

LOCUS RDB xxxx pETHFF 7477 bp DNA circular 10-MAR-2009

BglIII T7 promoter
1 GAGATCTCGA TCCC GCGAAA TTAATACGAC TCACTATAGG GGAATTGTGA GCGGATAACA

XbaI NcoI
61 ATTCCCCTCT AGAATAATT TTGTTAACT TTAAGAAGGA GATATAccat gggcagcagc
M G S S

NdeI
121 catcatcatc atcatcacag cagcggcctg gtgccgcgcg gcagcCATAT GGATTATAAG
H H H H H H S S G L V P R G S H M D Y K

NcoI EcoRV
181 GATGATGACG ATAAACCCAT GACTACAAG GACGACGATG ACAAAGATAT CACAAGTTTG
D D D D K P M D Y K D D D D K D I T S L

241 TACAAAAAAG CTGAACGAGA AACGTAAA-- ccdB unit --ACGTTTCT CGTTCAGCTT
Y K K A E R E T *

(tacaaaaaag caggct---- gene of interest -accagctt)
(y k k a e)

EcoRV
1921 TCTTGTAACA AGTGGTGATA TCATGAGATC CGGCTGCTAA CAAAGCCCGA AAGGAAGCTG
1981 AGTTGGCTGC TGCCACCGCT GAGCAATAAC TAGCATAACC CCTTGGGGCC TCTAAACGGG

T7 terminator EcoRV
2041 TCTTGAGGGG TTTTTTGCTG AAAGGAGGAA CTATATCCGG ATATCCCGCA AGAGGCCCGG
2101 CAGTACCGGC ATAACCAAGC CTATGCCTAC AGCATCCAGG GTGACGGTGC CGAGGATGAC
2161 GATGAGCGCA TTGTTAGATT TCATACACGG TGCCTGACTG CGTTAGCAAT TTAAGTGTGA

Hind3 ClaI EcoRI
2221 TAAACTACCG CATTAAAGCT TATCGATGAT AAGCTGTCAA ACATGAGAAT TCTTGAAGAC

BamHI	: GGATCC	(2)	428	1131		
BglIII	: AGATCT	(1)	2			
ClaI	: ATCGAT	(1)	2243			
EcoRI	: GAATTC	(2)	678	2267		
EcoRV	: GATATC	(4)	228	1939	2082	6311
HindIII	: AAGCTT	(1)	2236			
NcoI	: CCATGG	(3)	107	197	979	
NdeI	: CATATG	(1)	167			
NotI	: GCGGCCGC	(1)	358			
PstI	: CTGCAG	(2)	1804	3023		
Sall	: GTCGAC	(1)	1806			
SmaI	: CCCGGG	(1)	1549			
XbaI	: TCTAGA	(1)	68			

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SOURCE

ORGANISM

FEATURES Location/Qualifiers

misc_feature 2..7
/note="BglIII site"
misc_feature 32..48
/note="T7 promoter"
misc_feature 49
/note="T7 transcription start"
misc_feature 107..112
/note="NcoI site"
misc_feature 121..138
/note="His-Tag coding sequence"
misc_feature 148..165
/note="thrombin sequence"
misc_feature 166..171
/note="NdeI site"
misc_feature 172..225
/note="FLAG epitopes (2)"
misc_feature 229..1939
/ApEinfo_label=ccdB(rfA) cassette
misc_feature 232..256
/note="attR1"
misc_feature complement(1912..1936)
/note="attR2"
misc_feature 2011..2058
/note="T7 terminator"

BASE COUNT

ORIGIN

1 GAGATCTCGA TCCCGCGAAA TTAATACGAC TCACTATAGG GGAATTGTGA GCGGATAACA
61 ATTCCCCTCT AGAAATAATT TTGTTAACT TTAAGAAGGA GATATAccat gggcagcagc
121 catcatcatc atcatcacag cagcggcctg gtgccgcgcg gcagcCATAT GGATTATAAG
181 GATGATGACG ATAAACCCAT GGACTACAAG GACGACGATG ACAAAGATAT CACAAGTTTG
241 TACAAAAAAG CTGAACGAGA AACGTAAAT GATATAAATA TCAATATATT AAATTAGATT
301 TTGCATAAAA AACAGACTAC ATAATACTGT AAAACACAAC ATATCCAGTC ACTATGGCGG
361 CCGCATTAGG CACCCCAGGC TTTACACTTT ATGCTTCCGG CTCGTATAAT GTGTGGATTT
421 TGAGTTAGGA TCCGGCGAGA TTTTCAGGAG CTAAGGAAGC TAAATGGAG AAAAAATCA
481 CTGGATATAC CACCGTTGAT ATATCCCAAT GGCATCGTAA AGAACATTTT GAGGCATTTT

541 AGTCAGTTGC TCAATGTACC TATAACCAGA CCGTTCAGCT GGATATTACG GCCTTTTTTAA
601 AGACCGTAAA GAAAAATAAG CACAAGTTTT ATCCGGCCTT TATTCACATT CTTGCCCGCC
661 TGATGAATGC TCATCCGGAA TTCCGTATGG CAATGAAAGA CGGTGAGCTG GTGATATGGG
721 ATAGTGTTCA CCCTTGTTAC ACCGTTTTCC ATGAGCAAAC TGAAACGTTT TCATCGCTCT
781 GGAGTGAATA CCACGACGAT TTCCGGCAGT TTCTACACAT ATATTCGCAA GATGTGGCGT
841 GTTACGGTGA AAACCTGGCC TATTTCCCTA AAGGGTTTAT TGAGAATATG TTTTTCGTCT
901 CAGCCAATCC CTGGGTGAGT TTCACCAGTT TTGATTTAAA CGTGGCCAAT ATGGACAACT
961 TCTTCGCCCC CGTTTTCCACC ATGGGCAAAT ATTATACGCA AGGCGACAAG GTGCTGATGC
1021 CGCTGGCGAT TCAGGTTTCAT CATGCCGTCT GTGATGGCTT CCATGTCGGC AGAATGCTTA
1081 ATGAATTACA ACAGTACTGC GATGAGTGGC AGGGCGGGGC GTAAACGCGT GGATCCGGCT
1141 TACTAAAAGC CAGATAACAG TATGCGTATT TGCGCGCTGA TTTTTGCGGT ATAAGAATAT
1201 ATACTGATAT GTATACCCGA AGTATGTCAA AAAGAGGTGT GCTATGAAGC AGCGTATTAC
1261 AGTGACAGTT GACAGCGACA GCTATCAGTT GCTCAAGGCA TATATGATGT CAATATCTCC
1321 GGTCTGGTAA GCACAACCAT GCAGAATGAA GCCCGTCGTC TGCGTGCCGA ACGCTGGAAA
1381 GCGGAAAATC AGGAAGGGAT GGCTGAGGTC GCCCGGTTTA TTGAAATGAA CGGCTCTTTT
1441 GCTGACGAGA ACAGGGACTG GTGAAATGCA GTTTAAGGTT TACACCTATA AAAGAGAGAG
1501 CCGTTATCGT CTGTTTGTGG ATGTACAGAG TGATATTATT GACACGCCCG GGCGACGGAT
1561 GGTGATCCCC CTGGCCAGTG CACGTCTGCT GTCAGATAAA GTCTCCCGTG AACTTTACCC
1621 GGTGGTGCAT ATCGGGGATG AAAGCTGGCG CATGATGACC ACCGATATGG CCAGTGTGCC
1681 GGTCTCCGTT ATCGGGGAAG AAGTGGCTGA TCTCAGCCAC CGCGAAAATG ACATCAAAAA
1741 CGCCATTAAC CTGATGTTCT GGGGAATATA AATGTCAGGC TCCCTTATAC ACAGCCAGTC
1801 TGCAGGTCGA CCATAGTGAC TGGATATGTT GTGTTTTACA GTATTATGTA GTCTGTTTTT
1861 TATGCAAAAT CTAATTTAAT ATATTGATAT TTATATCATT TTACGTTTCT CGTTCAGCTT
1921 TCTTGATACAA AGTGGTGATA TCATGAGATC CGGCTGCTAA CAAAGCCCGA AAGGAAGCTG
1981 AGTTGGCTGC TGCCACCGCT GAGCAATAAC TAGCATAACC CCTTGGGGCC TCTAAACGGG
2041 TCTTGAGGGG TTTTTTGCTG AAAGGAGGAA CTATATCCGG ATATCCCGCA AGAGGCCCGG
2101 CAGTACCGGC ATAACCAAGC CTATGCCTAC AGCATCCAGG GTGACGGTGC CGAGGATGAC
2161 GATGAGCGCA TTGTTAGATT TCATACACGG TGCCTGACTG CGTTAGCAAT TTAAGTGTGA
2221 TAAACTACCG CATTAAAGCT TATCGATGAT AAGCTGTCAA ACATGAGAAT TCTTGAAGAC
2281 GAAAGGGCCT CGTGATACGC CTATTTTTAT AGGTTAATGT CATGATAATA ATGTTTTCTT
2341 AGACGTCAGG TGGCACTTTT CGGGGAAATG TGCGCGGAAC CCCTATTTGT TTATTTTTCT
2401 AAATACATTC AAATATGTAT CCGCTCATGA GACAATAACC CTGATAAATG CTTCAATAAT
2461 ATTGAAAAAG GAAGAGTATG AGTATTCAAC ATTTCCGTGT CGCCCTTATT CCCTTTTTTG
2521 CGGCATTTTG CCTTCCTGTT TTTGCTCACC CAGAAACGCT GGTGAAAGTA AAAGATGCTG
2581 AAGATCAGTT GGGTGCACGA GTGGGTTACA TCGAACTGGA TCTCAACAGC GGTAAGATCC
2641 TTGAGAGTTT TCGCCCCGAA GAACGTTTTT CAATGATGAG CACTTTTTAA GTTCTGCTAT
2701 GTGGCGCGGT ATTATCCCGT GTTGACGCCG GGCAAGAGCA ACTCGGTCGC CGCATAACT
2761 ATTCTCAGAA TGACTTGGTT GAGTACTCAC CAGTCACAGA AAAGCATCTT ACGGATGGCA
2821 TGACAGTAAG AGAATTATGC AGTGCTGCCA TAACCATGAG TGATAAAGT GCGGCCAACT

2881 TACTTCTGAC AACGATCGGA GGACCGAAGG AGCTAACCGC TTTTTTGAC AACATGGGGG
2941 ATCATGTAAC TCGCCTTGAT CGTTGGGAAC CGGAGCTGAA TGAAGCCATA CCAAACGACG
3001 AGCGTGACAC CACGATGCCT GCAGCAATGG CAACAACGTT GCGCAAATA TTAAGTGGCG
3061 AACTACTTAC TCTAGCTTCC CGGCAACAAT TAATAGACTG GATGGAGGCG GATAAAGTTG
3121 CAGGACCACT TCTGCGCTCG GCCCTCCGG CTGGCTGGTT TATTGCTGAT AAATCTGGAG
3181 CCGGTGAGCG TGGGTCTCGC GGTATCATTG CAGCACTGGG GCCAGATGGT AAGCCCTCCC
3241 GTATCGTAGT TATCTACACG ACGGGGAGTC AGGCAACTAT GGATGAACGA AATAGACAGA
3301 TCGCTGAGAT AGGTGCCTCA CTGATTAAGC ATTGGTAACT GTCAGACCAA GTTTACTCAT
3361 ATATACTTTA GATTGATTTA AAAGTTCATT TTTAATTTAA AAGGATCTAG GTGAAGATCC
3421 TTTTTGATAA TCTCATGACC AAAATCCCTT AACGTGAGTT TTCGTTCCAC TGAGCGTCAG
3481 ACCCGTAGA AAAGATCAAA GGATCTTCTT GAGATCCTTT TTTTCTGCGC GTAATCTGCT
3541 GCTTGCAAAC AAAAAACCA CCGTACCAG CCGTGGTTTG TTTGCCGGAT CAAGAGCTAC
3601 CAACTCTTTT TCCGAAGGTA ACTGGCTTCA GCAGAGCGCA GATACCAAAT ACTGTCCTTC
3661 TAGTGTAGCC GTAGTTAGGC CACCACTTCA AGAACTCTGT AGCACCGCCT ACATACCTCG
3721 CTCTGCTAAT CCTGTTACCA GTGGCTGCTG CCAGTGGCGA TAAGTCGTGT CTTACCGGGT
3781 TGGACTCAAG ACGATAGTTA CCGGATAAGG CGCAGCGGTC GGGCTGAACG GGGGGTTCGT
3841 GCACACAGCC CAGCTTGGAG CGAACGACCT ACACCGAACT GAGATACCTA CAGCGTGAGC
3901 TATGAGAAAG CGCCACGCTT CCCGAAGGGA GAAAGGCGGA CAGGTATCCG GTAAGCGGCA
3961 GGGTCGGAAC AGGAGAGCGC ACGAGGGAGC TTCCAGGGGG AAACGCCTGG TATCTTTATA
4021 GTCCTGTCCG GTTTCGCCAC CTCTGACTTG AGCGTCGATT TTTGTGATGC TCGTCAGGGG
4081 GCGGAGCCT ATGGAAAAC GCCAGCAACG CGGCCTTTTT ACGGTTCTCG GCCTTTTGTCT
4141 GGCCTTTTGC TCACATGTTC TTTCTGCGT TATCCCCTGA TTCTGTGGAT AACCCTATTA
4201 CCGCCTTTGA GTGAGCTGAT ACCGCTCGCC GCAGCCGAAC GACCGAGCGC AGCGAGTCAG
4261 TGAGCGAGGA AGCGGAAGAG CGCCTGATGC GGTATTTTCT CTTACGCAT CTGTGCGGTA
4321 TTTCACACCG CATATATGGT GCACTCTCAG TACAATCTGC TCTGATGCCG CATAGTTAAG
4381 CCAGTATACA CTCCGCTATC GCTACGTGAC TGGGTCATGG CTGCGCCCCG ACACCCGCCA
4441 ACACCCGCTG ACGCGCCCTG ACGGGCTTGT CTGCTCCCGG CATCCGCTTA CAGACAAGCT
4501 GTGACCGTCT CCGGGAGCTG CATGTGTCAG AGTTTTTAC CGTCATCACC GAAACGCGCG
4561 AGGCAGCTGC GGTAAAGCTC ATCAGCGTGG TCGTGAAGCG ATTCACAGAT GTCTGCCTGT
4621 TCATCCGCGT CCAGCTCGTT GAGTTTCTCC AGAAGCGTTA ATGTCTGGCT TCTGATAAAG
4681 CGGGCCATGT TAAGGGCGGT TTTTCTCTGT TTGGTCACTG ATGCCTCCGT GTAAGGGGGA
4741 TTTCTGTTCA TGGGGTAAT GATACCGATG AAACGAGAGA GGATGCTCAC GATACGGGTT
4801 ACTGATGATG AACATGCCCG GTTACTGGAA CGTTGTGAGG GTAAACAACCT GGCGGTATGG
4861 ATGCGGCGGG ACCAGAGAAA AATCACTCAG GGTCAATGCC AGCGCTTCGT TAATACAGAT
4921 GTAGGTGTTT CACAGGGTAG CCAGCAGCAT CCTGCGATGC AGATCCGGAA CATAATGGTG
4981 CAGGGCGCTG ACTTCCGCGT TTCCAGACTT TACGAAACAC GGAAACCGAA GACCATTCAT
5041 GTTGTGCTC AGGTGCGAGA CGTTTTGCAG CAGCAGTCGC TTCACGTTCC CTCGCGTATC
5101 GGTGATTCAT TCTGCTAACC AGTAAGGCAA CCCC GCCAGC CTAGCCGGGT CCTCAACGAC
5161 AGGAGCACGA TCATGCGCAC CCGTGGCCAG GACCCAACGC TGCCCAGAT GCGCCGCGTG

LOCUS	RDB	xxxx	pETHFF	7477	bp	DNA	circular	10-MAR-2009
5221	CGGCTGCTGG	AGATGGCGGA	CGCGATGGAT	ATGTTCTGCC	AAGGGTTGGT	TTGCGCATTC		
5281	ACAGTTCTCC	GCAAGAATTG	ATTGGCTCCA	ATTCTTGGAG	TGGTGAATCC	GTTAGCGAGG		
5341	TGCCGCCGGC	TTCCATTGAG	GTCGAGGTGG	CCC GGCTCCA	TGCACCGCGA	CGCAACCGGG		
5401	GGAGGCAGAC	AAGGTATAGG	GCGGCGCCTA	CAATCCATGC	CAACCCGTTT	CATGTGCTCG		
5461	CCGAGGCGGC	ATAAATCGCC	GTGACGATCA	GCGGTCCAGT	GATCGAAGTT	AGGCTGGTAA		
5521	GAGCCGCGAG	CGATCCTTGA	AGCTGTCCCT	GATGGTCGTC	ATCTACCTGC	CTGGACAGCA		
5581	TGGCCTGCAA	CGCGGGCATC	CCGATGCCGC	CGGAAGCGAG	AAGAATCATA	ATGGGGAAGG		
5641	CCATCCAGCC	TCGCGTCGCG	AACGCCAGCA	AGACGTAGCC	CAGCGCGTCG	GCCGCCATGC		
5701	CGGCATAAT	GGCCTGCTTC	TCGCCGAAAC	GTTTGGTGGC	GGGACCAGTG	ACGAAGGCTT		
5761	GAGCGAGGGC	GTGCAAGATT	CCGAATACCG	CAAGCGACAG	GCCGATCATC	GTCGCGCTCC		
5821	AGCGAAAGCG	GTCCTCGCCG	AAAATGACCC	AGAGCGCTGC	CGGCACCTGT	CCTACGAGTT		
5881	GCATGATAAA	GAAGACAGTC	ATAAGTGGG	CGACGATAGT	CATGCCCCGC	GCCCACCGGA		
5941	AGGAGCTGAC	TGGGTTGAAG	GCTCTCAAGG	GCATCGGTGC	AGATCCCGGT	GCCTAATGAG		
6001	TGAGCTAACT	TACATTAATT	GCGTTGCGCT	CACTGCCCCG	TTTCCAGTCG	GAAACCTGT		
6061	CGTGCCAGCT	GCATTAATGA	ATCGGCCAAC	GCGCGGGGAG	AGGCGGTTTG	CGTATTGGGC		
6121	GCCAGGGTGG	TTTTTCTTTT	CACCAGTGAG	ACGGGCAACA	GCTGATTGCC	CTTCACCGCC		
6181	TGGCCCTGAG	AGAGTTGCAG	CAAGCGGTCC	ACGCTGGTTT	GCCCCAGCAG	GCGAAAATCC		
6241	TGTTTGATGG	TGGTTAACGG	CGGGATATAA	CATGAGCTGT	CTTCGGTATC	GTCGTATCCC		
6301	ACTACCGAGA	TATCCGCACC	AACGCGCAGC	CCGGACTCGG	TAATGGCGCG	CATTGCGCCC		
6361	AGCGCCATCT	GATCGTTGGC	AACCAGCATC	GCAGTGGGAA	CGATGCCCTC	ATTCAGCATT		
6421	TGCATGGTTT	GTTGAAAACC	GGACATGGCA	CTCCAGTCGC	CTTCCCCTTC	CGCTATCGGC		
6481	TGAATTTGAT	TGCGAGTGAG	ATATTTATGC	CAGCCAGCCA	GACGCAGACG	CGCCGAGACA		
6541	GAACCTAATG	GGCCCGCTAA	CAGCGCGATT	TGCTGGTGAC	CCAATGCGAC	CAGATGCTCC		
6601	ACGCCCAGTC	GCGTACCGTC	TTCATGGGAG	AAAATAATAC	TGTTGATGGG	TGTCTGGTCA		
6661	GAGACATCAA	GAAATAACGC	CGGAACATTA	GTGACGGCAG	CTTCCACAGC	AATGGCATCC		
6721	TGGTCATCCA	GCGGATAGTT	AATGATCAGC	CCACTGACGC	GTTGCGCGAG	AAGATTGTGC		
6781	ACCGCCGCTT	TACAGGCTTC	GACGCCGCTT	CGTTCTACCA	TCGACACCAC	CACGCTGGCA		
6841	CCCAGTTGAT	CGGCGCGAGA	TTTAATCGCC	GCGACAATTT	GCGACGGCGC	GTGCAGGGCC		
6901	AGACTGGAGG	TGGCAACGCC	AATCAGCAAC	GACTGTTTGC	CCGCCAGTTG	TTGTGCCACG		
6961	CGGTTGGGAA	TGTAATTCAG	CTCCGCCATC	GCCGCTTCCA	CTTTTTCCCG	CGTTTTCGCA		
7021	GAAACGTGGC	TGGCCTGGTT	CACCACGCGG	GAAACGGTCT	GATAAGAGAC	ACCGGCATAC		
7081	TCTGCGACAT	CGTATAACGT	TACTGGTTTC	ACATTCACCA	CCCTGAATTG	ACTCTCTTCC		
7141	GGGCGCTATC	ATGCCATACC	GCGAAAGGTT	TTGCGCCATT	CGATGGTGTG	CGGGATCTCG		
7201	ACGCTCTCCC	TTATGCGACT	CCTGCATTAG	GAAGCAGCCC	AGTAGTAGGT	TGAGGCCGTT		
7261	GAGCACCGCC	GCCGCAAGGA	ATGGTGCATG	CAAGGAGATG	GCGCCCAACA	GTCCCCGGGC		
7321	CACGGGGCCT	GCCACCATAC	CCACGCCGAA	ACAAGCGCTC	ATGAGCCCGA	AGTGGCGAGC		
7381	CCGATCTTCC	CCATCGGTGA	TGTCGGCGAT	ATAGGCGCCA	GCAACCGCAC	CTGTGGCGCC		
7441	GGTGATGCCG	GCCACGATGC	GTCCGGCGTA	GAGGATC				

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