5-16

NRCD Human Full-Length cDNA Clone

Gene Engineering Division
RIKEN BioResource Research Center

RIKEN_Clone_ID : ARi28F07
Vector : pGCAP10

Lot# : 7675_B3Bd

Gene	USP7	
RefSeq_mRNA	NM_003470.3	5831 bp

● Plasmid DNA purification

Date : 23.03.14 Culture : LB (100 ug/ml Ampicillin) 5 ml -> at 37 deg C O/N

Date : 23.03.15 Purification : QIAGEN Miniprep kit -> dH_2O 100 ul

● Digestion by restriction enzyme/Concentrarion calibration

Date : 23.03.15

DNA concentration (O.D.): 137 ng/ul

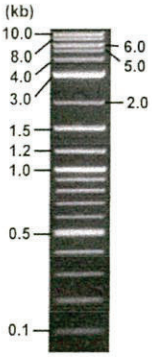
DNA	0.7 ul
Enzyme (BamHI)	1 ul
Buffer H	1 ul
dH_2O	7.3 ul
Total	10 ul

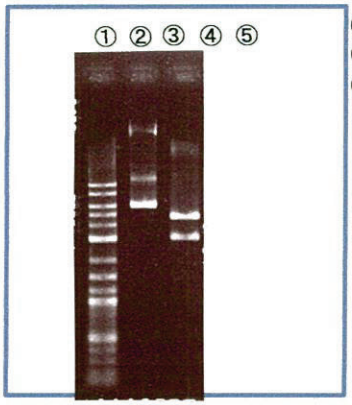
< Size of fragment expected from this clone >

BamHI 3.1kb (vector), 4.8 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 : 2026/06/19

full sequence : ARi28F07hts01.seq

● Adjust plasmid DNA solution to 25 ng/ul

Date : 2026/07/23

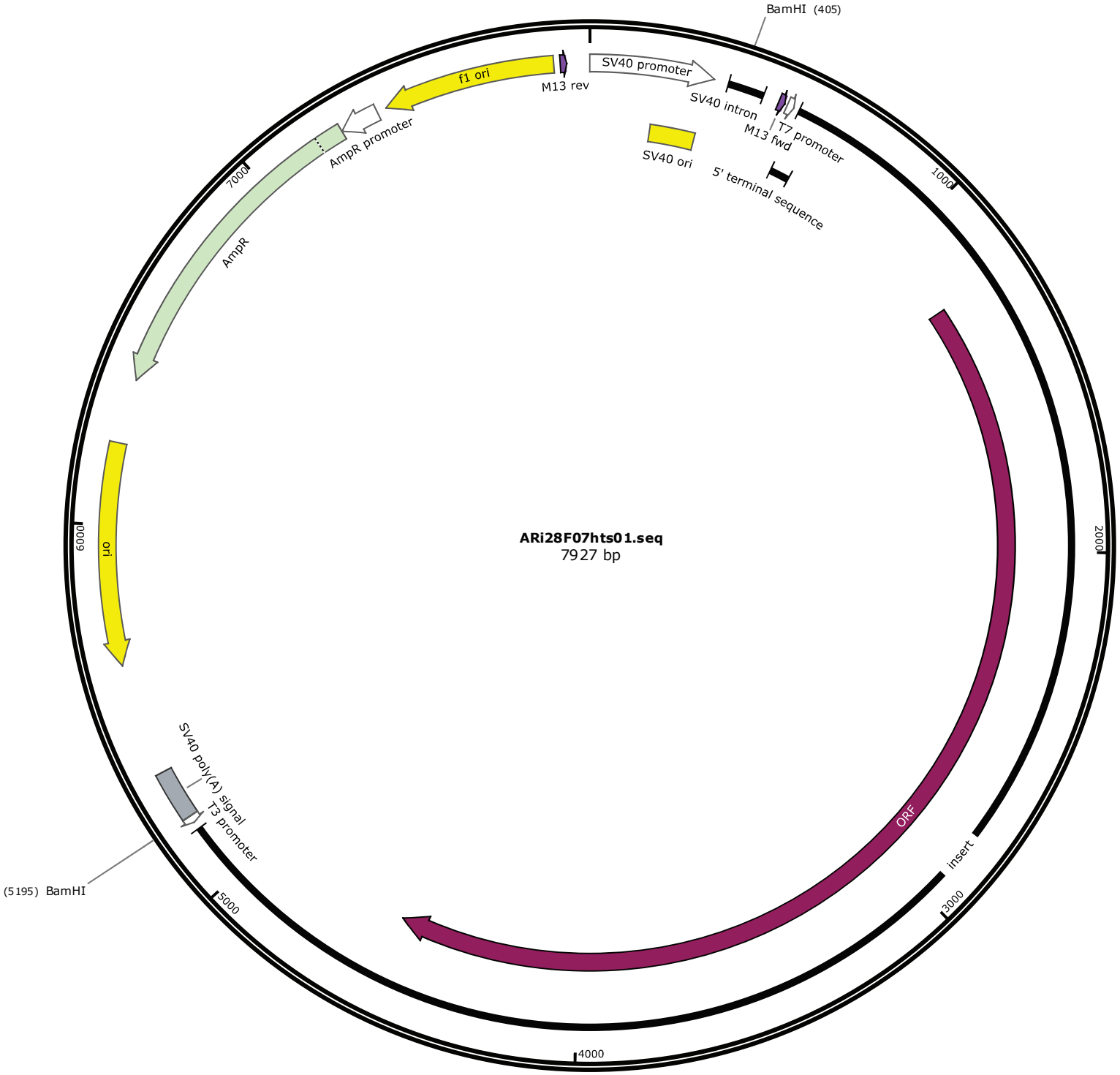
DNA (137 ng/ul)	70	ul
10x TE	38	ul
dH_2O	275	ul
Total	384	ul

● Shipping

☑ Conc. : 25 ng/μl, Volume : 40 μl

☐ Conc. : __ ng/μl, Volume : __ μl

APPROVED BY : 検 '26.07.23 笹沼


BamHI (405)
SV40 promoter
f1 ori
M13 rev
SV40 intron
M13 fwd
T7 promoter
SV40 ori
5' terminal sequence
AmpR promoter
AmpR
1000
2000
3000
4000
5000
6000
7000
ori
ARi28F07hts01.seq
7927 bp
ORF
insert
SV40 poly(A) signal
T3 promoter
(5195) BamHI

BLAST Results

Questions/comments

Blast 2 sequences

Job title: NM_004724:Homo sapiens zw10 kinetochore protein...

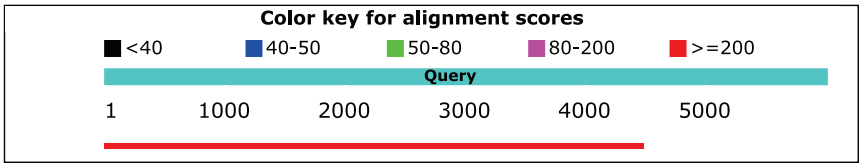
RID 39TDGHWZ114 (Expires on 06-20 14:46 pm)

Query ID	NM_003470.3	**Subject ID**	lcl|Query_6979939
Description	Homo sapiens ubiquitin specific peptidase 7 (USP7), transcript variant 1, mRNA	**Description**	None See details
Molecule type	nucleic acid	**Molecule type**	dna
Query Length	5831	**Subject Length**	7927
		Program	BLASTN 2.17.0+

ARi28F07hts01.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	8161	8161	76%	0.0	99.86%	Query_6979939

Alignments

Sequence ID: Query_6979939 Length: 7927 Number of Matches: 1
Range 1: 618 to 5056

Score	Expect	Identities	Gaps	Strand	Frame
8161 bits(4419)	0.0()	4434/4440(99%)	5/4440(0%)	Plus/Plus	

Features:

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Query  1    GACATTTCACGCCGCCGCCATTTTGAGAGCGAGCCGAGCCGAGCTGCCGGGCGCCGCGTC  60
Sbjct  618  ............................................................  677

Query  61   CGCTGCCGGAGCCCCGACGACGACGCCGAGGAGGCGGAggccgcggctctcggaacgcgg  120
Sbjct  678  ............................................................  737

Query  121  ccggcccgtcgcccgcccgctccgccgctcccgccggccccagggcccgcaggcccgccg  180
Sbjct  738  ............................................................  797

Query  181  cggccggccaggcctcccgtccgccgcgcccggcccgaggcggggctgactccgcggccc  240
Sbjct  798  ............................................................  857

Query  241  ccgaccggccgccctccgcccccqgccqgcccgcggccccgcagccccggccccggcccc  300
Sbjct  858  ......................-...C.....................................  916

Query  301  ggcggcgggaggcgggcccc---gcggcggcggcggcggccgcagcgagcgacgagg  357
Sbjct  917  ..................GCG.....................................  976

Query  358  ccgcccggcccggcccgccggccgcccgcccgcctcggcgccgAGATTGGGCGAATCGCG  417
Sbjct  977  ............................................................  1036
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Query                418   AGCAAGTACGTGCGCGTCT-CCCTgccgccgccgccgcccgccgcgggccgccccggggc  476
Sbjct                1037  ...................C..................................  1096

Query                477   cgccgtcgccgacgacgcgcgggaggaggaggaggaggccgccccgccgccgccgccgcc  536
Sbjct                1097  ............................................................  1156

Query                537   gccgccgccccggctcgccgccgcccgcccgccgggctcgcagccccggccccggccgc  596
Sbjct                1157  ............................................................  1216

CDS:ubiquitin C-term 1                                 M  N  H  Q  Q  Q  Q  Q  Q  K  A
Query                597   aggcgaggcccaggccgcggccgACATGAACCACcagcagcagcagcagcagcagaaagc  656
Sbjct                1217  ............................................................  1276

CDS:ubiquitin C-term 13      G  E  Q  Q  L  S  E  P  E  D  M  E  M  E  A  G  D  T  D  D
Query                657   gggcgagcagcagttgagcgagcCCGAGGACATGGAGATGGAAGCGGGAGATACAGATGA  716
Sbjct                1277  ............................................................  1336

CDS:ubiquitin C-term 33      P  P  R  I  T  Q  N  P  V  I  N  G  N  V  A  L  S  D  G  H
Query                717   CCCACCAAGAATTACTCAGAACCCTGTGATCAATGGGAATGTGGCCCTGAGTGATGGACA  776
Sbjct                1337  ............................................................  1396

CDS:ubiquitin C-term 53      N  T  A  E  E  D  M  E  D  D  T  S  W  R  S  E  A  T  F  Q
Query                777   CAACACCGCGGAGGAGGACATGGAGGATGACACCAGTTGGCGCTCCGAGGCAACCTTTCA  836
Sbjct                1397  ............................................................  1456

CDS:ubiquitin C-term 73      F  T  V  E  R  F  S  R  L  S  E  S  V  L  S  P  P  C  F  V
Query                837   GTTCACTGTGGAGCGCTTCAGCAGACTGAGTGAGTCGGTCCTTAGCCCTCCGTGTTTTGT  896
Sbjct                1457  ............................................................  1516

CDS:ubiquitin C-term 93      R  N  L  P  W  K  I  M  V  M  P  R  F  Y  P  D  R  P  H  Q
Query                897   GCGAAATCTGCCATGGAAGATTATGGTGATGCCACGCTTTTATCCAGACAGACCACACCA  956
Sbjct                1517  ............................................................  1576

CDS:ubiquitin C-term 113     K  S  V  G  F  F  L  Q  C  N  A  E  S  D  S  T  S  W  S  C
Query                957   AAAAAGCGTAGGATTCTTTCTCCAGTGCAATGCTGAATCTGATTCCACGTCATGGTCTTG  1016
Sbjct                1577  ............................................................  1636

CDS:ubiquitin C-term 133     H  A  Q  A  V  L  K  I  I  N  Y  R  D  D  E  K  S  F  S  R
Query                1017  CCATGCACAAGCAGTGCTGAAGATAATAAATTACAGAGATGATGAAAAGTCGTTCAGTCG  1076
Sbjct                1637  ............................................................  1696

CDS:ubiquitin C-term 153     R  I  S  H  L  F  F  H  K  E  N  D  W  G  F  S  N  F  M  A
Query                1077  TCGTATTAGTCATTTGTTCTTCCATAAAGAAAATGATTGGGGATTTTCCAATTTTATGGC  1136
Sbjct                1697  ............................................................  1756

CDS:ubiquitin C-term 173     W  S  E  V  T  D  P  E  K  G  F  I  D  D  D  K  V  T  F  E
Query                1137  CTGGAGTGAAGTGACCGATCCTGAGAAAGGATTTATAGATGATGACAAAGTTACCTTTGA  1196
Sbjct                1757  ............................................................  1816

CDS:ubiquitin C-term 193     V  F  V  Q  A  D  A  P  H  G  V  A  W  D  S  K  K  H  T  G
Query                1197  AGTCTTTGTACAGGCGGATGCTCCCCATGGAGTTGCGTGGGATTCAAAGAAGCACACAGG  1256
Sbjct                1817  ............................................................  1876

CDS:ubiquitin C-term 213     Y  V  G  L  K  N  Q  G  A  T  C  Y  M  N  S  L  L  Q  T  L
Query                1257  CTACGTCGGCTTAAAGAATCAGGGAGCGACTTGTTACATGAACAGCCTGCTACAGACGTT  1316
Sbjct                1877  ............................................................  1936

CDS:ubiquitin C-term 233     F  F  T  N  Q  L  R  K  A  V  Y  M  M  P  T  E  G  D  D  S
Query                1317  ATTTTTCACGAATCAGCTACGAAAGGCTGTGTACATGATGCCAACCGAGGGGGATGATTC  1376
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Sbjct                1937  ............................................................  1996

CDS:ubiquitin C-term 253     S  K  S  V  P  L  A  L  Q  R  V  F  Y  E  L  Q  H  S  D  K
Query                1377  GTCTAAAAGCGTCCCTTTAGCATTACAAAGAGTGTTCTATGAATTACAGCATAGTGATAA  1436
Sbjct                1997  ............................................................  2056

CDS:ubiquitin C-term 273     P  V  G  T  K  K  L  T  K  S  F  G  W  E  T  L  D  S  F  M
Query                1437  ACCTGTAGGAACAAAAAAGTTAACAAAGTCATTTGGGTGGGAAACTTTAGATAGCTTCAT  1496
Sbjct                2057  ............................................................  2116

CDS:ubiquitin C-term 293     Q  H  D  V  Q  E  L  C  R  V  L  L  D  N  V  E  N  K  M  K
Query                1497  GCAACATGATGTTCAGGAGCTTTGTCGAGTGTTGCTCGATAATGTGGAAAATAAGATGAA  1556
Sbjct                2117  ............................................................  2176

CDS:ubiquitin C-term 313     G  T  C  V  E  G  T  I  P  K  L  F  R  G  K  M  V  S  Y  I
Query                1557  AGGCACCTGTGTAGAGGGCACCATACCCAAATTATTCCGCGGCAAAATGGTGTCCTATAT  1616
Sbjct                2177  ............................................................  2236

CDS:ubiquitin C-term 333     Q  C  K  E  V  D  Y  R  S  D  R  R  E  D  Y  Y  D  I  Q  L
Query                1617  CCAGTGTAAAGAAGTAGACTATCGGTCTGATAGAAGAGAAGATTATTATGATATCCAGCT  1676
Sbjct                2237  ............................................................  2296

CDS:ubiquitin C-term 353     S  I  K  G  K  K  N  I  F  E  S  F  V  D  Y  V  A  V  E  Q
Query                1677  AAGTATCAAAGGAAAGAAAAATATATTTGAATCATTTGTGGATTATGTGGCAGTAGAACA  1736
Sbjct                2297  ............................................................  2356

CDS:ubiquitin C-term 373     L  D  G  D  N  K  Y  D  A  G  E  H  G  L  Q  E  A  E  K  G
Query                1737  GCTCGATGGGGACAATAAATACGACGCTGGGGAACATGGCTTACAGGAAGCAGAGAAAGG  1796
Sbjct                2357  ............................................................  2416

CDS:ubiquitin C-term 393     V  K  F  L  T  L  P  P  V  L  H  L  Q  L  M  R  F  M  Y  D
Query                1797  TGTGAAATTCCTAACATTGCCACCAGTGTTACATCTACAACTGATGAGATTTATGTATGA  1856
Sbjct                2417  ............................................................  2476

CDS:ubiquitin C-term 413     P  Q  T  D  Q  N  I  K  I  N  D  R  F  E  F  P  E  Q  L  P
Query                1857  CCCTCAGACGGACCAAAATATCAAGATCAATGATAGGTTTGAATTCCCAGAGCAGTTACC  1916
Sbjct                2477  ............................................................  2536

CDS:ubiquitin C-term 433     L  D  E  F  L  Q  K  T  D  P  K  D  P  A  N  Y  I  L  H  A
Query                1917  ACTTGATGAATTTTTGCAAAAAACAGATCCTAAGGACCCTGCAAATTATATTCTTCATGC  1976
Sbjct                2537  ............................................................  2596

CDS:ubiquitin C-term 453     V  L  V  H  S  G  D  N  H  G  G  H  Y  V  V  Y  L  N  P  K
Query                1977  AGTCCTGGTTCATAGTGGAGATAATCATGGTGGACATTATGTGGTTTATCTAAACCCCAA  2036
Sbjct                2597  ............................................................  2656

CDS:ubiquitin C-term 473     G  D  G  K  W  C  K  F  D  D  D  V  V  S  R  C  T  K  E  E
Query                2037  AGGGGATGGCAAATGGTGTAAATTTGATGACGACGTGGTGTCAAGGTGTACTAAAGAGGA  2096
Sbjct                2657  ............................................................  2716

CDS:ubiquitin C-term 493     A  I  E  H  N  Y  G  G  H  D  D  D  L  S  V  R  H  C  T  N
Query                2097  AGCAATTGAGCACAATTATGGGGGTCACGATGACGACCTGTCTGTTCGACACTGCACTAA  2156
Sbjct                2717  ............................................................  2776

CDS:ubiquitin C-term 513     A  Y  M  L  V  Y  I  R  E  S  K  L  S  E  V  L  Q  A  V  T
Query                2157  TGCTTACATGTTAGTCTACATCAGGGAATCAAAACTGAGTGAAGTTTTACAGGCGGTCAC  2216
Sbjct                2777  ............................................................  2836

CDS:ubiquitin C-term 533     D  H  D  I  P  Q  Q  L  V  E  R  L  Q  E  E  K  R  I  E  A
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Query                2217  CGACCATGATATTCCTCAGCAGTTGGTGGAGCGATTACAAGAAGAGAAAAGGATCGAGGC  2276
Sbjct                2837  ............................................................  2896

CDS:ubiquitin C-term  553    Q  K  R  K  E  R  Q  E  A  H  L  Y  M  Q  V  Q  I  V  A  E
Query                2277  TCAGAAGCGGAAGGAGCGGCAGGAAGCCCATCTCTATATGCAAGTGCAGATAGTCGCAGA  2336
Sbjct                2897  ............................................................  2956

CDS:ubiquitin C-term  573    D  Q  F  C  G  H  Q  G  N  D  M  Y  D  E  E  K  V  K  Y  T
Query                2337  GGACCAGTTTTGTGGCCACCAAGGGAATGACATGTACGATGAAGAAAAAGTGAAATACAC  2396
Sbjct                2957  ............................................................  3016

CDS:ubiquitin C-term  593    V  F  K  V  L  K  N  S  S  L  A  E  F  V  Q  S  L  S  Q  T
Query                2397  TGTGTTCAAAGTATTGAAGAACTCCTCGCTTGCTGAGTTTGTTCAGAGCCTCTCTCAGAC  2456
Sbjct                3017  ............................................................  3076

CDS:ubiquitin C-term  613    M  G  F  P  Q  D  Q  I  R  L  W  P  M  Q  A  R  S  N  G  T
Query                2457  CATGGGATTTCCACAAGATCAAATTCGATTGTGGCCCATGCAAGCAAGGAGTAATGGAAC  2516
Sbjct                3077  ............................................................  3136

CDS:ubiquitin C-term  633    K  R  P  A  M  L  D  N  E  A  D  G  N  K  T  M  I  E  L  S
Query                2517  AAAACGACCAGCAATGTTAGATAATGAAGCCGACGGCAATAAAACAATGATTGAGCTCAG  2576
Sbjct                3137  ............................................................  3196

CDS:ubiquitin C-term  653    D  N  E  N  P  W  T  I  F  L  E  T  V  D  P  E  L  A  A  S
Query                2577  TGATAATGAAAACCCTTGGACAATATTCCTGGAAACAGTTGATCCCGAGCTGGCTGCTAG  2636
Sbjct                3197  ............................................................  3256

CDS:ubiquitin C-term  673    G  A  T  L  P  K  F  D  K  D  H  D  V  M  L  F  L  K  M  Y
Query                2637  TGGAGCGACCTTACCCAAGTTTGATAAAGATCATGATGTAATGTTATTTTTGAAGATGTA  2696
Sbjct                3257  ............................................................  3316

CDS:ubiquitin C-term  693    D  P  K  T  R  S  L  N  Y  C  G  H  I  Y  T  P  I  S  C  K
Query                2697  TGATCCCAAAACGCGGAGCTTGAATTACTGTGGGCATATCTACACACCAATATCCTGTAA  2756
Sbjct                3317  ............................................................  3376

CDS:ubiquitin C-term  713    I  R  D  L  L  P  V  M  C  D  R  A  G  F  I  Q  D  T  S  L
Query                2757  AATACGTGACTTGCTCCCAGTTATGTGTGACAGAGCAGGATTTATTCAAGATACTAGCCT  2816
Sbjct                3377  ............................................................  3436

CDS:ubiquitin C-term  733    I  L  Y  E  E  V  K  P  N  L  T  E  R  I  Q  D  Y  D  V  S
Query                2817  TATCCTCTATGAGGAAGTTAAACCGAATTTAACAGAGAGAATTCAGGACTATGACGTGTC  2876
Sbjct                3437  ............................................................  3496

CDS:ubiquitin C-term  753    L  D  K  A  L  D  E  L  M  D  G  D  I  I  V  F  Q  K  D  D
Query                2877  TCTTGATAAAGCCCTTGATGAACTAATGGATGGTGACATCATAGTATTTCAGAAGGATGA  2936
Sbjct                3497  ............................................................  3556

CDS:ubiquitin C-term  773    P  E  N  D  N  S  E  L  P  T  A  K  E  Y  F  R  D  L  Y  H
Query                2937  CCCTGAAAATGATAACAGTGAATTACCCACCGCAAAGGAGTATTTCCGAGATCTCTACCA  2996
Sbjct                3557  ............................................................  3616

CDS:ubiquitin C-term  793    R  V  D  V  I  F  C  D  K  T  I  P  N  D  P  G  F  V  V  T
Query                2997  CCGCGTTGATGTCATTTTCTGTGATAAAACAATCCCTAATGATCCTGGATTTGTGGTTAC  3056
Sbjct                3617  ............................................................  3676

CDS:ubiquitin C-term  813    L  S  N  R  M  N  Y  F  Q  V  A  K  T  V  A  Q  R  L  N  T
Query                3057  GTTATCAAATAGAATGAATTATTTTCAGGTTGCAAAGACAGTTGCACAGAGGCTCAACAC  3116
Sbjct                3677  ............................................................  3736
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CDS:ubiquitin C-term  833    D  P  M  L  L  Q  F  F  K  S  Q  G  Y  R  D  G  P  G  N  P
Query                3117  AGATCCAATGTTGCTGCAGTTTTTCAAGTCTCAAGGTTATAGGGATGGCCCAGGTAATCC  3176
Sbjct                3737  ............................................................  3796

CDS:ubiquitin C-term  853    L  R  H  N  Y  E  G  T  L  R  D  L  L  Q  F  F  K  P  R  Q
Query                3177  TCTTAGACATAATTATGAAGGTACTTTAAGAGATCTTCTACAGTTCTTCAAGCCTAGACA  3236
Sbjct                3797  ............................................................  3856

CDS:ubiquitin C-term  873    P  K  K  L  Y  Y  Q  Q  L  K  M  K  I  T  D  F  E  N  R  R
Query                3237  ACCTAAGAAACTTTACTATCAGCAGCTTAAGATGAAAATCACAGACTTTGAGAACAGGCG  3296
Sbjct                3857  ............................................................  3916

CDS:ubiquitin C-term  893    S  F  K  C  I  W  L  N  S  Q  F  R  E  E  E  I  T  L  Y  P
Query                3297  AAGTTTTAAATGTATATGGTTAAACAGCCAATTTAGGGAAGAGGAAATAACACTATATCC  3356
Sbjct                3917  ............................................................  3976

CDS:ubiquitin C-term  913    D  K  H  G  C  V  R  D  L  L  E  E  C  K  K  A  V  E  L  G
Query                3357  AGACAAGCATGGGTGTGTCCGGGACCTGTTAGAAGAATGTAAAAAGGCCGTGGAGCTTGG  3416
Sbjct                3977  ............................................................  4036

CDS:ubiquitin C-term  933    E  K  A  S  G  K  L  R  L  L  E  I  V  S  Y  K  I  I  G  V
Query                3417  GGAGAAAGCATCAGGGAAACTTAGGCTGCTAGAAATTGTAAGCTACAAAATCATTGGTGT  3476
Sbjct                4037  ............................................................  4096

CDS:ubiquitin C-term  953    H  Q  E  D  E  L  L  E  C  L  S  P  A  T  S  R  T  F  R  I
Query                3477  TCATCAAGAAGATGAACTATTAGAATGTTTATCTCCTGCAACGAGCCGGACGTTTCGAAT  3536
Sbjct                4097  ............................................................  4156

CDS:ubiquitin C-term  973    E  E  I  P  L  D  Q  V  D  I  D  K  E  N  E  M  L  V  T  V
Query                3537  AGAGGAAATCCCTTTGGACCAGGTGGACATAGACAAAGAGAATGAGATGCTTGTCACAGT  3596
Sbjct                4157  ............................................................  4216

CDS:ubiquitin C-term  993    A  H  F  H  K  E  V  F  G  T  F  G  I  P  F  L  L  R  I  H
Query                3597  GGCGCATTTCCACAAAGAGGTCTTCGGAACGTTCGGAATCCCGTTTTTGCTGAGGATACA  3656
Sbjct                4217  ............................................................  4276

CDS:ubiquitin C-term  1013   Q  G  E  H  F  R  E  V  M  K  R  I  Q  S  L  L  D  I  Q  E
Query                3657  CCAGGGCGAGCATTTTCGAGAAGTGATGAAGCGAATCCAGAGCCTGCTGGACATCCAGGA  3716
Sbjct                4277  ............................................................  4336

CDS:ubiquitin C-term  1033   K  E  F  E  K  F  K  F  A  I  V  M  M  G  R  H  Q  Y  I  N
Query                3717  GAAGGAGTTTGAGAAGTTTAAATTTGCAATTGTAATGATGGGCCGACACCAGTACATAAA  3776
Sbjct                4337  ............................................................  4396

CDS:ubiquitin C-term  1053   E  D  E  Y  E  V  N  L  K  D  F  E  P  Q  P  G  N  M  S  H
Query                3777  TGAAGACGAGTATGAAGTAAATTTGAAAGACTTTGAGCCACAGCCCGGTAATATGTCTCA  3836
Sbjct                4397  ............................................................  4456

CDS:ubiquitin C-term  1073   P  R  P  W  L  G  L  D  H  F  N  K  A  P  K  R  S  R  Y  T
Query                3837  TCCTCGGCCTTGGCTAGGGCTCGACCACTTCAACAAAGCCCCAAAGAGGAGTCGCTACAC  3896
Sbjct                4457  ............................................................  4516

CDS:ubiquitin C-term  1093   Y  L  E  K  A  I  K  I  H  N
Query                3897  TTACCTTGAAAAGGCCATTAAAATCCATAACTGATTTCCAAGCTGGTGTGTTCAAGGCGA  3956
Sbjct                4517  ............................................................  4576

Query                3957  GGACGGTGTGTGGGTGGCCCCTTAACAGCCTAGAACTTTGGTGCACGTGCCCTCTAGCCG  4016
Sbjct                4577  ............................................................  4636
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Query  4017  AAGTCTTCAGCAAGAGGATTCGCTGCTGGTGTTAATTTTATTTTATTGAGGCTGTTCAGT  4076
Sbjct  4637  ............................................................  4696

Query  4077  TTGGCTTCTCTGTATCTATTGACTGCCCTTTTTGAGCAAAATGAAGATGTTTTTATAAAG  4136
Sbjct  4697  ............................................................  4756

Query  4137  CTTGGATGCCAATGAGAGTTATTTTATGGTAACCACAGTGCAAGGCAACTGTCAGCGCAA  4196
Sbjct  4757  ............................................................  4816

Query  4197  TGGGGGAGAAGAGGTTAGTGGATCGGGGGTCCCTGGCTCAAGGTCTCTGGGCTGTCCCTA  4256
Sbjct  4817  ............................................................  4876

Query  4257  GTGGGCACGAGTGGCTCGGCTGCCTTCCTGGGGTCCCGTGCACCAGCCCTGCAGCTAGCA  4316
Sbjct  4877  ............................................................  4936

Query  4317  AGTCTTGTGTTTAGGCTCGTCTGACCTATTTCCTTCAGTTATACTTTCAATGACCTTTTG  4376
Sbjct  4937  ............................................................  4996

Query  4377  TGCATCTGTTAAGGCAAAACAGAGAAACTCACAACCTAATAAATAGCGCTCTTCCCTTCA  4436
Sbjct  4997  ............................................................  5056
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