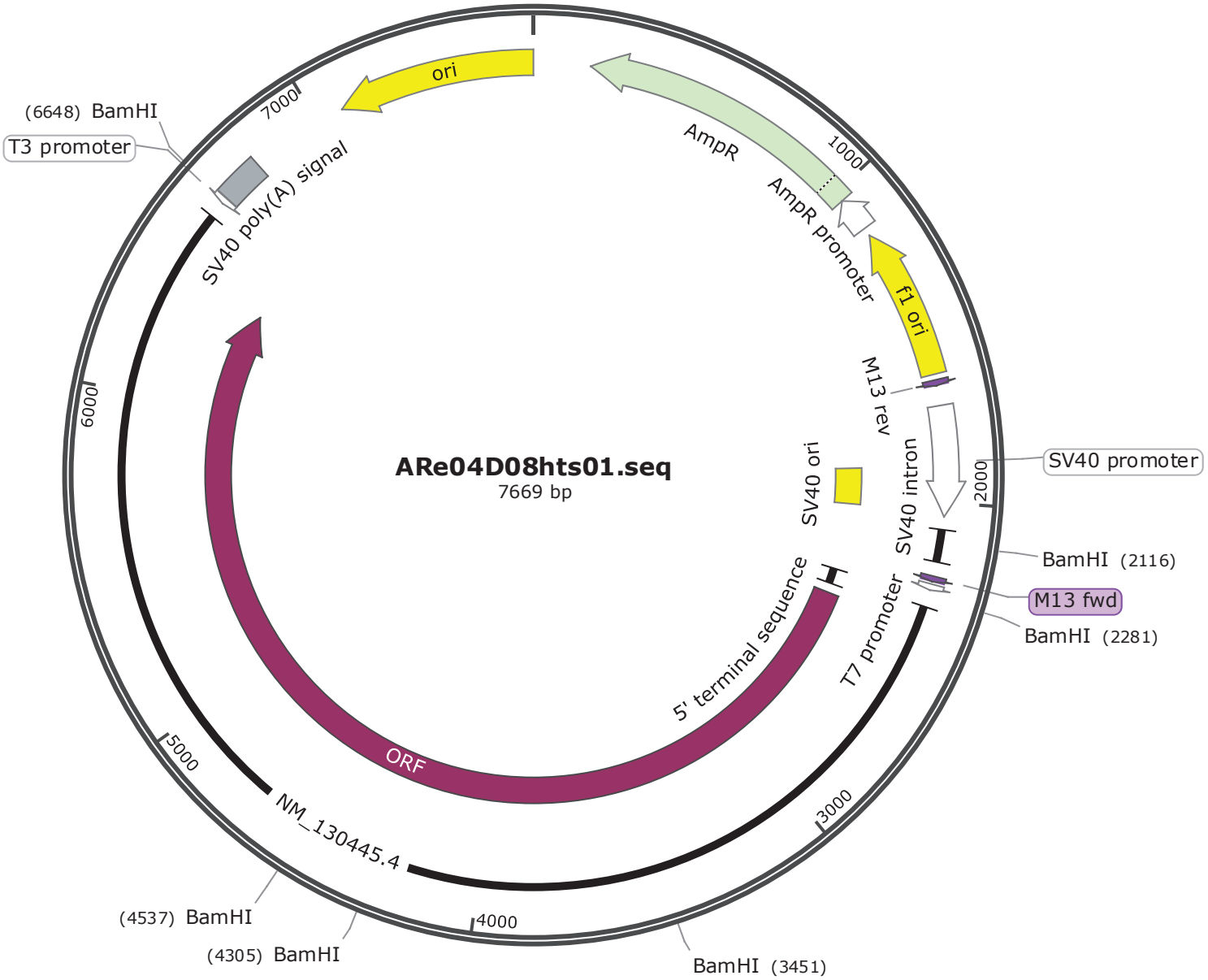
● Shipping

☑ Conc. : 25 ng/μl, Volume : 40 μl

☐ Conc. : __ ng/μl, Volume : __ μl

APPROVED BY : 検 '23.12.12 笹沼 検 '25.04.09 笹沼

http://dna.brc.riken.jp/index.html


ARe04D08hts01.seq
7669 bp
ori
AmpR
AmpR promoter
f1 ori
M13 rev
SV40 promoter
SV40 intron
BamHI (2116)
M13 fwd
BamHI (2281)
T7 promoter
3000
BamHI (3451)
4000
(4305) BamHI
(4537) BamHI
NM_130445.4
5000
ORF
5' terminal sequence
SV40 ori
6000
SV40 poly(A) signal
T3 promoter
(6648) BamHI
7000
1000
2000

BLAST Results

Questions/comments

Blast 2 sequences

Job title: NM_001845:Homo sapiens collagen type IV alpha...

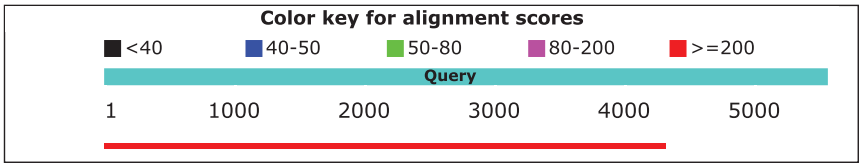
RID ZBZZF9PY114 (Expires on 04-10 13:04 pm)

Query ID	NM_130445.4	**Subject ID**	lcl|Query_6161161
Description	Homo sapiens collagen type XVIII alpha 1 chain (COL18A1), transcript variant 2, mRNA	**Description**	None See details
Molecule type	rna	**Molecule type**	dna
Query Length	5399	**Subject Length**	7669
		Program	BLASTN 2.16.1+

ARe04D08hts01.seq

Graphic Summary

Distribution of the top 1 Blast Hits on 1 subject sequences



Dot Matrix View

Descriptions

Sequences producing significant alignments:

Description	Max Score	Total Score	Query Cover	E value	Per. Ident	Accession
None provided	7867	7867	79%	0.0	99.95%	Query_6161161

Alignments

Sequence ID: Query_6161161 Length: 7669 Number of Matches: 1
Range 1: 2314 to 6579

Score	Expect	Identities	Gaps	Strand	Frame
7867 bits(4260)	0.0()	4264/4266(99%)	0/4266(0%)	Plus/Plus	

Features:

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Query              1     GGTCCGAGCGGGTGCACCGCGGCGGAGGAGGCAGCATCCCGCGGCGCTGACGGTCCTGGG  60
Sbjct              2314  ............................................................  2373

CDS:collagen alpha-1  1            M  A  P  R  C  P  W  P  W  P  R  R  R  R  L  L  D  V
Query              61    GAGAGCATGGCGCCGAGGTGCCCCTGGCCATGGCCGCGGCGGCGGCGGCGCCTCCTGGACGTG  120
Sbjct              2374  ............................................................  2433

CDS:collagen alpha-1  19     L  A  P  L  V  L  L  L  G  V  R  A  A  S  A  E  P  E  R  I
Query              121   CTCGCGCCCCTGGTCCTGCTGCTCGGGGTCCGCGCGGCCTCCGCGGAGCCAGAGCGCATC  180
Sbjct              2434  ............................................................  2493

CDS:collagen alpha-1  39     S  E  E  V  G  L  L  Q  L  L  G  D  P  P  P  Q  Q  V  T  Q
Query              181   AGCGAGGAGGTGGGGCTGCTGCAGCTCCTTGGGGACCCCCCGCCCCAGCAGGTCACCCAG  240
Sbjct              2494  ............................................................  2553

CDS:collagen alpha-1  59     T  D  D  P  D  V  G  L  A  Y  V  F  G  P  D  A  N  S  G  Q
Query              241   ACGGATGACCCCGACGTCGGGCTGGCCTACGTCTTTGGGCCAGATGCCAACAGTGGCCAA  300
Sbjct              2554  ............................................................  2613

CDS:collagen alpha-1  79     V  A  R  Y  H  F  P  S  L  F  F  R  D  F  S  L  L  F  H  I
Query              301   GTGGCCCGGTACCACTTCCCCAGCCTCTTCTTCCGTGACTTCTCACTGCTGTTCCACATC  360
Sbjct              2614  ............................................................  2673
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CDS:collagen alpha-1  99    R  P  A  T  E  G  P  G  V  L  F  A  I  T  D  S  A  Q  A  M
Query                 361   CGGCCAGCCACAGAGGGCCCAGGGGTGCTGTTCGCCATCACGGACTCGGCGCAGGCCATG  420
Sbjct                 2674  ............................................................  2733

CDS:collagen alpha-1  119   V  L  L  G  V  K  L  S  G  V  Q  D  G  H  Q  D  I  S  L  L
Query                 421   GTCTTGCTGGGCGTGAAGCTCTCTGGGGTGCAGGACGGGCACCAGGACATCTCCCTGCTC  480
Sbjct                 2734  ............................................................  2793

CDS:collagen alpha-1  139   Y  T  E  P  G  A  G  Q  T  H  T  A  A  S  F  R  L  P  A  F
Query                 481   TACACAGAACCAGGTGCAGGCCAGACCCACACAGCCGCCAGCTTCCGGCTCCCCGCCTTC  540
Sbjct                 2794  ............................................................  2853

CDS:collagen alpha-1  159   V  G  Q  W  T  H  L  A  L  S  V  A  G  G  F  V  A  L  Y  V
Query                 541   GTCGGCCAGTGGACACACTTAGCCCTCAGTGTGGCAGGTGGCTTTGTGGCCCTCTACGTG  600
Sbjct                 2854  ............................................................  2913

CDS:collagen alpha-1  179   D  C  E  E  F  Q  R  M  P  L  A  R  S  S  R  G  L  F  L  F
Query                 601   GACTGTGAGGAGTTCCAGAGAATGCCGCTTGCTCGGTCCTCACGGGGCCTGGAGCTGGAG  660
Sbjct                 2914  ............................................................  2973

CDS:collagen alpha-1  199   P  G  A  G  L  F  V  A  Q  A  G  G  A  D  P  D  K  F  Q  G
Query                 661   CCTGGCGCCGGGCTCTTCGTGGCTCAGGCGGGGGGAGCGGACCCTGACAAGTTCCAGGGG  720
Sbjct                 2974  ............................................................  3033

CDS:collagen alpha-1  219   V  I  A  E  L  K  V  R  R  D  P  Q  V  S  P  M  H  C  L  D
Query                 721   GTGATCGCTGAGCTGAAGGTGCGCAGGGACCCCCAGGTGAGCCCCATGCACTGCCTGGAC  780
Sbjct                 3034  ............................................................  3093

CDS:collagen alpha-1  239   E  E  G  D  D  S  D  G  A  S  G  D  S  G  S  G  L  G  D  A
Query                 781   GAGGAAGGCGATGACTCAGATGGGGCATCCGGAGACTCTGGCAGCGGGCTCGGGGACGCC  840
Sbjct                 3094  ............................................................  3153

CDS:collagen alpha-1  259   R  E  L  L  R  E  E  T  G  A  A  L  K  P  R  L  P  A  P  P
Query                 841   CGGGAGCTTCTCAGGGAGGAGACGGGCGCGGCCCTAAAACCCAGGCTCCCCGCGCCACCC  900
Sbjct                 3154  ............................................................  3213

CDS:collagen alpha-1  279   P  V  T  T  P  P  L  A  G  G  S  S  T  E  D  S  R  S  E  E
Query                 901   CCCGTCACCACGCCACCCTTGGCTGGAGGCAGCAGCACGGAAGATTCCAGAAGTGAAGAA  960
Sbjct                 3214  ............................................................  3273

CDS:collagen alpha-1  299   V  E  E  Q  T  T  V  A  S  L  G  A  Q  T  L  P  G  S  D  S
Query                 961   GTCGAGGAGCAGACCACGGTGGCTTCGTTAGGAGCTCAGACACTTCCTGGCTCAGATTCT  1020
Sbjct                 3274  ............................................................  3333

CDS:collagen alpha-1  319   V  S  T  W  D  G  S  V  R  T  P  G  G  R  V  K  F  G  G  L
Query                 1021  GTCTCCACGTGGGACGGGAGTGTCCGGACCCCTGGGGGCCGCGTGAAAGAGGGCGGCCTG  1080
Sbjct                 3334  ............................................................  3393

CDS:collagen alpha-1  339   K  G  Q  K  G  E  P  G  V  P  G  P  P  G  R  A  G  P  P  G
Query                 1081  AAGGGGCAGAAAGGGGAGCCAGGTGTTCCGGGCCCACCTGGCCGGGCAGGCCCCCCAGGA  1140
Sbjct                 3394  ............................................................  3453

CDS:collagen alpha-1  359   S  P  C  L  P  G  P  P  G  L  P  C  P  V  S  P  L  G  P  A
Query                 1141  TCCCCATGCCTACCTGGTCCCCCGGGTCTCCCGTGCCCAGTGAGTCCCCTGGGTCCTGCA  1200
Sbjct                 3454  ............................................................  3513

CDS:collagen alpha-1  379   G  P  A  L  Q  T  V  P  G  P  Q  G  P  P  G  P  P  G  R  D
Query                 1201  GGCCCAGCGTTGCAAACTGTCCCCGGACCACAAGGACCCCCAGGGCCTCCGGGGAGGGAC  1260
Sbjct                 3514  ............................................................  3573
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CDS:collagen alpha-1  399   G  T  P  G  R  D  G  E  P  G  D  P  G  E  D  G  K  P  G  D
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Sbjct                 3574  ............................................................  3633

CDS:collagen alpha-1  419   T  G  P  Q  G  F  P  G  T  P  G  D  V  G  P  K  G  D  K  G
Query                 1321  ACCGGGCCACAAGGCTTCCCCGGGACTCCAGGGGACGTAGGTCCCAAGGGCGACAAGGGA  1380
Sbjct                 3634  ............................................................  3693

CDS:collagen alpha-1  439   D  P  G  V  G  E  R  G  P  P  G  P  Q  G  P  P  G  P  P  G
Query                 1381  GACCCTGGGGTTGGAGAGAGAGGGCCCCCAGGACCCCAAGGGCCTCCAGGGCCCCCAGGA  1440
Sbjct                 3694  ............................................................  3753

CDS:collagen alpha-1  459   P  S  F  R  H  D  K  L  T  F  I  D  M  E  G  S  G  F  G  G
Query                 1441  CCCTCCTTCAGACACGACAAGCTGACCTTCATTGACATGGAGGGATCTGGCTTCGGGGGC  1500
Sbjct                 3754  ............................................................  3813

CDS:collagen alpha-1  479   D  L  E  A  L  R  G  P  R  G  F  P  G  P  P  G  P  P  G  V
Query                 1501  GATCTGGAGGCCCTGCGGGGTCCTCGAGGCTTCCCTGGACCTCCCGGACCCCCCGGTGTC  1560
Sbjct                 3814  ............................................................  3873

CDS:collagen alpha-1  499   P  G  L  P  G  E  P  G  R  F  G  V  N  S  S  D  V  P  G  P
Query                 1561  CCAGGCCTGCCCGGCGAGCCAGGCCGCTTTGGGGGTGAACAGCTCCGACGTCCCAGGACCC  1620
Sbjct                 3874  ............................................................  3933

CDS:collagen alpha-1  519   A  G  L  P  G  V  P  G  R  E  G  P  P  P  G  F  P  G  L  P  G
Query                 1621  GCCGGCCTTCCTGGTGTGCCTGGGCGCGAGGGTCCCCCCGGGTTTCCTGGCCTCCCGGGA  1680
Sbjct                 3934  ............................................................  3993

CDS:collagen alpha-1  539   P  P  G  P  P  G  R  E  G  P  P  G  R  T  G  Q  K  G  S  L
Query                 1681  CCCCCAGGCCCTCCGGGAAGAGAGGGGCCCCCAGGAAGGACTGGGCAGAAAGGCAGCCTG  1740
Sbjct                 3994  ............................................................  4053

CDS:collagen alpha-1  559   G  E  A  G  A  P  G  H  K  G  S  K  G  A  P  G  P  A  G  A
Query                 1741  GGTGAAGCAGGCGCCCCAGGACATAAGGGGAGCAAGGGAGCCCCCGGTCCTGCTGGTGCT  1800
Sbjct                 4054  ............................................................  4113

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Sbjct                 4114  ............................................................  4173

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Query                 1861  cccctgggccccAGGACCAGGACTCCCCGCTGGATTTGATGACATGGAAGGCTCCGGG  1920
Sbjct                 4174  ............................................................  4233

CDS:collagen alpha-1  619   G  P  F  W  S  T  A  R  S  A  D  G  P  Q  G  P  P  G  L  P
Query                 1921  GGGCCCTTCTGGTCAACAGCCCGAAGCGCTGATGGGCCACAGGGACCTCCCGGCCTGCCG  1980
Sbjct                 4234  ..............C.............................................  4293

CDS:collagen alpha-1  639   G  L  K  G  D  P  G  V  P  G  L  P  G  A  K  G  F  V  G  A
Query                 1981  GGACTTAAGGGGGATCCTGGCGTGCCTGGGCTGCCGGGGGCGAAGGGAGAAGTTGGAGCA  2040
Sbjct                 4294  .....C.....................................................  4353

CDS:collagen alpha-1  659   D  G  V  P  G  F  P  G  L  P  G  R  E  G  I  A  G  P  Q  G
Query                 2041  GATGGAGTCCCCGGGTTCCCCGGCCTCCCTGGCAGAGAGGGCATTGCTGGGCCCCAGGGG  2100
Sbjct                 4354  ............................................................  4413

CDS:collagen alpha-1  679   P  K  G  D  R  G  S  R  G  E  K  G  D  P  G  K  D  G  V  G
Query                 2101  CCAAAGGGAGACAGAGGCAGCCGGGGAGAAAAGGGAGATCCAGGGAAGGACGGAGTCGGG  2160
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1939 G>C (A625P)

1986 T>C

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Sbjct                4414 ..........................................................  4473

CDS:collagen alpha-1  699   Q  P  G  L  P  G  P  P  G  P  P  G  P  V  V  Y  V  S  E  Q
Query                2161 CAGCCGGGCCTCCCTGGccccccccGGACCCCCGGGACCTGTGGTCTACGTGTCGGAGCAG  2220
Sbjct                4474 ..........................................................  4533

CDS:collagen alpha-1  719   D  G  S  V  L  S  V  P  G  P  E  G  R  P  G  F  A  G  F  P
Query                2221 GACGGATCCGTCCTGAGCGTGCCGGGACCTGAGGGCCGGCCGGGTTTCGCAGGCTTTCCC  2280
Sbjct                4534 ..........................................................  4593

CDS:collagen alpha-1  739   G  P  A  G  P  K  G  N  L  G  S  K  G  E  R  G  S  P  G  P
Query                2281 GGACCTGCAGGACCCAAGGGCAACCTGGGCTCTAAGGGCGAACGAGGCTCCCCGGGACCC  2340
Sbjct                4594 ..........................................................  4653

CDS:collagen alpha-1  759   K  G  E  K  G  E  P  G  S  I  F  S  P  D  G  G  A  L  G  P
Query                2341 AAGGGTGAGAAGGGTGAACCGGGCAGCATCTTCAGCCCCGACGGCGGTGCCCTGGGCCCT  2400
Sbjct                4654 ..........................................................  4713

CDS:collagen alpha-1  779   A  Q  K  G  A  K  G  E  P  G  F  R  G  P  P  G  P  Y  G  R
Query                2401 GCCCAGAAAGGAGCCAAGGGAGAGCCGGGCTTCCGAGGACCCCCGGGTCCATACGGACGG  2460
Sbjct                4714 ..........................................................  4773

CDS:collagen alpha-1  799   P  G  Y  K  G  E  I  G  F  P  G  R  P  G  R  P  G  M  N  G
Query                2461 CCGGGGTACAAGGGAGAGATTGGCTTTCCTGGACGGCCGGGTCGCCCCGGGATGAACGGA  2520
Sbjct                4774 ..........................................................  4833

CDS:collagen alpha-1  819   L  K  G  E  K  G  E  P  G  D  A  S  L  G  F  G  M  R  G  M
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Sbjct                4834 ..........................................................  4893

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Sbjct                4894 ..........................................................  4953

CDS:collagen alpha-1  859   N  V  F  A  E  S  S  R  P  G  P  P  G  L  P  G  N  Q  G  P
Query                2641 AATGTGTTTGCTGAGTCCAGCCGCCCCGGGCCTCCAGGATTGCCAGGGAATCAGGGCCCT  2700
Sbjct                4954 ..........................................................  5013

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Sbjct                5014 ..........................................................  5073

CDS:collagen alpha-1  899   F  D  F  L  Q  L  E  A  E  M  K  G  E  K  G  D  R  G  D  A
Query                2761 TTTGACTTTCTTCAGTTGGAGGCTGAAATGAAGGGGGAGAAGGGAGACCGAGGTGATGCA  2820
Sbjct                5074 ..........................................................  5133

CDS:collagen alpha-1  919   G  Q  K  G  E  R  G  E  P  G  G  G  G  F  F  G  S  S  L  P
Query                2821 GGACAGAAAGGCGAAAGGGGGGAGCCCGGGGGCGGCGGTTTCTTCGGCTCCAGCCTGCCC  2880
Sbjct                5134 ..........................................................  5193

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Query                2881 GGcccccccggccccccAGGCCCACGTGGCTACCCTGGGATTCCAGGTCCCAAGGGAGAG  2940
Sbjct                5194 ..........................................................  5253

CDS:collagen alpha-1  959   S  I  R  G  Q  P  G  P  P  G  P  Q  G  P  P  G  I  G  Y  E
Query                2941 AGCATCCGGGGCCAGCCCGGCCCACCTGGACCTCAGGGAccccccggcatcggctacgag  3000
Sbjct                5254 ..........................................................  5313

CDS:collagen alpha-1  979   G  R  Q  G  P  P  G  P  P  G  P  P  G  P  P  S  F  P  G  P
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Query                3001 gggcgccagggccctcccggccccccaggcccccc agggccccc TTCATTTCCTGGCCCT  3060
Sbjct                5314 ..........................................................  5373

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Query                3061 CACAGGCAGACTATCAGCGTTcccggccctccgggcccccctgggcccccctgggccccct  3120
Sbjct                5374 ..........................................................  5433

CDS:collagen alpha-1 1019   G  T  M  G  A  S  S  G  V  R  L  W  A  T  R  Q  A  M  L  G
Query                3121 GGAACCATGGGCGCCTCCTCAGGGGTGAGGCTCTGGGCTACACGCCAGGCCATGCTGGGC  3180
Sbjct                5434 ..........................................................  5493

CDS:collagen alpha-1 1039   Q  V  H  E  V  P  E  G  W  L  I  F  V  A  E  Q  E  E  L  Y
Query                3181 CAGGTGCACGAGGTTCCCGAGGGCTGGCTCATCTTCGTGGCCGAGCAGGAGGAGCTCTAC  3240
Sbjct                5494 ..........................................................  5553

CDS:collagen alpha-1 1059   V  R  V  Q  N  G  F  R  K  V  Q  L  E  A  R  T  P  L  P  R
Query                3241 GTCCGCGTGCAGAACGGGTTCCGGAAGGTCCAGCTGGAGGCCCGGACACCACTCCCACGA  3300
Sbjct                5554 ..........................................................  5613

CDS:collagen alpha-1 1079   G  T  D  N  E  V  A  A  L  Q  P  P  V  V  Q  L  H  D  S  N
Query                3301 GGGACGGACAATGAAGTGGCCGCCTTGCAGCCCCCCGTGGTGCAGCTGCACGACAGCAAC  3360
Sbjct                5614 ..........................................................  5673

CDS:collagen alpha-1 1099   P  Y  P  R  R  E  H  P  H  P  T  A  R  P  W  R  A  D  D  I
Query                3361 CCCTACCCGCGGCGGGAGCACCCCCACCCCACCGCGCGGCCCTGGCGGGCAGATGACATC  3420
Sbjct                5674 ..........................................................  5733

CDS:collagen alpha-1 1119   L  A  S  P  P  R  L  P  E  P  Q  P  Y  P  G  A  P  H  H  S
Query                3421 CTGgccagccccctcgcctgcccgagccccagccctaccccggagccccGCACCACAGC  3480
Sbjct                5734 ..........................................................  5793

CDS:collagen alpha-1 1139   S  Y  V  H  L  R  P  A  R  P  T  S  P  P  A  H  S  H  R  D
Query                3481 TCCTACGTGCACCTGCGGCCGGCGCGACCCACAAGCCCACCCGCCCACAGCCACCGCGAC  3540
Sbjct                5794 ..........................................................  5853

CDS:collagen alpha-1 1159   F  Q  P  V  L  H  L  V  A  L  N  S  P  L  S  G  G  M  R  G
Query                3541 TTCCAGCCGGTGCTCCACCTGGTTGCGCTCAACAGCCCCCTGTCAGGCGGCATGCGGGGC  3600
Sbjct                5854 ..........................................................  5913

CDS:collagen alpha-1 1179   I  R  G  A  D  F  Q  C  F  Q  Q  A  R  A  V  G  L  A  G  T
Query                3601 ATCCGCGGGGCCGACTTCCAGTGCTTCCAGCAGGCGCGGGCCGTGGGGCTGGCGGGCACC  3660
Sbjct                5914 ..........................................................  5973

CDS:collagen alpha-1 1199   F  R  A  F  L  S  S  R  L  Q  D  L  Y  S  I  V  R  R  A  D
Query                3661 TTCCGCGCCTTCCTGTCCTCGCGCCTGCAGGACCTGTACAGCATCGTGCGCCGTGCCGAC  3720
Sbjct                5974 ..........................................................  6033

CDS:collagen alpha-1 1219   R  A  A  V  P  I  V  N  L  K  D  E  L  L  F  P  S  W  E  A
Query                3721 CGCGCAGCCGTGCCCATCGTCAACCTCAAGGACGAGCTGCTGTTTCCCAGCTGGGAGGCT  3780
Sbjct                6034 ..........................................................  6093

CDS:collagen alpha-1 1239   L  F  S  G  S  E  G  P  L  K  P  G  A  R  I  F  S  F  D  G
Query                3781 CTGTTCTCAGGCTCTGAGGGTCCGCTGAAGCCCGGGGCACGCATCTTCTCCTTTGACGGC  3840
Sbjct                6094 ..........................................................  6153

CDS:collagen alpha-1 1259   K  D  V  L  R  H  P  T  W  P  Q  K  S  V  W  H  G  S  D  P
Query                3841 AAGGACGTCCTGAGGCACCCCACCTGGCCCCAGAAGAGCGTGTGGCATGGCTCGGACCCC  3900
Sbjct                6154 ..........................................................  6213
```

```
CDS:collagen alpha-1  1279   N  G  R  R  L  T  E  S  Y  C  E  T  W  R  T  E  A  P  S  A
Query                 3901   AACGGGCGCAGGCTGACCGAGAGCTACTGTGAGACGTGGCGGACGGAGGCTCCCTCGGCC  3960
Sbjct                 6214   .............................................................  6273

CDS:collagen alpha-1  1299   T  G  Q  A  S  S  L  L  G  G  R  L  L  G  Q  S  A  A  S  C
Query                 3961   ACGGGCCAGGCCTCCTCGCTGCTGGGGGGCAGGCTCCTGGGGCAGAGTGCCGCGAGCTGC  4020
Sbjct                 6274   .............................................................  6333

CDS:collagen alpha-1  1319   H  H  A  Y  I  V  L  C  I  E  N  S  F  M  T  A  S  K
Query                 4021   CATCACGCCTACATCGTGCTCTGCATTGAGAACAGCTTCATGACTGCCTCCAAGTAGCCA  4080
Sbjct                 6334   .............................................................  6393

Query                 4081   CCGCCTGGATGCGGATGGCCGGAGAGGACCGGCGGCTCGGAGGAAGCCCCCACCGTGGGC  4140
Sbjct                 6394   .............................................................  6453

Query                 4141   AGGGAGCGGCCGGCCAGCCCCTGGCCCCAGGACCTGGCTGCCATACTTTCCTGTATAGTT  4200
Sbjct                 6454   .............................................................  6513

Query                 4201   CACGTTTCATGTAATCCTCAAGAAATAAAAGGAAGCCAAAGAGTGTAttttttttAAAAGT  4260
Sbjct                 6514   .............................................................  6573

Query                 4261   TTAAAA  4266
Sbjct                 6574   ......  6579
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