

## Supplemental information

### Fujii S et al., Figure S1

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                                | - Sec7 domain ->
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                                Primer Sec71-GF14 ->
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F713Y  GATCGGAAACTACATTGGCGAGAATGACGACCCTCCAAGGAAGTGATGTGCGCTTACATCGAT
M717L  GATCGGAAACTACATTGGCGAGAATGACGACCCTCCAAGGAAGTGATGTGCGCTTACATCGAT

genome  A F D F R Q M E V V A A L R F L L E G F R L P G E A Q K I D
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                                AluI
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genome  F S I I M L T T D L H S P Q V K H K M T K E Q Y I K M N R G
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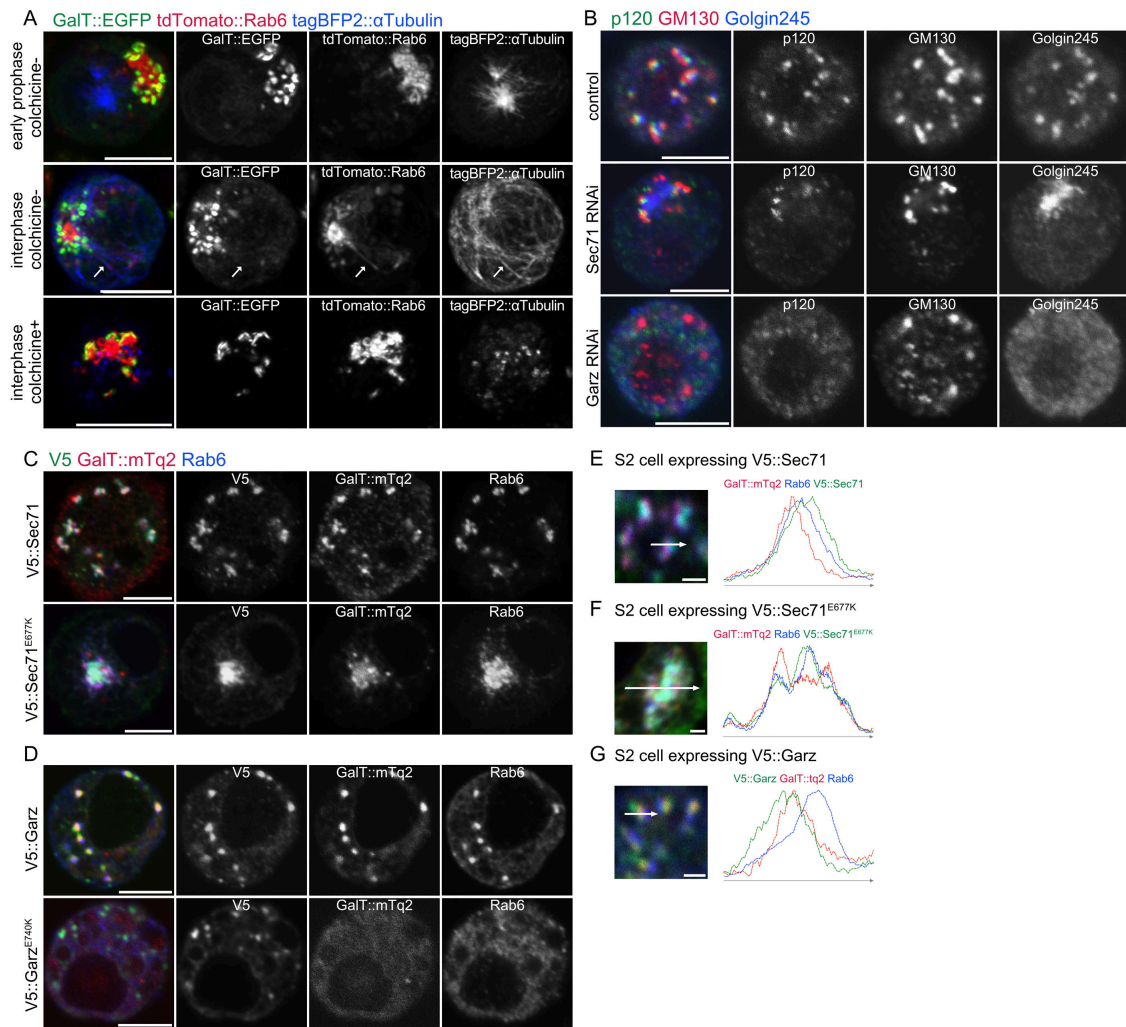
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                                < - Primer Sec71-GR6
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**Fig S1. Schematic of Sec71 genome-editing repair templates.**

Sec7-domain (blue), sequences (black), and mutations (lower case) to be knocked in, 713Y and M717L mutations (red), protospacers (green), PAM (violet), and predicted breakpoints (/).

Fujii S et al., Figure S2

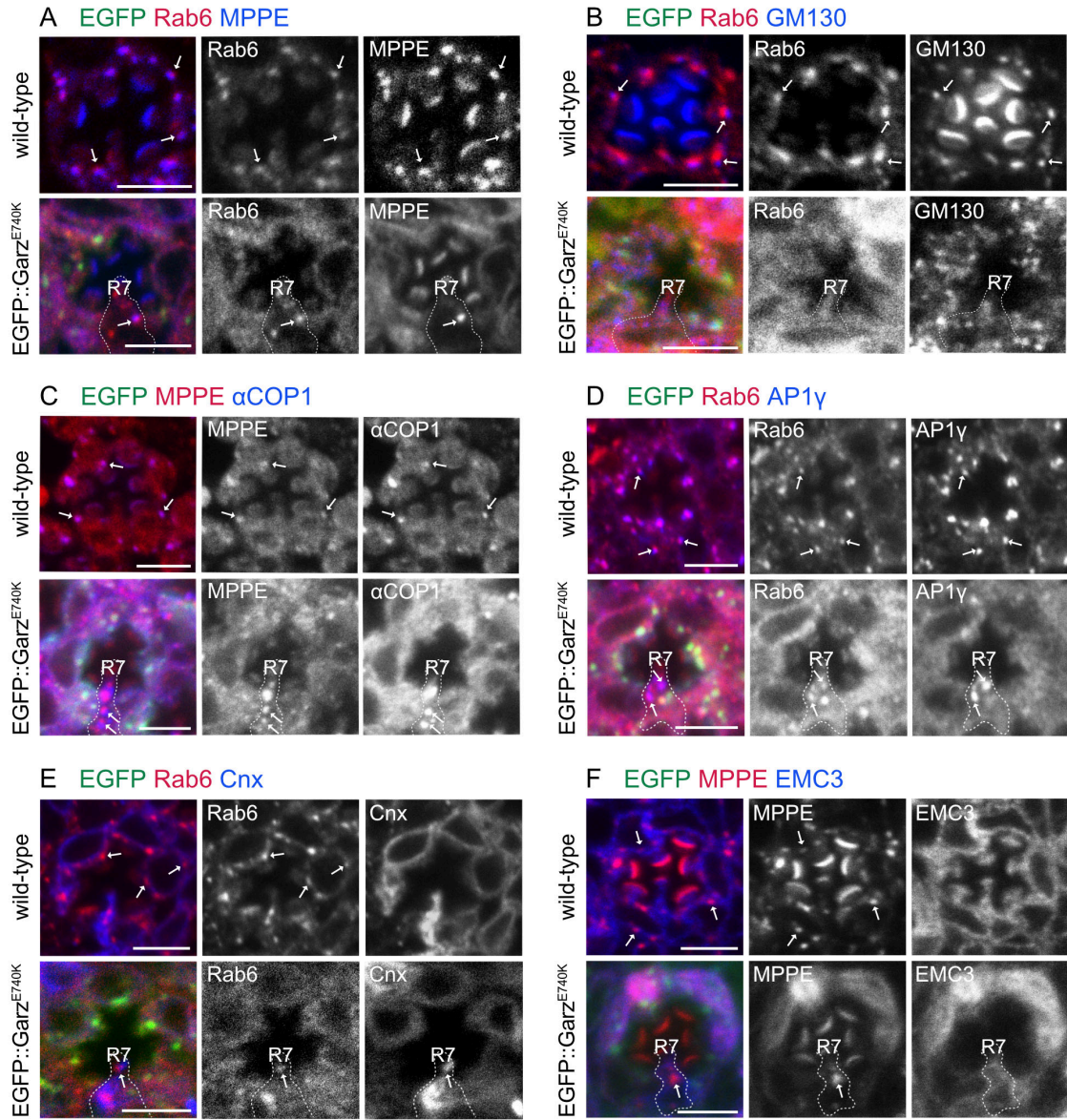


**Fig S2. Effects of Sec71 or Garz impairment on the distribution of Golgi enzymes in S2 cells.**

(A) Sec71<sup>F713Y</sup> cells expressing tagBFP2:: $\alpha$ Tubulin (blue), GalT::EGFP (green), and tdTomato::Rab6 (red) were treated with 25  $\mu$ M BFA for 2 h, and fixed. Z-series stacks at 0.3- $\mu$ m intervals were obtained by FV3000 confocal microscopy. Projected images by maximum intensity are presented. The cell shown in the bottom row was incubated with 30  $\mu$ M colchicine and 25  $\mu$ M BFA. (B) Immunostaining of cells without (upper panels), or with transfection of double-stranded RNA against Sec71 (panels in middle row), or Garz (lower panel), by anti-p120 (green), anti-GM130 (red) and anti-Golgin245 (blue) antibodies. (C) Immunostaining of cells expressing V5::Sec71 (upper panels) or V5::Sec71<sup>E677K</sup> (lower panels) together with GalT::mTq2 (red) by anti-V5 (green) and anti-Rab6 (blue) antibodies. (D) Immunostaining of S2 cell expressing V5::Garz (upper panels) or V5::Garz<sup>E740K</sup> (lower panels) together with GalT::mTq2 (red) by anti-V5 (green) and anti-Rab6 (blue) antibodies. (E, F, G) Left, immunostaining of cells expressing V5::Sec71 (E), V5::Sec71<sup>E677K</sup> (F) or V5::Garz (G) together with GalT::mTq2 (red) by anti-V5 (green) and anti-Rab6 (blue) antibodies. Right, plots of signal intensities from images on the left. Signal intensities were measured along the 1.5- $\mu$ m (E, G) or 5- $\mu$ m (F) arrows in insets; graphs show the overlap between channels. Scale bars: 5  $\mu$ m (A–D) and 1  $\mu$ m (E–G).



Fujii et al., Figure S3



**Fig S3. Golgi resident proteins, except GM130, are localized to ER in *Garz*<sup>E740K</sup>-expressing photoreceptors.**

Immunostaining of retinas from Rh1-Gal4/+ (upper panels) and Rh1-Gal4/ UAS-EGFP::*Garz*<sup>E740K</sup> (lower panels) late-pupal flies. EGFP::*Garz*<sup>E740K</sup> is expressed in R1-6 peripheral photoreceptors. Green represents the EGFP signal. Anti-Rab6 (red) and anti-MPPE (blue) antibodies (A). Anti-Rab6 (red) and anti-GM130 (blue) antibodies (B). Anti-Rab6 (red) and anti- $\alpha$ COPI (blue) antibodies (C). Anti-Rab6 (red) and anti-AP1 $\gamma$  (blue) antibodies (D). Anti-Rab6 (red) and anti- $\alpha$ Cnx (blue) antibodies (E). Anti-MPPE (red) and anti-EMC3 (blue) antibodies (F). Arrows indicate Golgi stacks in wild-type cells. Scale bar: 5  $\mu$ m (A–F).



**Movie 1. S2 cells expressing GalT::EGFP (green) and tdTomato::Rab6 (red) with or without BFA.**

Each frame represents the projection of three slices at 0.5  $\mu\text{m}$  intervals, taken every 90 or 60 seconds without or with 25  $\mu\text{M}$  BFA, collected by FV3000 confocal microscopy.

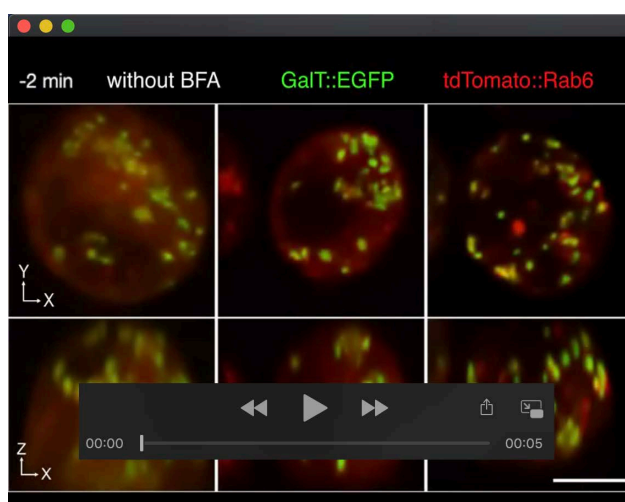
Arrows indicate mergers and arrowheads indicate separation of TGNs. The images in Fig. 4A and B were taken from this movie.

Scale bar: 5  $\mu\text{m}$ .



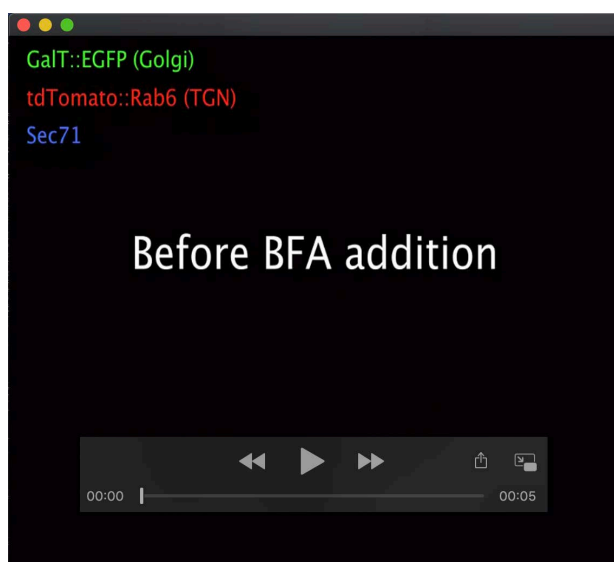
**Movie 2. S2 cells expressing GalT::EGFP (green) and tdTomato::Rab6 (red) without BFA.**

For two Sec71<sup>F713Y</sup> S2 cells expressing GalT::EGFP and tdTomato::Rab6 without BFA, volumes of 49 slices of 0.25- $\mu\text{m}$  thick images with 15 s interval, collected by FV3000 confocal microscopy. The area sparse with Golgi stacks were cropped and volume-rendered using Fluorender to generate images from the views of three axis. Arrows indicate mergers and arrowheads indicate separations of TGNs, respectively. Scale bar: 5  $\mu\text{m}$ .



**Movie 3. S2 cells expressing GalT::EGFP (green) and tdTomato::Rab6 (red) after BFA treatment.**

Three Sec71<sup>F713Y</sup> S2 cells (left, middle, and right) before and after 25 μM BFA addition are shown as Z-projections (upper row) and side views (lower row). Each frame represents the z-projected image of 49 slices of 0.25 μm thick images taken every 60 s for 59 min, collected by FV3000 confocal microscopy. Scale bar: 5 μm.



**Movie 4. S2 cells expressing GalT::EGFP (green), tdTomato::Rab6 (red), and iRFP713::Sec71.**

Each frame represents volume-rendered 3D images captured at 1.8-s intervals, collected by SCLIM. Without BFA, 10 or 79 min after 25 μM BFA addition are presented. Grid: 1 μm.

Table S1. List of Primers used in this study

Cloning of Sec71 cDNA	
Sec71-GF1	AGGGAAATCCGAAGCAGTGGTAGTAGG
Sec71-GR2	CTACGATTTGAGGGGATTTTCGGGTGG
GL3-Sec71	ggaggaggttctggtggtgtCACAACAACCTCCACAAA AACCAAGG
Sec71-MK-Sp	gatcttcatggtcgactagaATTATTTAACGCTCATTATA TTGAATACTGG
B-MK-V5	ctaaaggggggatctcgagGccaccATGGGTAAGCCTAT CCCT
GL3-R	accaccaccagaacctctctctcc
MT-Mlu-Short	GATGGTGATGATGaccggtacgCG
Cloning of garz cDNA	
garz-GF1	gagtgcctaaacatatgcgaaggtc
garz-GR1	aagacggtcaggtggtttgattgaa
GL3-garz	ggaggaggttctggtggtgtGCGCTTCCAGGCAACGG CAT
garz-MK-Sp	gatcttcatggtcgactagaATTACTGCTGGCCGTAGAG CAGTTC
Sequencing of Sec71 cDNA	
Sec71-GF3	CAGCAAGAACCTGGTCAATC
Sec71-GF4	CGGCTAAGTTTACGCACATC
Sec71-GF5	AAGTGCATGGTAGAGTGGAG
Sec71-GF6	CACGGATGGCAATTATCTGG
Sec71-GF7	gatctgtacaagcgtcagttcg
Sec71-GF8	GTGTGTTTCAGCAGAGTAACG
Sec71-GF9	AATGTTCATCGTGCGTGTC
Sec71-GF10	ATCTGAGAACCCGCCAGC



Sec71-GF11	CAAGATGACCAAGGAGCAG
Sec71-GF12	AGCCTCAGAAAGGAGTGCAATTCC
Sec71-GF13	CAGTGGTCACGCATTTGGC
Sec71-GF14	GATCGGAAACTACATTGGCGAGA
Sec71-GF15	TCGCCAGTAGATACTGCGAATG
Sec71-GR3	GGCGAACTCTGACAGGCACTTG
Sec71-GR4	CAACAGCTTTCTGCGTTTCTCCGT
Sec71-GR5	CGCGGTTTCATTTAATGTACTGCTC
Sec71-GR6	TCCACAACAGCTTTCTGCGTTTCT
Sequencing of garz cDNA	
garz-GF3	AGAATGACTCGCTGCTGAAG
garz-GF4	GTATGAGGGCTTGCTGGAG
garz-GF5	CGACTACGACTACAATCTGGC
garz-GF6	TTTGCGTGGTCTAAACGG
garz-GF7	G TTCACGACTACGGCGATTG
garz-GF8	ATGCGAAACGAAGA ACTGTG
garz-GF9	GCACACATCACGCCTTAC
garz-GF10	ATTATGTCTAAGGTGTTCTCTGC
garz-GF11	GTGAATGAGGCAACTGCTG
garz-GF12	GTGAATGAGGCAACTGCTG
garz-GF13	GCCGAGGCTGAGTGA ACTG
Site-directed mutagenesis	
Sec71-E677K-R	TTTTGTGCTTtTCCTGGCAGGCGGAACCCCT CGAG
Sec71-E677K-F	TCCGCCTGCCAGGAaAAGCACAAAAATCG ATCGGCTGA
garz-E740K-F	GATTGCCCGGAAAGGCTCCATTGATCTTTTT GGTGCTG
garz-E740K-R	ATCAATGGAGCCTTTCCGGGCAATCTGAAGG

	TCTCC
Sec71-M717L-F	ATCATTctgCTGACCACGGATCTTCATT
Sec71-M717L-R	GGTCAGcagAATGATGCTGAATGCCAGC
Sec71-F713Y-F	GCTGGCAtacAGCATCATTATGCTGACCACG
Sec71-F713Y-R	GATGCTgtaTGCCAGCACGTAGACGG
pMT-ST::EGFP      pMT- ManII::EGFP	
Sac-ST	GATCTCGAGctcgccaccATGATTCACACCAACC TGAAGAAA
ST-Sal	GTACCGTCGACCCCTTGGTTTGCAATTTAAA GGAATC
Sac-ManII	GATCTCGAGctcgccaccATGAAGTTAAGTCGCC AGTTCACCG
ManII-B	GGTGGATCCAAACAGTCTCTGGGGTCAGCC T
pMT-GalT-EGFP-T2A- tdTomato-Rab11	
msK-GalT-F	ggggatctagatcggGGTACCaccATGAGGCTTCGGG AGC
Rab11-MT-Mlu	GATGGTGATGATGaccggtacgCGTACTGACAG CACTGTTTGCGCA
dT2A-EGFP	AGAGAACCCTGGCCCTggtGccaccATGGTGAG CAAGGGCGAG
dT2As	ggaGAAGGACGCGGCAGCCTACTGACTTGCG GAGATGTCTGAAGAGAACCCTGGCCCTggt
dT2Aa	GCCAGGGTTCTCTTCGACATCTCCGCAAGTC AGTAGGCTGCCGCGTCCTTcaccctcc

RNAi in S2 Cells	
garz-DRSC07193-F	CATATCGGGCGCACTATAATCTGCATTCCG
garz-DRSC07193-T7F	TAATACGACTCACTATAGGGGCATATCGGGCGC ACTATAATCTGCA
garz-DRSC07193-R	TTGCACAAACTTTGATTCTGCAGCA
garz-DRSC07193-T7F	TAATACGACTCACTATAGGGTTCACAAACT TTGATTCTGCA
garz-DRSC07193-T7R	TAATACGACTCACTATAGGGTTCACAAACT TTGATTCTGCA
Sec71-DRSC01893-F	AGTCCGATTTGCCCGAGGAGTACT
Sec71-DRSC01893-R	CATTATAAGCGTCTTGATGGTATCGATATTCT TGGC
Sec71-DRSC01893-T7F	TAATACGACTCACTATAGGGAGTCCGATTTG CCCGAG
Sec71-DRSC01893-T7R	TAATACGACTCACTATAGGGCATTATAAGCGT CTTGATGGTATCGAT
pMT-hyg-V5-iRFP713- Sec71	
GL3-Sec71	ggaggaggttctggtggtCACAACAACCTCCACAAA AACCAAGG
Sec71-MK-Sp	gatcttcatggtcgactagaATTATTTAACGCTCATTATA TTGAATACTGG
MK-MT-Ap	aggcttacctcgaaggcccagacagagtacttgcgctct
Asc-GL3	ggGGCGCGCCtGGAGGAGGAGGTTCTGGTGG TGGT
CRISPR-mediated genome-editing	
Sec71 BFA-resistant repairing template	
	GATCGGAAACTACATTGGCGAGAATGACGACCACTCCAAGGAAGTGAT GTGCGCTTACATCGATGCCTTTGACTTTCGCCAAATGGAGGTGGTGGCC

GCCTTGAGATTTCTTCTCGAGGGGTTCGCCTGCCAGGAGAAGCACAA  
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CAGTACATTAAAATGAACCGCGGCATCAGCGACAGCAAGTCCGATTTGC  
CCGAGGAGTACTTGTCGTCCATCTACGACGAGATTTCTGAACACGAAAT  
TAAGATGAAGAACAACCTCCGGTATGCTTCAACAGGCGAAACCCACTGG  
AAAGCAGGCCTTCATAACGGAGAAACGCAGAAAGCTGTTGTGGA

Sec71 BFA-sensitive repairing template

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CCGAGGAGTACTTGTCGTCCATCTACGACGAGATTTCTGAACACGAAAT  
TAAGATGAAGAACAACCTCCGGTATGCTTCAACAGGCGAAACCCACTGG  
AAAGCAGGCCTTCATAACGGAGAAACGCAGAAAGCTGTTGTGGA

crRNA for CRISPR-mediated genome-editing

Sec71-crRNA7

CUUUGGAAUAGCUGGUUCUUGUUUUAGAGCUAUGCU

(protospacer in DNA: CTTTGGAAATAGCTGGTTCTT)

Sec71-crRNA8

GGUCAAGCACAAGAUGACCAGUUUUAGAGCUAUGCU

(protospacer in DNA: GGTC AAGCACAAGATGACCA)

Table S2. DNA sequence of plasmids used in this study

pMK-V5::Sec71					
LOCUS	pMK_V5_Sec71	13255 bp	ds-DNA	circular	27-FEB-2020
COMMENT	pMK-V5-garz from 1 to 14245				
COMMENT	pMK33-CFH-BD from 1 to 8550				
COMMENT	>pMK33-CFH-BD, 8550 bases.				
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               /label=M717L(BFA-resistant)
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ORIGIN

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12301 CCACCAAGTA CATTATTGCC GGATTTGGT AATGAGGCAA CTGCTGCTGC CGTGCAAGCC  
12361 ACGACCACGT CCCCAGCGCA CAGCCCGCAG GAGGCGGAGC AGCCGGCTTC AATAGTGAG  
12421 CAGACCAACA TCGTAACCAC CAACAATACG TACAATAGCT ACGCCATTGA GGTGCCCATG  
12481 GCGCCGAGGA CAACTGCGGA ACAGTTTGGG CAGCAGCAGC AGCAACTGCT TTACCAACAG  
12541 TACTATCAAC AGTATCAGGC CCAGCAGCAA CAGTTGCCGG CTCCAGCCAG CGACCCTGCC  
12601 ATCAATGTGC CAATTAGTCA TCTGCTGGCC GGAAATGCGT ACCCCTCGCT CCCAAAATG  
12661 CCGCAGGCAT CCATTGTGCA CAGCTTTGCG CCCGTTTACG AAAGCCAGGC GGCGACGAGT  
12721 GGAGCTGGGA CAGCAGCAGC GGACATCTAT CAGGAGTATG TGCAAAATCC GTACAACCTT  
12781 ACGTTGCAAC AGCATCCCCA ACAGCAGCTC CATCAGCAGC AGCAGCAGCA ACAACAGCAG  
12841 GCTACAGGAA TGGCCAACGC ATTTCCCGCC GTTGCCACGC CAGCCAATA CTTAATGTG  
12901 AATGTGGACC CCAGTAGCAT ACCGCCCGGA TCGGAACTGC TCTACGGCCA GCAGTAATtc  
12961 tagtcgacca tgaagatcaa gatcattgcc ccgccagagc gcaagtactc tgtctggatc  
13021 ggtggctcca tcctggCTTC GCTGTCCACC TTCCAGcaga tgtggatctc caagcaggag  
13081 tacgacgagt ccggcccctc cattgtgcac cgcaagtgct tctaagaagg atcgcttgtc  
13141 tgggcaagag gatcaggatc gggatggtct tgattctgct ggaggaggag gaggagaagt  
13201 cgaggaagca gcagcgaaag tgcaagtgcg agtgggtgaa gtttggagtg cagcacaaca  
13261 aaatcaacaa caacaccaac tacaagatga aaagagcgga accacctgca caccatcatc  
13321 actatcatca tcgttttggg cgcattgtgt gtggttccag cgtattaata taattaattt  
13381 attccacatg agatatgata tgatatacta tgtatTTTTT gTTTTTTTTT tatttGtaaa  
13441 ctttaatat aacaagaact acaaaaaatg aaaatgagcg aaaatgcata ttctgccatt  
13501 ccacacacac accaacaaca ccaacacac gcacacccac aagcttacac acacacattc



```

13561 gcggcatgac aaggacatca agataaagaa gaacttaaag aagatatttc ccaaagcgca
13621 aaaagaacac acacacattg caaacacaaa acaacacact agcgttttgt acaattcgtc
13681 agcaacctta tgtattatth tttattatg atgtaattat aaacaaagtg aaacaaaaat
13741 atgaaaacaa aaaggaaaat caaatctgtc ttctctttct cccgctctcc tcgctctctg
13801 ctgctaacct cgccctctcc tctctcatct ttttgtctgt ctctcttcca cttttttgcc
13861 ggccggcaaa ataataaccc acacacactc acacttggct gcagtttcgc gtgcatatt
13921 cacacacatt caagcataca agcatacata catatgtatt tttttttat ttgtacactt
13981 ttctaattgc atgcgtatcg attgataagt ttacgcctga aatgttaat taaaatgtga
14041 aatgcaact gaaaaactga tgaatgaaa caacaacaag cgaacaattt gctacatgtg
14101 tattgtctaa caaccgttac tgcaacggtt gcttcggaaa aggggtgaaga ggaagagggc
14161 acgaggtcga ctagagcggc cgccgacgcg aggctggatg gccttcccca ttatgattct
14221 tctcgcttcc ggcggcatcg ggatg
//

```

pMK-V5::Sec71 <sup>E677K</sup>					
LOCUS	pMK_V5_Sec71_E677K	13255 bp	ds-DNA	circular	27-FEB-2020
COMMENT	pMK-V5-garz from 1 to 14245				
COMMENT	pMK33-CFH-BD from 1 to 8550				
COMMENT	>pMK33-CFH-BD, 8550 bases.				
COMMENT	ApEinfo:methylated:1				
FEATURES	Location/Qualifiers				
misc_feature	6493..6860				
	/label=MT-promoter				
	/ApEinfo_fwdcolor=cyan				
	/ApEinfo_revcolor=#00ff00				
	/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}				
	width 5 offset 0				
misc_feature	4326..5351				
	/label=Hyg				
	/ApEinfo_fwdcolor=#ffffcc				
	/ApEinfo_revcolor=#00ff00				
	/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}				
	width 5 offset 0				
misc_feature	6979..6984				
	/label=SpeI				
	/ApEinfo_fwdcolor=#ccff66				

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    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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rep_origin    complement(777..1459)
    /label=ColE1 origin
    /ApEinfo_fwdcolor=gray50
    /ApEinfo_revcolor=gray50
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind   5645..5664
    /label=pUAST-R
    /ApEinfo_fwdcolor=#0a00ff
    /ApEinfo_revcolor=#0a00ff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS           complement(1557..2216)
    /label=AmpR
    /ApEinfo_fwdcolor=yellow
    /ApEinfo_revcolor=yellow
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind   complement(2135..2159)
    /label=Amp-GF
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
polyA_signal  complement(6293..6484)
    /label=SV40 late polyA
    /ApEinfo_fwdcolor=pink
    /ApEinfo_revcolor=pink
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind   2528..2545
    /label=pQE60-F
    /ApEinfo_fwdcolor=#ff00bd
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    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
primer_bind    1677..1700
    /label=Amp-GR1
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    6937..6978
    /label=V5
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    6985..7008
    /label=Linker GL3
    /ApEinfo_fwdcolor=#ffcc66
    /ApEinfo_revcolor=#ffcc66
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
primer_bind    complement(12340..12359)
    /label=Act5C-qR2
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
primer_bind    12144..12163
    /label=Act5C-qF1
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
primer_bind    complement(12351..12370)
    /label=Act5C-qR1
    /ApEinfo_fwdcolor=#ff00bd
```

```

    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    12078..12097
    /label=Act5C-qF2
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    complement(12047..12065)
    /label=Seq-MK-R
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    12006..12027
    /label=New Feature
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    6928..6928
    /label=BamHI
    /ApEinfo_fwdcolor=#ffcc66
    /ApEinfo_revcolor=#ffcc66
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    6896..6913
    /label=Metallothionein_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    6836..6853
    /label=SEQ-MT-F2
    /ApEinfo_fwdcolor=#ff00bd
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	<pre>/ApEinfo_revcolor=#ff0003 /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0} width 5 offset 0</pre>
CDS	<pre>7009..11964 /label=Sec71 /ApEinfo_fwdcolor=#99ccff /ApEinfo_revcolor=#cde7f7 /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0} width 5 offset 0</pre>
CDS	<pre>9885..9885 /label=Sec71-PA /ApEinfo_fwdcolor=#99ccff /ApEinfo_revcolor=#cde7f7 /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0} width 5 offset 0</pre>
CDS	<pre>7972..7974 /label=Sec71-PA(1) /ApEinfo_label=Sec71-PA /ApEinfo_fwdcolor=#99ccff /ApEinfo_revcolor=#cde7f7 /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0} width 5 offset 0</pre>
misc_feature	<pre>11562..11562 /label=T&gt;G silent /ApEinfo_fwdcolor=cyan /ApEinfo_revcolor=#00ff00 /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0} width 5 offset 0</pre>
misc_feature	<pre>11358..11358 /label=T&gt;C silent /ApEinfo_fwdcolor=cyan /ApEinfo_revcolor=#00ff00 /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0} width 5 offset 0</pre>
misc_feature	<pre>10504..10525 /label=Chang-F1</pre>

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    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    9765..9784
    /label=sec71-GF6
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    7563..7582
    /label=sec71-GF3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature   9885..9885
    /label=A>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature   9624..9624
    /label=A>G in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
CDS            8064..8064
    /label=Sec71-PA(2)
    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
CDS            8595..8595
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    /label=Sec71-PA(3)
    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
protein_bind    8728..9300
    /label=Sec7 domain
    /ApEinfo_fwdcolor=#0080ff
    /ApEinfo_revcolor=#0080ff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    11442..11442
    /label=G>A silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    9145..9147
    /label=S191
    /ApEinfo_fwdcolor=#66ff66
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    11547..11547
    /label=C>T silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    11746..11746
    /label=T>C silent(1)
    /ApEinfo_label=T>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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width 5 offset 0
primer_bind    8545..8564
               /label=Sec71-GF5
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    9245..9268
               /label=Sec71-DRSC01893-F (8A10)
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    complement(9721..9756)
               /label=Sec71-DRSC01893-R
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature   11319..11319
               /label=T>C silent(2)
               /ApEinfo_label=T>C silent
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    11049..11068
               /label=sec71-GF8
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    10504..10525
               /label=sec71-GF7
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
```



```
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    complement(11219..11240)
    /label=Chang-R1
    /ApEinfo_fwdcolor=#fb53d0
    /ApEinfo_revcolor=#fc5a5d
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    7919..7938
    /label=sec71-GF4
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    complement(10557..10578)
    /label=Sec71-GR3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    9034..9036
    /label=E677 (E740 in garz)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8595..8595
    /label=G>A silent(1)
    /ApEinfo_label=G>A silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8064..8064
    /label=C>T confirmed in 40A 2013
    /ApEinfo_fwdcolor=cyan
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```

/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9142..9144
/ApEinfo_label=F190 F190Y=BFA-hypersensitive
/ApEinfo_label=F713Y(BFA-sensitive)
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9552..9552
/ApEinfo_label=T>C in 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9663..9663
/ApEinfo_label=A>C in 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9714..9714
/ApEinfo_label=A>G 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 11331..11331
/ApEinfo_label=T>C in 40A(1)
/ApEinfo_label=T>C in 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 11657..11674
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    /label=Sec71-GF10
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    7035..7052
    /label=GF9
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    9192..9210
    /label=Sec71-GF11
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    complement(9370..9393)
    /label=Sec71-GR4
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    8792..8815
    /label=Sec71-GF12
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    10132..10150
    /label=Sec71-GF13
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    9154..9156
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    /label=M717(M194 in sec7 domain M>L = BFA-resistant)
    /label=M717L(BFA-resistant)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
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misc_feature    11965..11967
    /label=STOP
    /ApEinfo_fwdcolor=#66ccff
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    8898..8920
    /label=Sec71-GF14
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    9068..9089
    /label=Sec71-GF15
    /ApEinfo_fwdcolor=#fb53d0
    /ApEinfo_revcolor=#fc5a5d
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    complement(9094..9116)
    /label=Sec71-crRNA7(Protospacer)
    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#ffff9f
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    9094..9096
    /label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
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misc_feature 9183..9202
    /label=Sec71-crRNA8 Protospacer
    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 9203..9205
    /label=PAM(1)
    /ApEinfo_label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 9823..9823
    /label=T>C Val>Ala in FRT40A
    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
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ORIGIN

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61 ggatcgctcg cggctcttac cagcctaact tcgatcattg gaccgctgat cgtcacggcg
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241 atggaagccg gcggcacctc gctaacggat tcaccactcc aagaattgga gccaatcaat
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361 ccatctccag cagccgcacg cggcgcattc cgggcagcgt tgggtcctgg ccacgggtgc
421 gcatgatcgt gtcctgtcgc ttgaggacc ggctaggctg gcgggggtgc cttactggtt
481 agcagaatga atcaccgata cgcgagcga cgtgaagcga ctgctgctgc aaaacgtctg
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601 ggaagtcagc gctcttccgc ttctcgtc actgactcgc tgcgctcggc cgttcggctg
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721 aacgcaggaa agaacatgtg agcaaaaggc cagcaaaagg ccaggaaccg taaaaaggcc
781 gcggttctgg cgtttttcca taggctccgc cccctgacg agcatcaca aaatcgacgc
841 tcaagtcaga ggtggcgaaa cccgacagga ctataaagat accaggcgtt tcccctgga
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//

**pMT-hyg-V5::Sec71**

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LOCUS      pMT_hyg_V5_Sec71      10266 bp ds-DNA      circular      28-FEB-
2020
DEFINITION pMT-puro Sequencing Result
ORGANISM   other sequences; artificial sequences; vectors.
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COMMENT    pMT-vSOG4m from 1 to 5126
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    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
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misc_feature    7150..7152
    /label=S191
    /ApEinfo_fwdcolor=#66ff66
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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misc_feature    9751..9751
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    /ApEinfo_label=T>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
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width 5 offset 0
primer_bind     6550..6569
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    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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    /ApEinfo_fwdcolor=#ff00bd
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misc_feature    9324..9324
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    /ApEinfo_label=T>C silent
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    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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misc_feature    7039..7041
    /label=E677 (E740 in garz)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    6600..6600
    /label=G>A silent(1)
    /ApEinfo_label=G>A silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
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    /label=F190 F190Y=BFA-hypersensitive
    /label=F713Y(BFA-sensitive)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
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misc_feature    7719..7719
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misc_feature    9336..9336
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                /ApEinfo_label=T>C in 40A
                /ApEinfo_fwdcolor=cyan
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                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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                /ApEinfo_revcolor=#ff0003
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                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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primer_bind     8137..8155
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               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature   7099..7101
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               /ApEinfo_fwdcolor=#fc81f0
               /ApEinfo_revcolor=#fc81f0
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature   7208..7210
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               /ApEinfo_label=PAM
               /ApEinfo_fwdcolor=#fc81f0
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width 5 offset 0
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               /ApEinfo_label=V5
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               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
promoter 4463..4479
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width 5 offset 0
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    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature complement(4113..4135)
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    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
promoter complement(3926..3954)
    /label=AmpR_promoter
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    /ApEinfo_revcolor=#ccffed
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    /label=Ampicillin
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    /ApEinfo_revcolor=#ffffcc
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width 5 offset 0
rep_origin complement(2250..2869)

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width 5 offset 0
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/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
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    /ApEinfo_revcolor=#ccffed
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promoter       complement(1859..1877)

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DRWEPELNEAIPNDERDTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL

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  /ApEinfo_revcolor=#00ff00
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  /ApEinfo_revcolor=#cde7f7
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width 5 offset 0
primer_bind complement(1859..1879)
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  /ApEinfo_revcolor=green
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misc_feature    1254..1268
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               /ApEinfo_fwdcolor=cyan
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gene            complement(143..173)
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DAREEEFLQLGDPLDVAVRVDGVARGGVVGERGGEGAYGPGDVVAGGEAHRGLVLGHG
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    /label=puro (variant)
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    /ApEinfo_label=New Feature
    /ApEinfo_fwdcolor=cyan
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    661 gcgtgcacga ggtgccggac ttcggggcag tcctcggccc aaagcatcag ctcatcgaga
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    901 tccgcgaccg gctgcagaac agcgggcagt tcggtttcag gcaggctctg caacgtgaca
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1141 aaagcacgag attcttcgcc ctccgagagc tgcatacagg cggagacgct gtcgaacttt  
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//					
pMT-hyg-V5::Sec71 <sup>E677K</sup>					
LOCUS	pMT_hyg_V5_Sec71_E677K	10266 bp	ds-DNA	circular	28-FEB-2020
DEFINITION	pMT-puro Sequencing Result				
ORGANISM	other sequences; artificial sequences; vectors.				
COMMENT	pMT-vAX2m from 1 to 5573				
COMMENT	pMT-vS0G4m from 1 to 5126				
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        /ApEinfo_label=Sec71-PA
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        /ApEinfo_revcolor=#cde7f7
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ORIGIN

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6301 AACTCAAGCA GCTTCGAGCA CAAATGGATG GTAATCCAAG CGCTGACACG TATTTGTGCT  
6361 GACGCCCAGT CCGTGGTGA TATCTATGTT AATTACGATT GCGACTTTTC GGCTGCAAAC  
6421 CTTTTTGAGA GACTGGTCAA CGATCTTTCG AAAATTGCC AGGGTCGTCA GGCTCTCGAA  
6481 CTGGGCGCCA ATCCGATGCA AGAGAAATCG ATGCGCATTG GCGGCCTGGA GTGTCTTGTC  
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6661 ATCCAAACGA TGCACAGTGG TTCCAGTCAT AGTTTGAAC CCAATCAGGA GCAACTACAG  
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6841 GGTGCCACAT GCGGGGACAT TGCGCGCTGG CTGCACGAGG ACGAACGACT GGACAAGACA  
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6961 ATCGATGCCT TTGACTTTCG CCAATGGAG GTGGTGGCCG CTTGAGATT TCTTCTCGAG  
7021 GGGTTCGCC TGCCAGGAaA AGCACAAAA ATCGATCGGC TGATGGAGAA GTTCGCCAGT  
7081 AGATACTGCG AATGCAATCC GAAGAACCAG CTATTCCAAA GCGCAGACAC CGTCTACGTG  
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7321 AACAACTCCG GTATGCTTCA ACAGGCGAAA CCCACTGGAA AGCAGGCCTT CATAACGGAG  
7381 AAACGCAGAA AGCTGTTGTG GAACATGGAG ATGGAGGTCA TCTCGCTGAC GGCCACCAAT  
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9181 ATCTTCAACG CCACTTTGCC GCAGGATCTC CTCAGTTGGC GGCCGAAAGC ACATTCCAGT
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10081 TACGcgtacc ggtCATCATC ACCATCACCA TTGAgtttaa acccgctgat cagcctcgac
10141 tgtgccttct aagatccaga catgataaga tacattgatg agtttggaca aaccacaact
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10261 accatt
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//

pMT-hyg-V5::garz					
LOCUS	pMT_V5_garz	11146 bp	ds-DNA	circular	28-FEB-2020
DEFINITION	pMT-puro Sequencing Result				
ORGANISM	other sequences; artificial sequences; vectors.				
COMMENT	pMT-puro from 1 to 4724				
COMMENT	ApEinfo:methylated:1				
FEATURES	Location/Qualifiers				
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DRWEPELNEAIPNDERDTMPVAMATTLRKLTLGELLTLASRQQLIDWMEADKVAGPL
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<p>10201 A T A C T G C A G C C A C C C A T G G C G A T G T A C T G C A A C A G C C C G C C C A G C T T T G T A T T T G C T C A G  10261 C C C A T T A T T G T G C C A C C C C A G C C G C T G C A G T T A C G G A C C C A A T A C C A C C A A G T A C A T T A  10321 T T G C C G G A T T T G G T G A A T G A G G C A A C T G C T G C T G C C G T G C A A G C C A C G A C C A C G T C C C C G  10381 A C G C A C A G C C C G C A G G A G G C G G A G C A G C C G C T T C A A T A G T G C A G C A G A C C A A C A T C G T A  10441 A C C A C C A A C A A T A C G T A C A A T A G C T A C G C C A T T G A G G T G C C C A T G G C G C C G G A G A C A A C T  10501 G C G G A A C A G T T T G G G C A G C A G C A G C A A C T G C T T T A C C A A C A G T A C T A T C A A C A G T A T  10561 C A G C C C C A G C A G C A A C A G T T G C C G G C T C C A G C C A G C G A C C C T G C C A T C A A T G T G C C A A T T  10621 A G T C A T C T G C T G C C G G A A A T G C G T A C C C C T C G C T C C C C A A A T G C C G C A G G C A T C C A T T  10681 G T G C A C A G C T T T G C G C C C G T T T A C G A A A G C C A G G C G G C G A C G A G T G G A G C T G G G A C A G C A  10741 G C A G C G G A C A T C T A T C A G G A G T A T G T G C A A A A T C C G T A C A C C T T A C G T T G C A A C A G C A T  10801 C C C C A A C A G C A G C T C C A T C A G C A G C A G C A G C A C A C A C A G C A G G C T A C A G G A A T G G C C  10861 A A C G C A T T T C C G C C G T T G C C A G C C A G C C A A C T A C T T T A A T G T G A A T G T G G A C C C C A G T  10921 A G C A T A C C G C C G G A T C G G A A C T G C T C T A C G G C C A G C A G T A A c g c g t a c c g g t c a t c a t c  10981 a c c a t c a c c a t t g a g t t t a a a c c c g t g a t c a g c c t c g a c t g t g c c t t c t a a g a t c c a g a  11041 c a t g a t a a g a t a c a t t g a t g a g t t t g g a c a a c c a c a a c t a g a a t g c a g t g a a a a a a a t g  11101 c t t t a t t t g t g a a a t t t g t g a t g c t a t t g c t t t a t t t g t a a c c a t t</p> <p>//</p>					
<p>pMT-hyg-V5::garz<sup>E740K</sup></p>					
LOCUS	pMT-hyg-V5::garzE740K	11146 bp	ds-DNA	circular	28-FEB-2020
DEFINITION	pMT-puro Sequencing Result				
ORGANISM	other sequences; artificial sequences; vectors.				
COMMENT	pMT-puro from 1 to 4724				
COMMENT	ApEinfo:methylated:1				
FEATURES	Location/Qualifiers				
misc_feature	complement(11057..11076)				
	/label=EBV_rev_primer				
	/ApEinfo_fwdcolor=#ff3600				
	/ApEinfo_revcolor=#ff3600				
	/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}				
	width 5 offset 0				
CDS	6913..7278				
	/label=New Feature				
	/ApEinfo_fwdcolor=#99ccff				
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	/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}				

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width 5 offset 0
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  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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  /label=BGH_rev_primer
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  /ApEinfo_revcolor=#ff3600
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature complement(4327..4482)
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  /ApEinfo_fwdcolor=#ff3600
  /ApEinfo_revcolor=#ff3600
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS 9094..10959
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  /ApEinfo_fwdcolor=#99ccff
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  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
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  /ApEinfo_label=V5
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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  /label=190Y
  /ApEinfo_fwdcolor=#ccff66
  /ApEinfo_revcolor=#00ff00
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            4463..4479
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            /ApEinfo_revcolor=#ccffed
            /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
            width 5 offset 0
CDS         5560..5586
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            /ApEinfo_label=New Feature
            /ApEinfo_fwdcolor=#99ccff
            /ApEinfo_revcolor=#99ccff
            /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
            width 5 offset 0
misc_feature 4448..4470
            /label=M13_pUC_fwd_primer
            /ApEinfo_fwdcolor=#ff3600
            /ApEinfo_revcolor=#ff3600
            /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
            width 5 offset 0
primer_bind 5560..5586
            /label=JF01603-F
            /ApEinfo_fwdcolor=#ff00bd
            /ApEinfo_revcolor=#ff0003
            /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
            width 5 offset 0
misc_feature complement(4113..4135)
            /label=pGEX_3_primer
            /ApEinfo_fwdcolor=#ff3600
            /ApEinfo_revcolor=#ff3600
            /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
            width 5 offset 0
misc_feature 8946..8982
            /label=Phosphatidylinositol-phosphate binding
            /ApEinfo_fwdcolor=#ff81f0
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              width 5 offset 0
              complement(3926..3954)
              /label=AmpR_promoter
              /ApEinfo_fwdcolor=#ccffed
              /ApEinfo_revcolor=#ccffed
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
              width 5 offset 0
gene          complement(3024..3884)
              /gene="Ampicillin"
              /label=Ampicillin
              /ApEinfo_fwdcolor=#ffffcc
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              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
              width 5 offset 0
CDS          8983..9075
              /label=garz-PB(1)
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              /ApEinfo_fwdcolor=#99ccff
              /ApEinfo_revcolor=#cde7f7
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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rep_origin   complement(2250..2869)

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YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHFVTRL
DRWEPELNEAIPNDERDTTMPVAMATTLRKLTTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
EIGASLIKHW*"
              /label=pBR322_origin
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    /ApEinfo_fwdcolor=pink
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    /ApEinfo_label=New Feature
    /ApEinfo_fwdcolor=#99ccff
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    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
promoter complement(1912..1941)

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YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
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    EIGASLIKHW*"
    /label=lac_promoter
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 4990..5013
    /label=Linker GL3
    /ApEinfo_fwdcolor=#ffcc66
    /ApEinfo_revcolor=#ffcc66
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 4984..4989
    /label=SpeI
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    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#ffffcc
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width 5 offset 0
misc_feature    8369..8370
    /label=MB05159
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    complement(1876..1898)

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YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=M13_pUC_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
promoter        complement(1859..1877)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
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YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
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LRSALPAGWFIADKSGAGERSGRIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=M13_reverse_primer
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    4489..4856
    /label=MT-promoter
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
CDS            6889..6912
    /label=garz-PB(2)
    /ApEinfo_label=garz-PB
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    4462..4479
    /label=M13-fwd
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    10333..10351
    /label=garz-GF11
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    complement(1859..1879)
    /label=M13-rev
    /ApEinfo_fwdcolor=cyan
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    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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    /label=garz-7193-F
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
rep_origin    complement(2247..2929)
    /label=ColE1 origin
    /ApEinfo_fwdcolor=gray50
    /ApEinfo_revcolor=gray50
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
CDS           7488..7494
    /label=New Feature(3)
    /ApEinfo_label=New Feature
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#99ccff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
CDS           complement(4323..4391)
    /label=LacZ alpha
    /ApEinfo_fwdcolor=#6495ed
    /ApEinfo_revcolor=#6495ed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature  7228..7230
    /label=E740K
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_binding  complement(1885..1907)
    /label=Lac0
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    /ApEinfo_fwdcolor=#6495ed
    /ApEinfo_revcolor=#6495ed
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width 5 offset 0
primer_bind    complement(6005..6027)
    /label=garz-JF01603-R
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS            complement(3027..3686)
    /label=AmpR
    /ApEinfo_fwdcolor=yellow
    /ApEinfo_revcolor=yellow
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature   5928..5928
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    /ApEinfo_label=New Feature
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#00ff00
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width 5 offset 0
primer_bind    4436..4459
    /label=M13F
    /ApEinfo_fwdcolor=#0a00ff
    /ApEinfo_revcolor=#0a00ff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    6243..6261
    /label=garz-GF4
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    4462..4479
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    /label=M13F_GW
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    /ApEinfo_revcolor=#ff0003
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width 5 offset 0
primer_bind    complement(1859..1879)
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    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
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width 5 offset 0
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    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    complement(1350..1708)
    /label=Copia Promoter?
    /ApEinfo_fwdcolor=#cde7f7
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    4892..4909
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    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
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width 5 offset 0
misc_feature    10974..10991
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    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
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width 5 offset 0
misc_feature    complement(225..1250)
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        /label=Hyg
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misc_feature    1254..1268
        /label=New Feature(5)
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        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
gene            complement(143..173)
        /gene="puro (variant)"

/translation="MGSCAPFGRALRVVGRASGTGLAGHAPGARSFGHLDVGGDGAE

PLVEGEVAGRGGLEGGHPGALGRLHSGEHDGAAQTLALVVRDADGGQEPRGLLGPV

RRQEA FHLLLRGQP GTAQLGHARADLGEHRPRFDALRRGPDRHRGAVVRDPHLADVEP

DAREEEFLQLGDPLDVAVRVDGVARGGVVGERGGEGAYGPGDVVAGGEAHRGLVLGHG
        RSPCEGSGAWVRGWRRHSWRPTCRHASYPARAARGICCNL*"
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        /ApEinfo_revcolor=#ffffcc
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misc_feature    95..115
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        /ApEinfo_label=New Feature
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
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        width 5 offset 0
CDS            5014..6867
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width 5 offset 0
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    /ApEinfo_revcolor=#ff0003
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    /ApEinfo_revcolor=#ff0003
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width 5 offset 0
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    /label=garz-GF5
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
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    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    7495..7714
    /label=Phosphatidylinositol-phosphate binding(1)
    /ApEinfo_label=Phosphatidylinositol-phosphate binding
    /ApEinfo_fwdcolor=#ff81f0
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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width 5 offset 0
primer_bind    7921..7940
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width 5 offset 0
CDS            7715..8945
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width 5 offset 0
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width 5 offset 0
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width 5 offset 0
CDS            8946..8982
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width 5 offset 0
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               /label=garz-GF10
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/ApEinfo_fwdcolor=#ff00bd
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width 5 offset 0
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/label=Sec7 domain
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width 5 offset 0
misc_feature 7333..7335
/label=191A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
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width 5 offset 0
misc_feature 7488..7494
/label=Sec7 domain(1)
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width 5 offset 0
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/label=garz-GF12
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ORIGIN

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**pMT-V5-i713-Sec71**

LOCUS	pMT-V5-i713-Sec71	10266 bp ds-DNA	circular	28-FEB-2020
DEFINITION	pMT-puro Sequencing Result			
ORGANISM	other sequences; artificial sequences; vectors.			
COMMENT	pMT-vAX2m from 1 to 5573			
COMMENT	pMT-vSOG4m from 1 to 5126			
COMMENT	pMT-mSOGm_v4 from 1 to 5114			
COMMENT	ApEinfo:methylated:1			
FEATURES	Location/Qualifiers			
	misc_feature	complement(10177..10196)		

```
    /label=EBV_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    complement(10134..10151)
    /label=BGH_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    10094..10111
    /label=6xHis
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    10043..10084
    /label=V5
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS
    5014..9969
    /label=Sec71
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    9567..9567
    /label=T>G silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    10031..10036
```

```
    /label=ApaI GGGCC^C
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    7770..7789
    /label=sec71-GF6
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    7629..7629
    /label=A>G in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    4927..4932
    /label=KpnI
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
protein_bind    6733..7305
    /label=Sec7 domain
    /ApEinfo_fwdcolor=#0080ff
    /ApEinfo_revcolor=#0080ff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    9552..9552
    /label=C>T silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    7250..7273
```

```
    /label=Sec71-DRSC01893-F (8A10)
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    9054..9073
    /label=sec71-GF8
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    8509..8530
    /label=sec71-GF7
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    complement(8562..8583)
    /label=Sec71-GR3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    6069..6069
    /label=C>T confirmed in 40A 2013
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    10011..10030
    /label=New Feature
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    7557..7557
```

```

    /label=T>C in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    7668..7668
    /label=A>C in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    9662..9679
    /label=Sec71-GF10
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    7197..7215
    /label=Sec71-GF11
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    6797..6820
    /label=Sec71-GF12
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    7159..7161
    /label=M717(M194 in sec7 domain M>L = BFA-resistant)
    /label=M717L(BFA-resistant)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
```

```
primer_bind    6903..6925
               /label=Sec71-GF14
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   complement(7099..7121)
               /label=Sec71-crRNA7(Protospacer)
               /ApEinfo_fwdcolor=#ccff66
               /ApEinfo_revcolor=#ffff9f
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   7188..7207
               /label=Sec71-crRNA8 Protospacer
               /ApEinfo_fwdcolor=#ccff66
               /ApEinfo_revcolor=#ffffcc
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   7828..7828
               /label=T>C Val>Ala in FRT40A
               /ApEinfo_fwdcolor=#ccff66
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
CDS            7890..7890
               /label=Sec71-PA
               /ApEinfo_fwdcolor=#99ccff
               /ApEinfo_revcolor=#cde7f7
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
CDS            5977..5979
               /label=Sec71-PA(1)
               /ApEinfo_label=Sec71-PA
               /ApEinfo_fwdcolor=#99ccff
               /ApEinfo_revcolor=#cde7f7
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```



```
width 5 offset 0
misc_feature 9363..9363
  /label=T>C silent
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 8509..8530
  /label=Chang-F1
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 5568..5587
  /label=sec71-GF3
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 7890..7890
  /label=A>C silent
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS 6069..6069
  /label=Sec71-PA(2)
  /ApEinfo_label=Sec71-PA
  /ApEinfo_fwdcolor=#99ccff
  /ApEinfo_revcolor=#cde7f7
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS 6600..6600
  /label=Sec71-PA(3)
  /ApEinfo_label=Sec71-PA
  /ApEinfo_fwdcolor=#99ccff
```

```

/ApEinfo_revcolor=#cde7f7
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9447..9447
/label=G>A silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 7150..7152
/label=S191
/ApEinfo_fwdcolor=#66ff66
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9751..9751
/label=T>C silent(1)
/ApEinfo_label=T>C silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 6550..6569
/label=Sec71-GF5
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind complement(7726..7761)
/label=Sec71-DRSC01893-R
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9324..9324
/label=T>C silent(2)
```

```
    /ApEinfo_label=T>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    complement(9224..9245)
    /label=Chang-R1
    /ApEinfo_fwdcolor=#fb53d0
    /ApEinfo_revcolor=#fc5a5d
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    5924..5943
    /label=sec71-GF4
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    7039..7041
    /label=E677 (E740 in garz)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    6600..6600
    /label=G>A silent(1)
    /ApEinfo_label=G>A silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    7147..7149
    /label=F190 F190Y=BFA-hypersensitive
    /label=F713Y(BFA-sensitive)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```

```
width 5 offset 0
misc_feature 7719..7719
  /label=A>G 40A
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 9336..9336
  /label=T>C in 40A(1)
  /ApEinfo_label=T>C in 40A
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind 5040..5057
  /label=GF9
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind complement(7375..7398)
  /label=Sec71-GR4
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind 8137..8155
  /label=Sec71-GF13
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 9970..9972
  /label=STOP
  /ApEinfo_fwdcolor=#66ccff
  /ApEinfo_revcolor=#00ff00
```

```
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
primer_bind    7073..7094
    /label=Sec71-GF15
    /ApEinfo_fwdcolor=#fb53d0
    /ApEinfo_revcolor=#fc5a5d
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    7099..7101
    /label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    7208..7210
    /label=PAM(1)
    /ApEinfo_label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    4942..4983
    /label=V5(1)
    /ApEinfo_label=V5
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    4984..4989
    /label=SpeI
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    4990..5013
    /label=Linker GL3
```

```

    /ApEinfo_fwdcolor=#ffcc66
    /ApEinfo_revcolor=#ffcc66
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    4892..4909
    /label=Metallothionein_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    complement(4327..4482)
    /label=lacZ_a
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
promoter        4463..4479
    /label=M13_forward20_primer
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    4448..4470
    /label=M13_pUC_fwd_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    complement(4113..4135)
    /label=pGEX_3_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
promoter        complement(3926..3954)
    /label=AmpR_promoter
```

```

    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
gene      complement(3024..3884)
          /gene="Ampicillin"
          /label=Ampicillin
          /ApEinfo_fwdcolor=#ffffcc
          /ApEinfo_revcolor=#ffffcc
          /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
rep_origin complement(2250..2869)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTMPVAMATTLRKLTTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
EIGASLIKHW*"
          /label=pBR322_origin
          /ApEinfo_fwdcolor=pink
          /ApEinfo_revcolor=pink
          /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
promoter  complement(1912..1941)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
```

```
DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL

LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=lac_promoter
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    complement(1876..1898)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY

IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE

YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHSVTRL

DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL

LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=M13_pUC_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
promoter        complement(1859..1877)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY

IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE

YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHSVTRL

DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
```



```
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=M13_reverse_primer
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    4489..4856
    /label=MT-promoter
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    complement(1350..1708)
    /label=Copia Promoter?
    /ApEinfo_fwdcolor=#cde7f7
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    4462..4479
    /label=M13-fwd
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    complement(1859..1879)
    /label=M13-rev
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
rep_origin     complement(2247..2929)
    /label=ColE1 origin
    /ApEinfo_fwdcolor=gray50
    /ApEinfo_revcolor=gray50
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```

```
width 5 offset 0
CDS      complement(4323..4391)
        /label=LacZ alpha
        /ApEinfo_fwdcolor=#6495ed
        /ApEinfo_revcolor=#6495ed
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_binding  complement(1885..1907)
        /label=Lac0
        /ApEinfo_fwdcolor=#6495ed
        /ApEinfo_revcolor=#6495ed
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS      complement(3027..3686)
        /label=AmpR
        /ApEinfo_fwdcolor=yellow
        /ApEinfo_revcolor=yellow
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind  4436..4459
        /label=M13F
        /ApEinfo_fwdcolor=#0a00ff
        /ApEinfo_revcolor=#0a00ff
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind  4462..4479
        /label=M13F_GW
        /ApEinfo_fwdcolor=#ff00bd
        /ApEinfo_revcolor=#ff0003
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind  complement(1859..1879)
        /label=M13R_GW
        /ApEinfo_fwdcolor=#ff00bd
        /ApEinfo_revcolor=#ff0003
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```

```
width 5 offset 0
primer_bind    3998..4015
               /label=pQE60-F
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    complement(3605..3629)
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/ApEinfo_fwdcolor=#ffcc66
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 8041..8043
/label=E677 (E740 in garz)
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
regulatory 5029..5038
/regulatory_class="other"
/note="vertebrate consensus sequence for strong
initiation
of translation (Kozak, 1987)"
/label=vertebrate consensus sequence for strong
initiation
of translation (Kozak, 1987)
/ApEinfo_fwdcolor=pink
/ApEinfo_revcolor=pink
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 7602..7602
/label=G>A silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature complement(225..1250)
```

```

        /label=Hyg
        /ApEinfo_fwdcolor=#ffffcc
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
gene      complement(143..173)
        /gene="puro (variant)"

/translation="MGSCAPFGRALRVVGRASGTGLAGHAPGARSFGHLDVGGDGEAE
PLVEGEVAGRGGLEGGHPGALGRLHSGEHDGAAQTLALVVRDADGGQEPRGLLGPV
RRQEAFHLLLRGQPGTAQLGHARADLGEHRPRFDALRRGPDRHRGAVVRDPHLADVEP
DAREEEFLQLGDPLDVAVRVDGVARGGVVGERGGEGAYGPGDVVAGGEAHRGLVLGHG
        RSSPCEGSRAWVRGWRHRSWRPTCRHASYRIPAARGICCNL*"
        /label=puro (variant)
        /ApEinfo_fwdcolor=#ffffcc
        /ApEinfo_revcolor=#ffffcc
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature 95..115
        /label=New Feature
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
promoter  4463..4479
        /label=M13_forward20_primer
        /ApEinfo_fwdcolor=#ccffed
        /ApEinfo_revcolor=#ccffed
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature 4448..4470
        /label=M13_pUC_fwd_primer
        /ApEinfo_fwdcolor=#ff3600
```

```

    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
promoter    complement(3926..3954)
    /label=AmpR_promoter
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
rep_origin  complement(2250..2869)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=pBR322_origin
    /ApEinfo_fwdcolor=pink
    /ApEinfo_revcolor=pink
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS        6016..10971
    /label=Sec71
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature complement(1876..1898)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
```

```
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE

YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHSVTRL

DRWEPELNEAIPNDERDTMPVAMATTLRKLTLGELLTLASRQQLIDWMEADKVAGPL

LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=M13_pUC_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    complement(1350..1708)
    /label=Copia Promoter?
    /ApEinfo_fwdcolor=#cde7f7
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    10569..10569
    /label=T>G silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    complement(4327..4482)
    /label=lacZ_a
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    complement(4113..4135)
    /label=pGEX_3_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
```

```
width 5 offset 0
primer_bind    8772..8791
               /label=sec71-GF6
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
gene           complement(3024..3884)
               /gene="Ampicillin"
               /label=Ampicillin
               /ApEinfo_fwdcolor=#ffffcc
               /ApEinfo_revcolor=#ffffcc
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
promoter       complement(1912..1941)

/translacion="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHSVTRL
DRWEPELNEAIPNDERDTMPVAMATTLRKLTLGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
EIGASLIKHW*"
               /label=lac_promoter
               /ApEinfo_fwdcolor=#ccffed
               /ApEinfo_revcolor=#ccffed
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature   8631..8631
               /label=A>G in 40A
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```



```
width 5 offset 0
promoter complement(1859..1877)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
EIGASLIKHW*"
/label=M13_reverse_primer
/ApEinfo_fwdcolor=#ccffed
/ApEinfo_revcolor=#ccffed
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 4489..4856
/label=MT-promoter
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
protein_bind 7735..8307
/label=Sec7 domain
/ApEinfo_fwdcolor=#0080ff
/ApEinfo_revcolor=#0080ff
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS complement(4323..4391)
/label=LacZ alpha
/ApEinfo_fwdcolor=#6495ed
/ApEinfo_revcolor=#6495ed
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
```

```
primer_bind    3998..4015
               /label=pQE60-F
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   10554..10554
               /label=C>T silent
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    complement(1859..1879)
               /label=M13R_GW
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    complement(1859..1879)
               /label=M13-rev
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=green
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    8252..8275
               /label=Sec71-DRSC01893-F (8A10)
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    4462..4479
               /label=M13-fwd
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=green
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
```

```
primer_bind    4436..4459
               /label=M13F
               /ApEinfo_fwdcolor=#0a00ff
               /ApEinfo_revcolor=#0a00ff
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    10056..10075
               /label=sec71-GF8
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    4832..4849
               /label=SEQ-MT-F2
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
rep_origin     complement(2247..2929)
               /label=ColE1 origin
               /ApEinfo_fwdcolor=gray50
               /ApEinfo_revcolor=gray50
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    9511..9532
               /label=sec71-GF7
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
CDS            complement(3027..3686)
               /label=AmpR
               /ApEinfo_fwdcolor=yellow
               /ApEinfo_revcolor=yellow
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
```

```
misc_binding    complement(1885..1907)
                /label=Lac0
                /ApEinfo_fwdcolor=#6495ed
                /ApEinfo_revcolor=#6495ed
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind     complement(9564..9585)
                /label=Sec71-GR3
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind     complement(3605..3629)
                /label=Amp-GF
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind     3147..3170
                /label=Amp-GR1
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature    7071..7071
                /label=C>T confirmed in 40A 2013
                /ApEinfo_fwdcolor=cyan
                /ApEinfo_revcolor=#00ff00
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind     4462..4479
                /label=M13F_GW
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
```

```
primer_bind    1737..1759
               /label=Seq-EB-R
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   8559..8559
               /label=T>C in 40A
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   1254..1268
               /label=New Feature(1)
               /ApEinfo_label=New Feature
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   8670..8670
               /label=A>C in 40A
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    8199..8217
               /label=Sec71-GF11
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    7799..7822
               /label=Sec71-GF12
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```

```
width 5 offset 0
misc_feature 8161..8163
  /label=M717(M194 in sec7 domain M>L = BFA-resistant)
  /label=M717L(BFA-resistant)
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 7905..7927
  /label=Sec71-GF14
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature complement(8101..8123)
  /label=Sec71-crRNA7(Protospacer)
  /ApEinfo_fwdcolor=#ccff66
  /ApEinfo_revcolor=#ffff9f
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 8190..8209
  /label=Sec71-crRNA8 Protospacer
  /ApEinfo_fwdcolor=#ccff66
  /ApEinfo_revcolor=#ffffcc
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 8830..8830
  /label=T>C Val>Ala in FRT40A
  /ApEinfo_fwdcolor=#ccff66
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS 8892..8892
  /label=Sec71-PA
  /ApEinfo_fwdcolor=#99ccff
  /ApEinfo_revcolor=#cde7f7
```

```

    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS      6979..6981
    /label=Sec71-PA(1)
    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature  10365..10365
    /label=T>C silent(1)
    /ApEinfo_label=T>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature  9511..9532
    /label=Chang-F1
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind  6570..6589
    /label=sec71-GF3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature  8892..8892
    /label=A>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS      7071..7071
    /label=Sec71-PA(2)
```

```

    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS      7602..7602
    /label=Sec71-PA(3)
    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature  10449..10449
    /label=G>A silent(1)
    /ApEinfo_label=G>A silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature  10753..10753
    /label=T>C silent(2)
    /ApEinfo_label=T>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind  7552..7571
    /label=Sec71-GF5
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind  complement(8728..8763)
    /label=Sec71-DRSC01893-R
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
```



```

    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8149..8151
    /label=F190 F190Y=BFA-hypersensitive
    /label=F713Y(BFA-sensitive)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8721..8721
    /label=A>G 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    10338..10338
    /label=T>C in 40A(1)
    /ApEinfo_label=T>C in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    6042..6059
    /label=GF9
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    complement(8377..8400)
    /label=Sec71-GR4
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    9139..9157
    /label=Sec71-GF13
```

```
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    10972..10974
    /label=STOP
    /ApEinfo_fwdcolor=#66ccff
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    8075..8096
    /label=Sec71-GF15
    /ApEinfo_fwdcolor=#fb53d0
    /ApEinfo_revcolor=#fc5a5d
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8101..8103
    /label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8210..8212
    /label=PAM(1)
    /ApEinfo_label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    complement(11179..11198)
    /label=EBV_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    complement(11136..11153)
```

```

        /label=BGH_rev_primer
        /ApEinfo_fwdcolor=#ff3600
        /ApEinfo_revcolor=#ff3600
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature 11096..11113
        /label=6xHis
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature 11045..11086
        /label=V5(1)
        /ApEinfo_label=V5
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature 11013..11032
        /label=New Feature(2)
        /ApEinfo_label=New Feature
        /ApEinfo_fwdcolor=#ffffcc
        /ApEinfo_revcolor=#ffffcc
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    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 8509..8530
    /label=sec71-GF7
    /ApEinfo_fwdcolor=#ff00bd
```

```
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    complement(8562..8583)
    /label=Sec71-GR3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    6069..6069
    /label=C>T confirmed in 40A 2013
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    10011..10030
    /label=New Feature
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    7557..7557
    /label=T>C in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    7668..7668
    /label=A>C in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    9662..9679
    /label=Sec71-GF10
    /ApEinfo_fwdcolor=#ff00bd
```

```

    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    7197..7215
    /label=Sec71-GF11
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    6797..6820
    /label=Sec71-GF12
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    7159..7161
    /label=M717(M194 in sec7 domain M>L = BFA-resistant)
    /label=M717L atg>Ctg(BFA-resistant)
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    6903..6925
    /label=Sec71-GF14
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    complement(7099..7121)
    /label=Sec71-crRNA7(Protospacer)
    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#ffff9f
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    7188..7207
    /label=Sec71-crRNA8 Protospacer
```

```

/ApEinfo_fwdcolor=#ccff66
/ApEinfo_revcolor=#ffffcc
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 7828..7828
/label=T>C Val>Ala in FRT40A
/ApEinfo_fwdcolor=#ccff66
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS 7890..7890
/label=Sec71-PA
/ApEinfo_fwdcolor=#99ccff
/ApEinfo_revcolor=#cde7f7
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS 5977..5979
/label=Sec71-PA(1)
/ApEinfo_label=Sec71-PA
/ApEinfo_fwdcolor=#99ccff
/ApEinfo_revcolor=#cde7f7
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 9363..9363
/label=T>C silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 8509..8530
/label=Chang-F1
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind 5568..5587
```

```

        /label=sec71-GF3
        /ApEinfo_fwdcolor=#ff00bd
        /ApEinfo_revcolor=#ff0003
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature    7890..7890
        /label=A>C silent
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
CDS            6069..6069
        /label=Sec71-PA(2)
        /ApEinfo_label=Sec71-PA
        /ApEinfo_fwdcolor=#99ccff
        /ApEinfo_revcolor=#cde7f7
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
CDS            6600..6600
        /label=Sec71-PA(3)
        /ApEinfo_label=Sec71-PA
        /ApEinfo_fwdcolor=#99ccff
        /ApEinfo_revcolor=#cde7f7
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature    9447..9447
        /label=G>A silent
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature    7150..7152
        /label=S191
        /ApEinfo_fwdcolor=#66ff66
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```

```
width 5 offset 0
misc_feature 9751..9751
  /label=T>C silent(1)
  /ApEinfo_label=T>C silent
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 6550..6569
  /label=Sec71-GF5
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind complement(7726..7761)
  /label=Sec71-DRSC01893-R
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9324..9324
  /label=T>C silent(2)
  /ApEinfo_label=T>C silent
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind complement(9224..9245)
  /label=Chang-R1
  /ApEinfo_fwdcolor=#fb53d0
  /ApEinfo_revcolor=#fc5a5d
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 5924..5943
  /label=sec71-GF4
  /ApEinfo_fwdcolor=#ff00bd
```



```

/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 7039..7041
/ApEinfo_label=E677 (E740 in garz)
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 6600..6600
/ApEinfo_label=G>A silent(1)
/ApEinfo_label=G>A silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 7147..7149
/ApEinfo_label=F190 F190Y=BFA-hypersensitive
/ApEinfo_label=F713Y(BFA-sensitive)
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 7719..7719
/ApEinfo_label=A>G 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 9336..9336
/ApEinfo_label=T>C in 40A(1)
/ApEinfo_label=T>C in 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
```

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primer_bind    5040..5057
               /label=GF9
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    complement(7375..7398)
               /label=Sec71-GR4
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    8137..8155
               /label=Sec71-GF13
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   9970..9972
               /label=STOP
               /ApEinfo_fwdcolor=#66ccff
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    7073..7094
               /label=Sec71-GF15
               /ApEinfo_fwdcolor=#fb53d0
               /ApEinfo_revcolor=#fc5a5d
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature   7099..7101
               /label=PAM
               /ApEinfo_fwdcolor=#fc81f0
               /ApEinfo_revcolor=#fc81f0
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
```

```
misc_feature 7208..7210
  /label=PAM(1)
  /ApEinfo_label=PAM
  /ApEinfo_fwdcolor=#fc81f0
  /ApEinfo_revcolor=#fc81f0
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature 4942..4983
  /label=V5(1)
  /ApEinfo_label=V5
  /ApEinfo_fwdcolor=#ffffcc
  /ApEinfo_revcolor=#ffffcc
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature 4984..4989
  /label=SpeI
  /ApEinfo_fwdcolor=#ffffcc
  /ApEinfo_revcolor=#ffffcc
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature 4990..5013
  /label=Linker GL3
  /ApEinfo_fwdcolor=#ffcc66
  /ApEinfo_revcolor=#ffcc66
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature 4892..4909
  /label=Metallothionein_primer
  /ApEinfo_fwdcolor=#ff3600
  /ApEinfo_revcolor=#ff3600
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature complement(4327..4482)
  /label=lacZ_a
  /ApEinfo_fwdcolor=#ff3600
  /ApEinfo_revcolor=#ff3600
```

```
promoter      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
              width 5 offset 0
              4463..4479
              /label=M13_forward20_primer
              /ApEinfo_fwdcolor=#ccffed
              /ApEinfo_revcolor=#ccffed
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
              width 5 offset 0
misc_feature  4448..4470
              /label=M13_pUC_fwd_primer
              /ApEinfo_fwdcolor=#ff3600
              /ApEinfo_revcolor=#ff3600
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
              width 5 offset 0
misc_feature  complement(4113..4135)
              /label=pGEX_3_primer
              /ApEinfo_fwdcolor=#ff3600
              /ApEinfo_revcolor=#ff3600
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
              width 5 offset 0
promoter      complement(3926..3954)
              /label=AmpR_promoter
              /ApEinfo_fwdcolor=#ccffed
              /ApEinfo_revcolor=#ccffed
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
              width 5 offset 0
gene          complement(3024..3884)
              /gene="Ampicillin"
              /label=Ampicillin
              /ApEinfo_fwdcolor=#ffffcc
              /ApEinfo_revcolor=#ffffcc
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
              width 5 offset 0
rep_origin    complement(2250..2869)

/translacion="MSIQHFRVALIPFFAAFLPVFAHPETLVKVKDAEDQLGARVGY
```

```
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE

YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHVTRL

DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL

LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=pBR322_origin
    /ApEinfo_fwdcolor=pink
    /ApEinfo_revcolor=pink
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
    promoter      complement(1912..1941)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY

IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE

YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHVTRL

DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL

LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=lac_promoter
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
    misc_feature  complement(1876..1898)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY

IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
```

```
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHVTRL

DRWEPELNEAIPNDERDTTMPVAMATTLRKLTLGELLTLASRQQLIDWMEADKVAGPL

LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=M13_pUC_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
promoter      complement(1859..1877)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY

IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE

YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHVTRL

DRWEPELNEAIPNDERDTTMPVAMATTLRKLTLGELLTLASRQQLIDWMEADKVAGPL

LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
    /label=M13_reverse_primer
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature  4489..4856
    /label=MT-promoter
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature  complement(1350..1708)
```

```

    /label=Copia Promoter?
    /ApEinfo_fwdcolor=#cde7f7
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    4462..4479
    /label=M13-fwd
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    complement(1859..1879)
    /label=M13-rev
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
rep_origin    complement(2247..2929)
    /label=ColE1 origin
    /ApEinfo_fwdcolor=gray50
    /ApEinfo_revcolor=gray50
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS            complement(4323..4391)
    /label=LacZ alpha
    /ApEinfo_fwdcolor=#6495ed
    /ApEinfo_revcolor=#6495ed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_binding   complement(1885..1907)
    /label=Lac0
    /ApEinfo_fwdcolor=#6495ed
    /ApEinfo_revcolor=#6495ed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS            complement(3027..3686)
```

```

    /label=AmpR
    /ApEinfo_fwdcolor=yellow
    /ApEinfo_revcolor=yellow
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    4436..4459
    /label=M13F
    /ApEinfo_fwdcolor=#0a00ff
    /ApEinfo_revcolor=#0a00ff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    4462..4479
    /label=M13F_GW
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    complement(1859..1879)
    /label=M13R_GW
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    3998..4015
    /label=pQE60-F
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    complement(3605..3629)
    /label=Amp-GF
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    3147..3170
```



```

        /label=Amp-GR1
        /ApEinfo_fwdcolor=#ff00bd
        /ApEinfo_revcolor=#ff0003
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature    complement(225..1250)
        /label=Hyg
        /ApEinfo_fwdcolor=#ffffcc
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature    1254..1268
        /label=New Feature(1)
        /ApEinfo_label=New Feature
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
gene            complement(143..173)
        /gene="puro (variant)"

/translation="MGSCAPFGRALRVVGRASGTGLAGHAPGARSFGHLDVGGDGEAE

PLVEGEVAGRGLQEGGHPGALGRLHSGEHDGAAQTLALVVGRDADGGQEPRGLLGPV

RRQEA FHLLLRGQP GTAQLGHARADLGEHRPRFDALRRGPDRHRGAVVRDPHLADVEP

DAREEEFLQLGDPLDVAVRVDGVARGGVVGERGGEGAYGPGDVVAGGEAHRGLVLGHG
        RSSPCEGSGAWVRGWWRHRSWRPTCRHAS YRIPAARGICCNL*"
        /label=puro (variant)
        /ApEinfo_fwdcolor=#ffffcc
        /ApEinfo_revcolor=#ffffcc
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
        width 5 offset 0
misc_feature    95..115
        /label=New Feature(2)
```

```
/ApEinfo_label=New Feature  
/ApEinfo_fwdcolor=cyan  
/ApEinfo_revcolor=#00ff00  
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1} {} 0}  
width 5 offset 0
```

ORIGIN

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1 ataagctgca ataaacaagt tctagagtcg gtgggcctcg ggggcgggtg cggggtcggc  
61 ggggccgccc cgggtggctt cggtcggagc catggggtcg tgcgctcctt tcggtcgggc  
121 gctgcgggtc gtggggcggg cgtcaggcac cgggcttgcg ggtcatgcac cagttgctgg  
181 ctgaggcggt ctcgaaatca gctcttgctt ggtcggcatc tactctattc ctttgcctc  
241 ggacgagtg cggggcgctg gtttccacta tcggcgagta cttctacaca gccatcggtc  
301 cagacggccg cgcttctgcg ggcgatttgt gtacgcccga cagtcccggc tccggatcgg  
361 acgattgcgt cgcacgacc ctgcgcccga gctgcatcat cgaaattgcc gtcaaccaag  
421 ctctgataga gttggtcaag accaatgcgg agcatatacg cccggagccg cggcgatcct  
481 gcaagctccg gatgcctccg ctggaagtag cgcgtctgct gctccataca agccaaccac  
541 ggcctccaga agaagatggt ggcgacctcg tattgggaat ccccgaacat cgcctcgctc  
601 cagtcaatga ccgctgttat gcggccattg tccgtcagga cattgttggg gccgaaatcc  
661 gcgtgcacga ggtgccggac ttcggggcag tcctcggccc aaagcatcag ctcatcgaga  
721 gcctgcgcga cggacgcact gacggtgctg tccatcacag tttgccagtg atacacatgg  
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                                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                                width 5 offset 0
promoter      complement(1859..1877)

/translacion="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
```

```
EIGASLIKHW*"
  /label=M13_reverse_primer
  /ApEinfo_fwdcolor=#ccffed
  /ApEinfo_revcolor=#ccffed
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 4489..4856
  /label=MT-promoter
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
protein_bind 7735..8307
  /label=Sec7 domain
  /ApEinfo_fwdcolor=#0080ff
  /ApEinfo_revcolor=#0080ff
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS complement(4323..4391)
  /label=LacZ alpha
  /ApEinfo_fwdcolor=#6495ed
  /ApEinfo_revcolor=#6495ed
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 3998..4015
  /label=pQE60-F
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 10554..10554
  /label=C>T silent
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
```

```
primer_bind    complement(1859..1879)
               /label=M13R_GW
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    complement(1859..1879)
               /label=M13-rev
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=green
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    8252..8275
               /label=Sec71-DRSC01893-F (8A10)
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    4462..4479
               /label=M13-fwd
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=green
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    4436..4459
               /label=M13F
               /ApEinfo_fwdcolor=#0a00ff
               /ApEinfo_revcolor=#0a00ff
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    10056..10075
               /label=sec71-GF8
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
```

```
primer_bind    4832..4849
               /label=SEQ-MT-F2
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
rep_origin     complement(2247..2929)
               /label=ColE1 origin
               /ApEinfo_fwdcolor=gray50
               /ApEinfo_revcolor=gray50
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    9511..9532
               /label=sec71-GF7
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
CDS            complement(3027..3686)
               /label=AmpR
               /ApEinfo_fwdcolor=yellow
               /ApEinfo_revcolor=yellow
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_binding   complement(1885..1907)
               /label=Lac0
               /ApEinfo_fwdcolor=#6495ed
               /ApEinfo_revcolor=#6495ed
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    complement(9564..9585)
               /label=Sec71-GR3
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
```

```
primer_bind    complement(3605..3629)
                /label=Amp-GF
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind    3147..3170
                /label=Amp-GR1
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature   7071..7071
                /label=C>T confirmed in 40A 2013
                /ApEinfo_fwdcolor=cyan
                /ApEinfo_revcolor=#00ff00
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind    4462..4479
                /label=M13F_GW
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind    1737..1759
                /label=Seq-EB-R
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature   8559..8559
                /label=T>C in 40A
                /ApEinfo_fwdcolor=cyan
                /ApEinfo_revcolor=#00ff00
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
```

```
misc_feature 1254..1268
  /label=New Feature(1)
  /ApEinfo_label=New Feature
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature 8670..8670
  /label=A>C in 40A
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature complement(11179..11198)
  /label=EBV_rev_primer
  /ApEinfo_fwdcolor=#ff3600
  /ApEinfo_revcolor=#ff3600
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature complement(11136..11153)
  /label=BGH_rev_primer
  /ApEinfo_fwdcolor=#ff3600
  /ApEinfo_revcolor=#ff3600
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature 11096..11113
  /label=6xHis
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0

misc_feature 11045..11086
  /label=V5
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
```



```
width 5 offset 0
misc_feature 11013..11032
  /label=New Feature(2)
  /ApEinfo_label=New Feature
  /ApEinfo_fwdcolor=#ffffcc
  /ApEinfo_revcolor=#ffffcc
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 11033..11038
  /label=ApaI GGGCC^C
  /ApEinfo_fwdcolor=#ffffcc
  /ApEinfo_revcolor=#ffffcc
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 5995..6015
  /label=Linker GL3
  /ApEinfo_fwdcolor=#ffcc66
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 5992..5994
  /label=Linker GL3(1)
  /ApEinfo_label=Linker GL3
  /ApEinfo_fwdcolor=#ffcc66
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 8152..8154
  /label=S191
  /ApEinfo_fwdcolor=#66ff66
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS 5035..5982
  /codon_start=1
  /product="phytochrome-based near-infrared fluorescent
```

```
protein, originally termed iRFP (Filonov et al., 2011)"
/note="name was changed to iRFP713 (Shcherbakova and
Verkhusha, 2013)"

/translation="MAEGSVARQPDLLTCDEPIHIPGAIQPHGLLLALAADMTIVAG
S

DNLPELTGLAIGALIGRSAADVFDSETHNRLTIALAEPGAAVGAPITVGFTMRKDAGF
I

GSWHRHDQLIFLELEPPQRDVAEPQAFFRRTNSAIRRLQAAETLESACAAAAQEVKRI
T

GFDRVMIYRFASDFSGEVIAEDRCAEVESKLGHPASTVPAQARRLYTINPVRIIPD
I

NYRPVPVTPDLNPVTGRPIDLSFAILRSVSPVHLEFMRNIGMGTMSISILRGERLWG
L IVCHHRTPYYVDLDGRQACELVAQVLAWQIGVMEE"
/label=iRFP713
/ApEinfo_fwdcolor=#9a69fe
/ApEinfo_revcolor=#cde7f7
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 10326..10326
/label=T>C silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 4942..4983
/label=V5(1)
/ApEinfo_label=V5
/ApEinfo_fwdcolor=#ffffcc
/ApEinfo_revcolor=#ffffcc
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
```

```
primer_bind    complement(10226..10247)
               /label=Chang-R1
               /ApEinfo_fwdcolor=#fb53d0
               /ApEinfo_revcolor=#fc5a5d
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature    4984..4989
               /label=SpeI
               /ApEinfo_fwdcolor=#ffffcc
               /ApEinfo_revcolor=#ffffcc
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
primer_bind    6926..6945
               /label=sec71-GF4
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature    4990..5013
               /label=Linker GL3(2)
               /ApEinfo_label=Linker GL3
               /ApEinfo_fwdcolor=#ffcc66
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
misc_feature    8041..8043
               /label=E677 (E740 in garz)
               /ApEinfo_fwdcolor=cyan
               /ApEinfo_revcolor=#00ff00
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
               width 5 offset 0
regulatory     5029..5038
               /regulatory_class="other"
               /note="vertebrate consensus sequence for strong
initiation
               of translation (Kozak, 1987)"
```

```

        /label=vertebrate consensus sequence for strong
initiation
        of translation (Kozak, 1987)
        /ApEinfo_fwdcolor=pink
        /ApEinfo_revcolor=pink
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
        width 5 offset 0
misc_feature    7602..7602
        /label=G>A silent
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
        width 5 offset 0
primer_bind    8199..8217
        /label=Sec71-GF11
        /ApEinfo_fwdcolor=#ff00bd
        /ApEinfo_revcolor=#ff0003
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
        width 5 offset 0
primer_bind    7799..7822
        /label=Sec71-GF12
        /ApEinfo_fwdcolor=#ff00bd
        /ApEinfo_revcolor=#ff0003
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
        width 5 offset 0
misc_feature    8161..8163
        /label=M717(M194 in sec7 domain M>L = BFA-resistant)
        /label=M717L atg>Ctg(BFA-resistant)
        /ApEinfo_fwdcolor=cyan
        /ApEinfo_revcolor=#00ff00
        /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
        width 5 offset 0
primer_bind    7905..7927
        /label=Sec71-GF14
        /ApEinfo_fwdcolor=#ff00bd
        /ApEinfo_revcolor=#ff0003
```

```
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    complement(8101..8123)
    /label=Sec71-crRNA7(Protospacer)
    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#ffff9f
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    8190..8209
    /label=Sec71-crRNA8 Protospacer
    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    8830..8830
    /label=T>C Val>Ala in FRT40A
    /ApEinfo_fwdcolor=#ccff66
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
CDS            8892..8892
    /label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
CDS            6979..6981
    /label=Sec71-PA(1)
    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    10365..10365
    /label=T>C silent(1)
    /ApEinfo_label=T>C silent
```

```

/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 9511..9532
/label=Chang-F1
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 6570..6589
/label=sec71-GF3
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 8892..8892
/label=A>C silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS 7071..7071
/label=Sec71-PA(2)
/ApEinfo_label=Sec71-PA
/ApEinfo_fwdcolor=#99ccff
/ApEinfo_revcolor=#cde7f7
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS 7602..7602
/label=Sec71-PA(3)
/ApEinfo_label=Sec71-PA
/ApEinfo_fwdcolor=#99ccff
/ApEinfo_revcolor=#cde7f7
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
```

```
misc_feature    10449..10449
                /label=G>A silent(1)
                /ApEinfo_label=G>A silent
                /ApEinfo_fwdcolor=cyan
                /ApEinfo_revcolor=#00ff00
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature    10753..10753
                /label=T>C silent(2)
                /ApEinfo_label=T>C silent
                /ApEinfo_fwdcolor=cyan
                /ApEinfo_revcolor=#00ff00
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind     7552..7571
                /label=Sec71-GF5
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
primer_bind     complement(8728..8763)
                /label=Sec71-DRSC01893-R
                /ApEinfo_fwdcolor=#ff00bd
                /ApEinfo_revcolor=#ff0003
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature    8149..8151
                /label=F190 F190Y=BFA-hypersensitive
                /label=F713Y(BFA-sensitive)
                /ApEinfo_fwdcolor=cyan
                /ApEinfo_revcolor=#00ff00
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature    8721..8721
                /label=A>G 40A
                /ApEinfo_fwdcolor=cyan
```

```

/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 10338..10338
/label=T>C in 40A(1)
/ApEinfo_label=T>C in 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 6042..6059
/label=GF9
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind complement(8377..8400)
/label=Sec71-GR4
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 9139..9157
/label=Sec71-GF13
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 10972..10974
/label=STOP
/ApEinfo_fwdcolor=#66ccff
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 8075..8096
/label=Sec71-GF15
```



```
    /ApEinfo_fwdcolor=#fb53d0
    /ApEinfo_revcolor=#fc5a5d
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8101..8103
    /label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
misc_feature    8210..8212
    /label=PAM(1)
    /ApEinfo_label=PAM
    /ApEinfo_fwdcolor=#fc81f0
    /ApEinfo_revcolor=#fc81f0
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    10664..10681
    /label=Sec71-GF10
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
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ORIGIN

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1 ataagctgca ataaacaagt tctagagtcg gtgggcctcg ggggcgggtg cggggtcggc
61 ggggccgcc cgggtggctt cggtcggagc catggggtcg tgcgctcctt tcggtcgggc
121 gctgcgggtc gtggggcggg cgtcaggcac cgggcttgcg ggtcatgcac cagttgctgg
181 ctgaggcggtt ctcgaaatca gctcttgttc ggtcggcatc tactctattc ctttgcctc
241 ggacgagtgc tggggcgtcg gtttccacta tcggcgagta cttctacaca gccatcggtc
301 cagacggccg cgcttctgcg ggcgatttgt gtacgcccgga cagtcccggc tccggatcgg
361 acgattgcgt cgcacgacc ctgcgccca gctgcatcat cgaaattgcc gtcaaccaag
421 ctctgataga gttggtcaag accaatgcgg agcatatacg cccggagccg cggcgatcct
481 gcaagctccg gatgcctccg ctggaagtag cgcgtctgct gtcctataca agccaaccac
541 ggcctccaga agaagatggt ggcgacctcg tattgggaat ccccgaacat cgcctcgctc
601 cagtcaatga ccgctgttat gcggccattg tccgtcagga cattgttggg gccgaaatcc
661 gcgtgcacga ggtgccggac ttcggggcag tcctcggccc aaagcatcag ctcatcgaga
```

721 gcctgcgcga cggacgcact gacggtgtcg tccatcacag tttgccagtg atacacatgg  
781 ggatcagcaa tcgcgcataat gaaatcacgc catgtagtgt attgaccgat tccttgcggt  
841 ccgaatgggc cgaacccgct cgtctggcta agatcggccg cagcgatcgc atccatggcc  
901 tccgcgaccg gctgcagaac agcgggcagt tcggtttcag gcaggctctg caacgtgaca  
961 ccctgtgcac ggcgggagat gcaataggtc aggctctcgc tgaattcccc aatgtcaagc  
1021 acttccggaa tcgggagcgc ggccgatgca aagtgccgat aaacataacg atctttgtag  
1081 aaaccatcgg cgcagctatt taccgcagg acatatccac gccctctac atcgaagctg  
1141 aaagcacgag attcttcgcc ctccgagagc tgcatacagg cggagacgct gtcgaacttt  
1201 tcgatcagaa acttctcgac agacgtcgcg gtgagttcag gctttttcat ggtggtcgtc  
1261 tccttgtgag gggtcagggg cgtgggtcag gggatggtgg cggcaccggt cgtggcggcc  
1321 gacctgcagg catgcaagct atcgaattcc tgcagcccgg gggatctgtt gtaatttata  
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YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
      EIGASLIKHW*"
      /label=lac_promoter
      /ApEinfo_fwdcolor=#ccffed
      /ApEinfo_revcolor=#ccffed
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
misc_feature   8631..8631
      /label=A>G in 40A
      /ApEinfo_fwdcolor=cyan
      /ApEinfo_revcolor=#00ff00
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
promoter      complement(1859..1877)

/translation="MSIQHFRVALIPFFAAFCLPVFAHPETLVKVKDAEDQLGARVGY
IELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVE
YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
      EIGASLIKHW*"
      /label=M13_reverse_primer
```

```

    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    4489..4856
    /label=MT-promoter
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
protein_bind    7735..8307
    /label=Sec7 domain
    /ApEinfo_fwdcolor=#0080ff
    /ApEinfo_revcolor=#0080ff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
CDS             complement(4323..4391)
    /label=LacZ alpha
    /ApEinfo_fwdcolor=#6495ed
    /ApEinfo_revcolor=#6495ed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
primer_bind     3998..4015
    /label=pQE60-F
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature    10554..10554
    /label=C>T silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
primer_bind     complement(1859..1879)
    /label=M13R_GW
```

```
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    complement(1859..1879)
    /label=M13-rev
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    8252..8275
    /label=Sec71-DRSC01893-F (8A10)
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    4462..4479
    /label=M13-fwd
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    4436..4459
    /label=M13F
    /ApEinfo_fwdcolor=#0a00ff
    /ApEinfo_revcolor=#0a00ff
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    10056..10075
    /label=sec71-GF8
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
    width 5 offset 0
primer_bind    4832..4849
    /label=SEQ-MT-F2
```

```

    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
rep_origin    complement(2247..2929)
    /label=ColE1 origin
    /ApEinfo_fwdcolor=gray50
    /ApEinfo_revcolor=gray50
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind   9511..9532
    /label=sec71-GF7
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS           complement(3027..3686)
    /label=AmpR
    /ApEinfo_fwdcolor=yellow
    /ApEinfo_revcolor=yellow
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_binding  complement(1885..1907)
    /label=Lac0
    /ApEinfo_fwdcolor=#6495ed
    /ApEinfo_revcolor=#6495ed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind   complement(9564..9585)
    /label=Sec71-GR3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind   complement(3605..3629)
    /label=Amp-GF
```

```
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    3147..3170
    /label=Amp-GR1
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    7071..7071
    /label=C>T confirmed in 40A 2013
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    4462..4479
    /label=M13F_GW
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind    1737..1759
    /label=Seq-EB-R
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    8559..8559
    /label=T>C in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature    1254..1268
    /label=New Feature(1)
```

```

    /ApEinfo_label=New Feature
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 8670..8670
    /label=A>C in 40A
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature complement(11179..11198)
    /label=EBV_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature complement(11136..11153)
    /label=BGH_rev_primer
    /ApEinfo_fwdcolor=#ff3600
    /ApEinfo_revcolor=#ff3600
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 11096..11113
    /label=6xHis
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 11045..11086
    /label=V5
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 11013..11032
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    /label=New Feature(2)
    /ApEinfo_label=New Feature
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 11033..11038
    /label=ApaI GGGCC^C
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 5995..6015
    /label=Linker GL3
    /ApEinfo_fwdcolor=#ffcc66
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 5992..5994
    /label=Linker GL3(1)
    /ApEinfo_label=Linker GL3
    /ApEinfo_fwdcolor=#ffcc66
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 8152..8154
    /label=S191
    /ApEinfo_fwdcolor=#66ff66
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
CDS 5035..5982
    /codon_start=1
    /product="phytochrome-based near-infrared fluorescent
protein, originally termed iRFP (Filonov et al., 2011)"
    /note="name was changed to iRFP713 (Shcherbakova and
```

```
Verkhusha, 2013)"  
  
/translation="MAEGSVARQPDLLTCDEPIHIPGAIQPHGLLLALAADMTIVAG  
S  
DNLPELTGLAIGALIGRSAADVFDSETHNRLTIALAEPGAAVGAPITVGFTMRKDAGF  
I  
GSWHRHDQLIFLELEPPQRDVAEPQAFFRRTNSAIRRLQAAETLESACAAAAQEVRKI  
T  
GFDRVMIYRFASDFSGEVIAEDRCAEVESKLGHLHPASTVPAQARRLYTINPVRIIPD  
I  
NYRPVPVTPDLNPVTGRPIDLSFAILRSVSPVHLEFMRNIGMGTMSISILRGERLWG  
L IVCHHRTPYYVDLDGRQACELVAQVLAWQIGVMEE"  
/label=iRFP713  
/ApEinfo_fwdcolor=#9a69fe  
/ApEinfo_revcolor=#cde7f7  
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}  
width 5 offset 0  
misc_feature 10326..10326  
/label=T>C silent  
/ApEinfo_fwdcolor=cyan  
/ApEinfo_revcolor=#00ff00  
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}  
width 5 offset 0  
misc_feature 4942..4983  
/label=V5(1)  
/ApEinfo_label=V5  
/ApEinfo_fwdcolor=#ffffcc  
/ApEinfo_revcolor=#ffffcc  
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}  
width 5 offset 0  
primer_bind complement(10226..10247)  
/label=Chang-R1
```

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/ApEinfo_fwdcolor=#fb53d0
/ApEinfo_revcolor=#fc5a5d
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 4984..4989
/label=SpeI
/ApEinfo_fwdcolor=#ffffcc
/ApEinfo_revcolor=#ffffcc
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind 6926..6945
/label=sec71-GF4
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 4990..5013
/label=Linker GL3(2)
/ApEinfo_label=Linker GL3
/ApEinfo_fwdcolor=#ffcc66
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 8041..8043
/label=E677 (E740 in garz)
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
regulatory 5029..5038
/regulatory_class="other"
/note="vertebrate consensus sequence for strong
initiation
of translation (Kozak, 1987)"
/label=vertebrate consensus sequence for strong
initiation
```

```
of translation (Kozak, 1987)
/ApEinfo_fwdcolor=pink
/ApEinfo_revcolor=pink
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 7602..7602
/label=G>A silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 8199..8217
/label=Sec71-GF11
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 7799..7822
/label=Sec71-GF12
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 8161..8163
/label=M717(M194 in sec7 domain M>L = BFA-resistant)
/label=M717L atg>Ctg(BFA-resistant)
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 7905..7927
/label=Sec71-GF14
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
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misc_feature    complement(8101..8123)
                /label=Sec71-crRNA7(Protospacer)
                /ApEinfo_fwdcolor=#ccff66
                /ApEinfo_revcolor=#ffff9f
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature    8190..8209
                /label=Sec71-crRNA8 Protospacer
                /ApEinfo_fwdcolor=#ccff66
                /ApEinfo_revcolor=#ffffcc
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature    8830..8830
                /label=T>C Val>Ala in FRT40A
                /ApEinfo_fwdcolor=#ccff66
                /ApEinfo_revcolor=#00ff00
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
CDS             8892..8892
                /label=Sec71-PA
                /ApEinfo_fwdcolor=#99ccff
                /ApEinfo_revcolor=#cde7f7
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
CDS             6979..6981
                /label=Sec71-PA(1)
                /ApEinfo_label=Sec71-PA
                /ApEinfo_fwdcolor=#99ccff
                /ApEinfo_revcolor=#cde7f7
                /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
                width 5 offset 0
misc_feature    10365..10365
                /label=T>C silent(1)
                /ApEinfo_label=T>C silent
                /ApEinfo_fwdcolor=cyan
                /ApEinfo_revcolor=#00ff00
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    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    9511..9532
    /label=Chang-F1
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    6570..6589
    /label=sec71-GF3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    8892..8892
    /label=A>C silent
    /ApEinfo_fwdcolor=cyan
    /ApEinfo_revcolor=#00ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS             7071..7071
    /label=Sec71-PA(2)
    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS             7602..7602
    /label=Sec71-PA(3)
    /ApEinfo_label=Sec71-PA
    /ApEinfo_fwdcolor=#99ccff
    /ApEinfo_revcolor=#cde7f7
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature    10449..10449
    /label=G>A silent(1)
```

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/ApEinfo_label=G>A silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 10753..10753
/label=T>C silent(2)
/ApEinfo_label=T>C silent
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind 7552..7571
/label=Sec71-GF5
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
primer_bind complement(8728..8763)
/label=Sec71-DRSC01893-R
/ApEinfo_fwdcolor=#ff00bd
/ApEinfo_revcolor=#ff0003
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 8149..8151
/label=F190 F190Y=BFA-hypersensitive
/label=F713Y(BFA-sensitive)
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
width 5 offset 0
misc_feature 8721..8721
/label=A>G 40A
/ApEinfo_fwdcolor=cyan
/ApEinfo_revcolor=#00ff00
/ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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width 5 offset 0
misc_feature 10338..10338
  /label=T>C in 40A(1)
  /ApEinfo_label=T>C in 40A
  /ApEinfo_fwdcolor=cyan
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 6042..6059
  /label=GF9
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind complement(8377..8400)
  /label=Sec71-GR4
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 9139..9157
  /label=Sec71-GF13
  /ApEinfo_fwdcolor=#ff00bd
  /ApEinfo_revcolor=#ff0003
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
misc_feature 10972..10974
  /label=STOP
  /ApEinfo_fwdcolor=#66ccff
  /ApEinfo_revcolor=#00ff00
  /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind 8075..8096
  /label=Sec71-GF15
  /ApEinfo_fwdcolor=#fb53d0
  /ApEinfo_revcolor=#fc5a5d
```



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      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
misc_feature    8101..8103
      /label=PAM
      /ApEinfo_fwdcolor=#fc81f0
      /ApEinfo_revcolor=#fc81f0
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
misc_feature    8210..8212
      /label=PAM(1)
      /ApEinfo_label=PAM
      /ApEinfo_fwdcolor=#fc81f0
      /ApEinfo_revcolor=#fc81f0
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
primer_bind     10664..10681
      /label=Sec71-GF10
      /ApEinfo_fwdcolor=#ff00bd
      /ApEinfo_revcolor=#ff0003
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
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ORIGIN

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61 ggggccgcc cgggtggctt cggtcggagc catggggtcg tgcgctcctt tcggtcgggc
121 gctgcgggtc gtggggcggg cgtcaggcac cgggcttgcg ggtcatgcac cagttgctgg
181 ctgaggcggt ctcgaaatca gctcttgttc ggtcggcatc tactctattc ctttgcctc
241 ggacgagtg cggggcgctg gtttccacta tcggcgagta cttctacaca gccatcggtc
301 cagacggccg cgcttctgcg ggcgatttgt gtacgcccg cagtcccggc tccggatcgg
361 acgattgcgt cgcacgacc ctgcgccaa gctgcatcat cgaaattgcc gtcaaccaag
421 ctctgataga gttggtcaag accaatgcgg agcatatacg cccggagccg cggcgatcct
481 gcaagctccg gatgcctccg ctggaagtag cgcgtctgct gctccataca agccaaccac
541 ggcctccaga agaagatggt ggcgacctcg tattgggaat ccccgaacat cgcctcgctc
601 cagtcaatga ccgctgttat gcggccattg tccgtcagga cattgttggg gccgaaatcc
661 gcgtgcacga ggtgccggac ttcggggcag tcctcggccc aaagcatcag ctcatcgaga
721 gcctgcgcga cggacgcact gacggtgtcg tccatcacag tttgccagtg atacacatgg
781 ggatcagcaa tcgcgcatat gaaatcacgc catgtagtgt attgaccgat tccttgcggt
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841 ccgaatgggc cgaacccgct cgtctggcta agatcggccg cagcgatcgc atccatggcc  
901 tccgcgaccg gctgcagaac agcgggcagt tcggtttcag gcaggtcttg caacgtgaca  
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CMV-ST::EGFP,

LOCUS CMV\_ST\_EGFP 4853 bp ds-DNA circular 28-FEB-2020

DEFINITION LAMP1-mGFP Sequencing Result

ORGANISM other sequences; artificial sequences; vectors.

COMMENT LAMP1\_mGFP(34831) from 1 to 6015

COMMENT ApEinfo:methylated:1

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pMT-GalT::EGFP					
LOCUS	pMT_GalT_EGFP	5661 bp	ds-DNA	circular	28-FEB-2020
DEFINITION	pMT-puro Sequencing Result				
ORGANISM	other sequences; artificial sequences; vectors.				
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pMT-ManII::EGFP

LOCUS pMT\_ManII\_EGFP 5805 bp ds-DNA circular 28-FEB-2020

DEFINITION pMT-puro Sequencing Result

ORGANISM other sequences; artificial sequences; vectors.

COMMENT pMT-puro from 1 to 4724

COMMENT ApEinfo:methylated:1

FEATURES Location/Qualifiers

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ORIGIN

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//

**pMT-ST::EGFP**

LOCUS pMT\_ST\_EGFP 5610 bp ds-DNA circular 28-FEB-2020

DEFINITION pMT-puro Sequencing Result

ORGANISM other sequences; artificial sequences; vectors.

COMMENT pMT-puro from 1 to 4724

COMMENT ApEinfo:methylated:1

FEATURES Location/Qualifiers

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2941 agctccttcg gtcctccgat cgttgtcaga agtaagtgg ccgcagtgtt atcactcatg  
3001 gttatggcag cactgcataa ttctcttact gtcatgcat ccgtaagatg cttttctgtg  
3061 actggtgagt actcaaccaa gtcattctga gaatagtgta tgcggcgacc gagttgctct  
3121 tgcccggcgt caatacggga taataccgcg ccacatagca gaactttaa agtgctcatc  
3181 attggaaac gttcttcggg gcgaaaactc tcaaggatct taccgctgtt gagatccagt  
3241 tcgatgtaac ccaactcgtc acccaactga tcttcagcat cttttacttt caccagcgtt  
3301 tctgggtgag caaaaacagg aaggcaaat gccgcaaaa agggaatAAG GCGACACGG  
3361 AAATGttgaa tactcatact cttccttttt caatattatt gaagcattta tcagggttat  
3421 tgtctcatga gcggatacat atttgaatgt atttagaaa ataaacaaat aggggttccg  
3481 gcacatttc cccgaaaagt gccacctgac gtctaagaaa ccattattat catgacatta  
3541 acctataaaa ataggcgtat cacgaggccc tttcgtctcg cgcgtttcgg tgatgacggt  
3601 gaaaacctct gacacatgca gctcccggag acggtcacag cttgtctgta agcggatgcc  
3661 gggagcagac aagcccgtca gggcgcgtca gcgggtgttg gcgggtgtcg gggctggctt  
3721 aactatgcgg catcagagca gattgtactg agagtgcacc atatgcggtg tgaataaccg  
3781 cacagatgcg taaggagaaa ataccgcatc aggcgccatt cgccattcag gctgcgcaac  
3841 tgttgggaag ggcgatcggg gcgggcctct tcgctattac gccagctggc gaaaggggga  
3901 tgtgctgcaa ggcgattaag ttgggtaacg ccagggtttt cccagtcacg acgttgtaaa  
3961 acgacggcca gtgaattaat tCGTTGCAGG ACAGGATGTG GTGCCCGATG TGACTAGCTC

```

4021 TTTGCTGCAG GCCGTCCTAT CCTCTGGTTC CGATAAGAGA CCCAGAACTC CGGCCCCCA
4081 CCGCCCACCG CCACCCCAT ACATATGTGG TACGCAAGTA AGAGTGCCTG CGCATGCCCC
4141 ATGTGCCCCA CCAAGAGCTT TGCATCCCAT ACAAGTCCCC AAAGTGGAGA ACCGAACCAA
4201 TTCTTCGCGG GCAGAACAAA AGCTTCTGCA CACGTCTCCA CTCGAATTTG GAGCCGCGCG
4261 GCGTGTGCAA AAGAGGTGAA TCGAACGAAA GACCCGTGTG TAAAGCCGCG TTTCCAAAAT
4321 GTATAAAACC GAGAGCATCT GGCCAATGTg catcagttgt ggtcagcagc aaaatcaagt
4381 gaatCATCTC AGTGCAACTA AAGGGGGGAT CTagatcggG GTACcACTA GcgctaccGG
4441 ACTCAGATCT CGAGctcgcc accATGATTC ACACCAACCT GAAGAAAAAG TTCAGTGCT
4501 GCGTCCTGGT CTTTCTTCTG TTTGCAGTCA TCTGTGTGTG GAAGGAAAAG AAGAAAGGGA
4561 GTTACTATGA TTCCTTAAA TTGCAAACCA AGGGGTGCGAC GGTACCGCGG GCCCGGGATC
4621 CACCGGTcgc caccATGGTG AGCAAGGGCG AGGAGCTGTT CACCGGGGTG GTGCCATCC
4681 TGGTCGAGCT GGACGGCGAC GTAAACGGCC ACAAGTTCAG CGTGTCCGGC GAGGGCGAGG
4741 GCGATGCCAC CTACGGCAAG CTGACCCTGA AGTTCATCTG CACCACCGGC AAGTGCCCG
4801 TGCCCTGGCC CACCCTCGTG ACCACCCTGA CCTACGGCGT GCAGTGCTTC AGCCGCTACC
4861 CCGACCACAT GAAGCAGCAC GACTTCTTCA AGTCCGCCAT GCCCGAAGGC TACGTCCAGG
4921 AGCGCACCAT CTTCTTCAAG GACGACGGCA ACTACAAGAC CCGCGCCGAG GTGAAGTTCG
4981 AGGGCGACAC CCTGGTGAAC CGCATCGAGC TGAAGGGCAT CGACTTCAAG GAGGACGGCA
5041 ACATCCTGGG GCACAAGCTG GAGTACAAC ACAACAGCCA CAACGTCTAT ATCATGGCCG
5101 ACAAGCAGAA GAACGGCATC AAGGTGAACT TCAAGATCCG CCACAACATC GAGGACGGCA
5161 GCGTGCAGCT CGCCGACCAC TACCAGCAGA ACACCCCAT CGGCGACGGC CCCGTGCTGC
5221 TGCCCGACAA CCACTACCTG AGCACCCAGT CCGCCCTGAG CAAAGACCCC AACGAGAAGC
5281 GCGATCACAT GGTCTGCTG GAGTTCGTGA CCGCCGCCG GATCACTCTC GGCATGGACG
5341 AGCTGTACAA GTAAAGCGGC CGCTCGAGtc tagaGGGCC ttcgaaGGTA AGCCTATCCC
5401 TAACCCTCTC CTCGGTCTCG ATTCTACGcg taccggtCAT CATCACCATC ACCATTGAgt
5461 ttaaaccgc tgatcagcct cgactgtgcc ttctaagatc cagacatgat aagatacatt
5521 gatgagtttg gacaaaccac aactagaatg cagtgaaaa aatgctttat ttgtgaaatt
5581 tgtgatgcta ttgctttatt tgtaaccatt

```

//

pMT-GalT::EGFP-T2A-tdTomato::Rab11

LOCUS	pMT_GalT_EGFP_T2	7792 bp	ds-DNA	circular	28-FEB-2020
DEFINITION	pMT-puro Sequencing Result				
ORGANISM	other sequences; artificial sequences; vectors.				
COMMENT	pMT-GalT-GFP-T2A-tdTom-Rab6 from 1 to 7705				
COMMENT	pMT-GalT-EGFP-T2A-tdTom-Vamp3 from 1 to 7513				
COMMENT	pMT-EGFP-hVamp3 from 1 to 5841				

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COMMENT    pMT-puro from 1 to 4724
COMMENT    ApEinfo:methylated:1
FEATURES   Location/Qualifiers
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                    /ApEinfo_revcolor=#ff3600
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                    /ApEinfo_revcolor=#ff3600
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                    /gene="EGFP"
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GIKVNFKIRHNIEDGSVQLADHYQNTPIGDGPVLLPDNHYLSTQSALS KDPNEKRDH
      MVLLEFVTAAGITLGMDELYKSGLRSAQASNSAVDGTAGPGSTGSR*"
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GIKVNFKIRHNIEDGSVQLADHYQNTPIGDGPVLLPDNHYLSTQSALS KDPNEKRDH
      MVLLEFVTAAGITLGMDELYKSGLRSAQASNSAVDGTAGPGSTGSR*"
      /label=EGFP_N_primer
      /ApEinfo_fwdcolor=#ffcc66
      /ApEinfo_revcolor=#ffcc66
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      /label=dT2A
      /ApEinfo_fwdcolor=#fff83d
      /ApEinfo_revcolor=#fff83d
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
      CDS             5443..6867
      /label=tdTomato
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    /gene="dTomato (variant)"

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EIHQALKLDGGHYLVEFKTIYMAKKPVQLPGYYYVDTKLDITSHNEDYTIVEQYERS
EGRHHLFLGHGTGSTGSGSGTASSEDNNMAVIKEFMRFKVRMEGSMNGHEFEIEGEG
EGRPYEGTQAKLKVTKGGPLPFAWDILSPQFMYGSKAYVKHPADIPDYKKLSFPEGF
KWERVMNFEDGGLVTVTQDSSLQDGLTIYKVKMRGTNFPDGPVMQKKTMGWEASTER
LYPRDGVKGEIHQALKLDGGHYLVEFKTIYMAKKPVQLPGYYYVDTKLDITSHNED
    YTIVEQYERSEGRHHLFLYGMDELYK*"
    /label=dTomato (variant)
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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promoter  complement(3419..3447)
    /label=AmpR_promoter
    /ApEinfo_fwdcolor=#ccffed
    /ApEinfo_revcolor=#ccffed
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EIHQALKLDGGHYLVEFKTIYMAKKPVQLPGYYYVDTKLDITSHNEDYTIVEQYERS  
EGRHHLFLGHGTGSTGSGSSGTASSEDNNMAVIKEFMRFKVRMEGSMNGHEFEIEGEG  
EGRPYEGTQAKLKVTKGGPLPFAWDILSPQFMYGSKAYVKHPADIPDYKKLSFPEGF  
KWERVMNFEDGGLVTVTQDSSLQDGLTIYVKMRGTNFPDGPVMQKKTMGWEASTER  
LYPRDGVKGEIHQALKLDGGHYLVEFKTIYMAKKPVQLPGYYYVDTKLDITSHNED  
    YTIVEQYERSEGRHHLFLYGMDELYK*"  
    /label=dsRed1_C_primer  
    /ApEinfo_fwdcolor=#ff3600  
    /ApEinfo_revcolor=#ff3600  
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}  
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gene      complement(2517..3377)  
    /gene="Ampicillin"  
    /label=Ampicillin  
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    /ApEinfo_revcolor=#ffffcc  
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}  
width 5 offset 0  
misc_feature  6761..6784  
  
/translation="MVSKGEEVIKEFMRFKVRMEGSMNGHEFEIEGEGEGRPYEGTQT  
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GGLVTVTQDSSLQDGLTIYVKMRGTNFPDGPVMQKKTMGWEASTERLYPRDGVKLG
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```
EIQALKLKDGGHYLVEFKTIYMAKKPVQLPGYYYVDTKLDITSHNEDYTIVEQYERS
EGRHHLFLGHGTGSTGSGSSGTASSEDNNMAVIKEFMRFKVRMEGSMNGHEFEIEGEG
EGRPYEGTQTAKLKVTKGGPLPFAWDILSPQFMYGSKAYVKHPADIPDYKKLSFPEGF
KWERMNFEDGGLVTVTQDSSLQDGLTIYKVKMRGTNFPDGPVMQKKTMGWEASTER
LYPRDGLKGEIQALKLKDGGHYLVEFKTIYMAKKPVQLPGYYYVDTKLDITSHNED
      YTIVEQYERSEGRHHLFLYGMDELYK*"
      /label=dsRed1_C_primer(1)
      /ApEinfo_label=dsRed1_C_primer
      /ApEinfo_fwdcolor=#ff3600
      /ApEinfo_revcolor=#ff3600
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
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YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTMPVAMATTLRKLTLGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
      EIGASLIKHW*"
      /label=pBR322_origin
      /ApEinfo_fwdcolor=pink
      /ApEinfo_revcolor=pink
      /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
      width 5 offset 0
      misc_feature    5304..5325

/translation="MVSKGEELFTGVVPIVELDGDVNGHKFSVSGEGEGDATYGKLT
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DDGNYKTRAEVKFEGDTLVNRIELKGIDFKEDGNILGHKLEYNNSHNVYIMADKQKN

GIKVNFKIRHNIEDGSVQLADHYQNTPIGDGPVLLPDNHYLSTQSALS KDPNEKRDH
    MVLLEFVTAAGITLGMDELYKSGRLRSRAQASNSAVDGTAGPGSTGSR*"
    /label=EGFP_C_primer
    /ApEinfo_fwdcolor=#ffcc66
    /ApEinfo_revcolor=#ffcc66
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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misc_feature    4651..5367
    /label=EGFP(1)
    /ApEinfo_label=EGFP
    /ApEinfo_fwdcolor=#49ff00
    /ApEinfo_revcolor=#49ff00
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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primer_bind    5308..5327
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    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff00bd
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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primer_bind    complement(5300..5322)
    /label=EGFP_R2
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    width 5 offset 0
primer_bind    complement(4772..4797)
    /label=EGFP_R3
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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              /label=ColE1 origin
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              /ApEinfo_revcolor=gray50
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width 5 offset 0
primer_bind   4961..4982
              /label=nvGF
              /ApEinfo_fwdcolor=#ff00bd
              /ApEinfo_revcolor=#ff0003
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind   complement(5293..5312)
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primer_bind   6835..6853
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              /ApEinfo_revcolor=#ff0003
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS           complement(2520..3179)
              /label=AmpR
              /ApEinfo_fwdcolor=yellow
              /ApEinfo_revcolor=yellow
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind   complement(6179..6197)
              /label=tdTomato-Rev
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              /ApEinfo_revcolor=#ff0003
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```

```
width 5 offset 0
primer_bind    complement(3098..3122)
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               /ApEinfo_revcolor=#ff0003
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width 5 offset 0
primer_bind    2640..2663
               /label=Amp-GR1
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    complement(7703..7722)
               /label=SEQ-EBV-rev(12A02)
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
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width 5 offset 0
primer_bind    4780..4802
               /label=EGFP_F2
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
primer_bind    6161..6182
               /label=tdLink primer
               /ApEinfo_fwdcolor=#ff00bd
               /ApEinfo_revcolor=#ff0003
               /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
width 5 offset 0
CDS            6964..7608
               /label=Rab11
               /ApEinfo_fwdcolor=#99ccff
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width 5 offset 0
promoter complement(1405..1434)

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DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
EIGASLIKHW*"
/label=lac_promoter
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width 5 offset 0
misc_feature complement(1369..1391)

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YSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHVTRL
DRWEPELNEAIPNDERDTTMPVAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPL
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EIGASLIKHW*"
/label=M13_pUC_rev_primer
/ApEinfo_fwdcolor=#ff3600
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width 5 offset 0
promoter complement(1352..1370)
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LRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIA
    EIGASLIKHW*"
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    /ApEinfo_revcolor=#ccffed
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gene    complement(143..742)
        /gene="puro (variant)"

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RRQEA FHLLL RGQPGAQLGHARADLGEHRPRFDALRRGPDRHRGAVVRDPHLADVEP
DAREEEFLQLGDPLDVAVRVDGVARGGVVGERGGEGAYGPGDVVAGGEAHRGLVLGHG
    RSSPCEGSGAWVRGWRHRSWRPTCRHASRYRIPAARGICCNL*"
    /label=puro (variant)
    /ApEinfo_fwdcolor=#ffffcc
    /ApEinfo_revcolor=#ffffcc
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {{}} 0}
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    /ApEinfo_revcolor=green
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_binding   complement(1378..1400)
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    /ApEinfo_fwdcolor=#6495ed
    /ApEinfo_revcolor=#6495ed
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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primer_bind    complement(1352..1372)
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    /ApEinfo_fwdcolor=#ff00bd
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    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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primer_bind    1230..1252
    /label=Seq-EB-R
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    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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primer_bind    1293..1318
    /label=CMV-R-EB-N
    /ApEinfo_fwdcolor=#ff00bd
    /ApEinfo_revcolor=#ff0003
    /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
    width 5 offset 0
misc_feature   complement(3820..3975)
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    /ApEinfo_fwdcolor=#ff3600
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              /ApEinfo_revcolor=#ccffed
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              width 5 offset 0
misc_feature  3941..3963
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              /ApEinfo_fwdcolor=#ff3600
              /ApEinfo_revcolor=#ff3600
              /ApEinfo_graphicformat=arrow_data {{0 1 2 0 0 -1}} {} 0}
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pMT-GalT-EGFP-T2A-tdTomato-Rab6

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2020
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ORIGIN

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4801 ACCGGCAAGC TGCCCGTGCC CTGGCCCACC CTCGTGACCA CCCTGACCTA CGGCGTGACG  
4861 TGCTTCAGCC GCTACCCCGA CCACATGAAG CAGCACGACT TCTTCAAGTC CGCCATGCCC  
4921 GAAGGCTACG TCCAGGAGCG CACCATCTTC TTCAAGGACG ACGGCAACTA CAAGACCCGC  
4981 GCCGAGGTGA AGTTCGAGGG CGACACCCTG GTGAACCGCA TCGAGCTGAA GGGCATCGAC  
5041 TTCAAGGAGG ACGGCAACAT CCTGGGGCAC AAGCTGGAGT ACAACTACAA CAGCCACAAC  
5101 GTCTATATCA TGGCCGACAA GCAGAAGAAC GGCATCAAGG TGAACTTCAA GATCCGCCAC  
5161 AACATCGAGG ACGGCAGCGT GCAGCTCGCC GACCACTACC AGCAGAACAC CCCCATCGGC  
5221 GACGGCCCCG TGCTGCTGCC CGACAACCAC TACCTGAGCA CCCAGTCCGC CCTGAGCAAA  
5281 GACCCCAACG AGAAGCGCGA TCACATGGTC CTGCTGGAGT TCGTGACCGC CGCCGGGATC  
5341 ACTCTCGGCA TGGACGAGCT GTACAAGgga ggtggaGAAG GACGCGGCAG CCTACTGACT  
5401 TGCGGAGATG TCGAAGAGAA CCCTGGCCCT ggtGccaccA TGGTGAGCAA GGGCGAGGAG  
5461 GTCATCAAAG AGTTCATGCG CTTCAAGGTG CGCATGGAGG GCTCCATGAA CGGCCACGAG  
5521 TTCGAGATCG AGGGCGAGGG CGAGGGCCGC CCCTACGAGG GCACCCAGAC CGCCAAGCTG  
5581 AAGGTGACCA AGGGCGGCC CCTGCCCTTC GCCTGGGACA TCCTGTCCCC CCAGTTCATG  
5641 TACGGCTCCA AGGCGTACGT GAAGCACCCC GCCGACATCC CCGATTACAA GAAGCTGTCC  
5701 TTCCCCGAGG GCTTCAAGTG GGAGCGCGTG ATGAACTTCG AGGACGGCGG TCTGGTGACC  
5761 GTGACCCAGG ACTCCTCCCT GCAGGACGGC ACGCTGATCT ACAAGGTGAA GATGCGCGGC  
5821 ACCAACTTCC CCCCCGACGG CCCCATAATG CAGAAGAAGA CCATGGGCTG GGAGGCCTCC  
5881 ACCGAGCGCC TGTACCCCCG CGACGGCGTG CTGAAGGGCG AGATCCACCA GGCCCTGAAG  
5941 CTGAAGGACG GCGGCCACTA CCTGGTGGAG TTCAAGACCA TCTACATGGC CAAGAAGCCC  
6001 GTGCAACTGC CCGGCTACTA CTACGTGGAC ACCAAGCTGG ACATCACCTC CCACAACGAG  
6061 GACTACACCA TCGTGGAACA GTACGAGCGC TCCGAGGGCC GCCACCACCT GTTCCTGGGG  
6121 CATGGACCG GCAGCACCGG CAGCGGCAGC TCCGGCACCG CCTCCTCCGA GGACAACAAC  
6181 ATGGCCGTCA TCAAAGAGTT CATGCGCTTC AAGGTGCGCA TGGAGGGCTC CATGAACGGC  
6241 CACGAGTTCG AGATCGAGGG CGAGGGCGAG GGCCGCCCTT ACGAGGGCAC CCAGACCGCC  
6301 AAGCTGAAGG TGACCAAGGG CGGCCCCCTG CCCTTCGCTT GGGACATCCT GTCCCCCAG  
6361 TTCATGTACG GCTCCAAGGC GTACGTGAAG CACCCCGCCG ACATCCCCGA TTACAAGAAG  
6421 CTGTCCTTCC CCGAGGGCTT CAAGTGGGAG CGCGTGATGA ACTTCGAGGA CGGCGGTCTG

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6481 GTGACCGTGA CCCAGGACTC CTCCTGCAG GACGGCACGC TGATCTACAA GGTGAAGATG
6541 CGCGGCACCA ACTTCCCCC CGACGGCCCC GTAATGCAGA AGAAGACCAT GGGCTGGGAG
6601 GCCTCCACCG AGCGCCTGTA CCCCCGCGAC GGC GTGCTGA AGGGCGAGAT CCACCAGGCC
6661 CTGAAGCTGA AGGACGGCGG CCACTACCTG GTGGAGTTCA AGACCATCTA CATGGCCAAG
6721 AAGCCCGTGC AACTGCCCGG CTA TACTACTAC GTGGACACCA AGCTGGACAT CACCTCCCAC
6781 AACGAGGACT ACACCATCGT GGAACAGTAC GAGCGCTCCG AGGGCCGCCA CCACCTGTTC
6841 CTGTACGGCA TGGACGAGCT GTACAAGACT AGTggaggag gaggttctgg tgggtgtTCA
6901 TCCGGAGATT TTGGCAATCC GCTGCGGAAG TTCAAGCTCG TCTTCCTCGG CGAGCAGAGT
6961 GTGGGCAAGA CCTCGCTGAT TACGCGCTTC ATGTACGACA GCTTCGACAA CACGTACCAG
7021 GCGACGATCG GAATTGATTT CCTATCGAAG ACCATGTACC TGGAGGATCG CACTGTGCGC
7081 CTGCAGCTGT GGGATACGGC GGGACAGGAG CGATTCCGCT CGCTGATACC CTCGTACATA
7141 CGCGACTCCA CGGTGGCAGT GGTCGTTTAC GATATCACCA ACACCAACTC GTTCCACCAG
7201 ACCTCCAAGT GGATCGATGA CGTGCGCACG GAGCGGGTA GCGACGTCAT CATCATGCTG
7261 GTGGGCAACA AGACGGATCT CTCCGACAAG CGTCAGGTGT CCACCGAGGA GGGTGAGCGC
7321 AAGGCGAAGG AGCTTAACGT GATGTTTATC GAGACAAGCG CCAAGGCCGG CTACAATGTG
7381 AAGCAATTGT TCCGACGGGT GGCCGCGGCA CTGCCCGGCA TGGATTCCAC GGAGAACAAG
7441 CCCTCCGAGG ACATGCAGGA GGTTGTGCTA AAGGACTCAC CCAACGAGAC AAAGGATCCC
7501 GAGGGCGGCT GCGCCTGCTA Acgcgtaccg gtCATCATCA CCATCACCAT TGAgtttaaa
7561 cccgctgatc agcctcgact gtgccttcta agatccagac atgataagat acattgatga
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7681 tgctattgct ttatttghtaa ccatt
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