



LOCUS Exported 7671 bp ds-DNA circular SYN 25-
 NOV-2015
 DEFINITION synthetic circular DNA
 ACCESSION .
 VERSION .
 KEYWORDS pLX304-V5-Blast-Empty (V144)
 SOURCE synthetic DNA construct
 ORGANISM synthetic DNA construct
 REFERENCE 1 (bases 1 to 7671)
 AUTHORS Transomic
 TITLE Direct Submission
 JOURNAL Exported Saturday, Feb 6, 2016 from SnapGene 3.0.3
<http://www.snapgene.com>

FEATURES Location/Qualifiers
 source 1..7671
 /organism="synthetic DNA construct"
 /mol_type="other DNA"
 enhancer 65..368
 /note="CMV enhancer"

```

        /note="human cytomegalovirus immediate early
enhancer"
  promoter 369..572
            /note="CMV promoter"
            /note="human cytomegalovirus (CMV) immediate early
            promoter"
  primer_bind 532..549
            /note="ORF primer forward"
  CDS 595..636
      /codon_start=1
      /product="epitope tag from simian virus 5"
      /note="V5 tag"
      /translation="GKPIPNNPLLGLDST"
  misc_feature 678..1266
              /note="WPRE"
              /note="woodchuck hepatitis virus posttranscriptional
              regulatory element"
  CDS complement(1149..1160)
      /codon_start=1
      /product="Factor Xa recognition and cleavage site"
      /note="Factor Xa site"
      /translation="IEGR"
  LTR 1338..1571
      /note="3' LTR (Delta-U3)"
      /note="self-inactivating 3' long terminal repeat
(LTR) from
        HIV-1"
  polyA_signal 1649..1770
              /note="SV40 poly(A) signal"
              /note="SV40 polyadenylation signal"
  rep_origin 1810..1945
            /note="SV40 ori"
            /note="SV40 origin of replication"
  promoter complement(1966..1984)
          /note="T7 promoter"
          /note="promoter for bacteriophage T7 RNA polymerase"
  primer_bind complement(1994..2010)
            /note="M13 fwd"
            /note="common sequencing primer, one of multiple
similar
  rep_origin 2152..2607
            /direction=RIGHT
            /note="f1 ori"
            /note="f1 bacteriophage origin of replication; arrow
            indicates direction of (+) strand synthesis"
  promoter 2633..2737
          /gene="bla"
          /note="AmpR promoter"
  CDS 2738..3598
      /codon_start=1
      /gene="bla"
      /product="beta-lactamase"
      /note="AmpR"

```

```

carbenicillin, and /note="confers resistance to ampicillin,
related antibiotics"

/translation="MSIQHFRVALIPFFAAAFCLPVFAHPETLVKVKDAEDQLGARVGYI
ELDLSNGKILESFRPEERFPMMSSTFKVLLCGAVLSRIDAGQEQLGRRIHYSQNDLVEYS
PVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTIGGPKELTAFLHNMGDHSVTRLDRW
EPELNEAIPNDERDITMPVAMATTLRKLTTGELLTLASRQQLIDWMEADKVAGPLLRSA
LPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIAEIGAS
LIKHW"
rep_origin 3769..4357
/direction=RIGHT
/note="ori"
/note="high-copy-number ColE1/pMB1/pBR322/pUC origin
of
protein_bind replication"
4645..4666
/bound_moiety="E. coli catabolite activator protein"
/note="CAP binding site"
/note="CAP binding activates transcription in the
presence
of cAMP."
promoter 4681..4711
/note="lac promoter"
/note="promoter for the E. coli lac operon"
protein_bind 4719..4735
/bound_moiety="lac repressor encoded by lacI"
/note="lac operator"
/note="The lac repressor binds to the lac operator
to
inhibit transcription in E. coli. This inhibition
can be
relieved by adding lactose or
isopropyl-beta-D-thiogalactopyranoside (IPTG)."
primer_bind 4743..4759
/note="M13 rev"
/note="common sequencing primer, one of multiple
similar
variants"
promoter 4780..4798
/note="T3 promoter"
/note="promoter for bacteriophage T3 RNA polymerase"
promoter 4826..5052
/note="RSV promoter"
/note="Rous sarcoma virus enhancer/promoter"
LTR 5053..5233
/note="5' LTR (truncated)"
/note="truncated 5' long terminal repeat (LTR) from
HIV-1"
misc_feature 5280..5405

```

```

        /note="HIV-1 Psi"
        /note="packaging signal of human immunodeficiency
virus
        type 1"
        misc_feature 5898..6131
        /note="RRE"
        /note="The Rev response element (RRE) of HIV-1
allows for
        Rev-dependent mRNA export from the nucleus to the
        cytoplasm."
        promoter 6535..7035
        /note="hPGK promoter"
        /note="human phosphoglycerate kinase 1 promoter"
        CDS 7047..7442
        /codon_start=1
        /gene="Aspergillus terreus BSD"
        /product="blasticidin S deaminase"
        /note="BSD"
        /note="confers resistance to blasticidin"

/translation="MAKPLSQEESTLIERATATINSIPISEDYSVASAALSSDGRIFTG
VNVYHFTGGPCAELVVLGTAAAAAAGNLTCIVAIGNENRGILSPCGRCRQVLLDLHPGI
        KAIVKDSGDQPTAVGIRELLPSGYVWEG"
        misc_feature 7502..7619
        /note="cPPT/CTS"
        /note="central polypurine tract and central
termination
        sequence of HIV-1"
ORIGIN
    1 cccgggggta ttaatagtaa tcaattacgg ggtcattagt tcatagccca
tatatggagt
    61 tccgcggtac ataacttacg gtaaattggc cgcctggctg accgccaac
gacccccgcc
    121 cattgacgtc aataatgacg tatggtccca tagtaacgcc aatagggact
ttcattgac
    181 gtcaatgggt ggagtattta cggtaaactg cccacttggc agtacatcaa
gtgtatcata
    241 tgccaagtac gccccctatt gacgtcaatg acggtaaatt gcccgcctgg
cattatgccc
    301 agtacatgac cttatgggac tttcctactt ggcagtacat ctacgtatta
gtcatcgcta
    361 ttaccatggt gatgcggttt tggcagtaca tcaatgggag tggatagcgg
ttgactcac
    421 ggggatttcc aagtctccac cccattgacg tcaatgggag tttgttttgg
caccaaaatc
    481 aacgggactt tccaaaatgt cgtaacaact cggccccatt gacgcaaatt
ggcggtaggc
    541 gtgtacggtg ggaggtctat ataagcagag ctctctggct aactgtcggg
atcaggtaag
    601 cctatcccta accctctcct cggctctgat tctacgtagt aatgagctag
cgctaaccgg
    661 tggcgcggtta agtcgacaat caacctctgg attacaaaat ttgtgaaaga
ttgactggta

```

721 ttcttaacta tgttgctcct tttacgctat gtggatacgc tgctttaatg
cctttgtatc
781 atgctattgc ttcccgtatg gctttcattt tctcctcctt gtataaatcc
tggttgctgt
841 ctctttatga ggagttgtgg cccgttgtca ggcaacgtgg cgtggtgtgc
actgtgtttg
901 ctgacgcaac cccactgggt tggggcattg ccaccacctg tcagctcctt
tccgggactt
961 tcgctttccc cctccctatt gccacggcgg aactcatcgc cgctgcctt
gcccgtgct
1021 ggacaggggc tcggctgttg ggcactgaca attccgtggt gttgtcgggg
aatcatcgt
1081 cctttccttg gctgctcgc cctggattct gcgcgggacg
tccttctgct
1141 acgtcccttc ggccctcaat ccagcggacc ttccttcccg cggcctgctg
ccggtctgc
1201 ggcctcttcc gcgtcttcgc cttcgcctc agacgagtcg gatctccctt
tgggccgct
1261 ccccgctgc actttaagac caatgactta caaggcagct gtagatctta
gccacttttt
1321 aaaagaaaag gggggactgg aagggctaata tcaactcccaa cgaagacaag
atctgctttt
1381 tgcttgact gggctctctt ggtagacca gatctgagcc tgggagctct
ctggctaact
1441 agggaaacca ctgcttaagc ctcaataaag cttgccttga gtgcttcaag
tagtggtgc
1501 ccgtctgttg tgtgactctg gtaactagag atccctcaga cccttttagt
cagtgtggaa
1561 aatctctagc agtacgtata gtagttcatg tcatcttatt attcagtatt
tataacttgc
1621 aaagaaatga atatcagaga gtgagaggaa cttgtttatt gcagcttata
atggttacia
1681 ataaagcaat agcatcacia atttcacaaa taaagcattt ttttactg
attctagttg
1741 tggtttgctc aaactcatca atgtatctta tcatgtctgg ctctagctat
cccgcccta
1801 actccgcca tcccgccct aactccgcc agttccgcc attctccgcc
ccatggctga
1861 ctaatttttt ttatttatgc agaggccgag gccgcctcgg cctctgagct
attccagaag
1921 tagtgaggag gcttttttgg aggcctaggg acgtacccaa ttcgcctat
agtgagtcgt
1981 attacgcgcg ctactggcc gtcgttttac aacgtcgtga ctgggaaaac
cctggcgta
2041 cccaacttaa tcgccttga gcacatcccc ctttcgccag ctggcgtaat
agcgaagagg
2101 cccgcaccga tcgcccttcc caacagttgc gcagcctgaa tggcgaatgg
gacgcgccct
2161 gtagcggcgc attaagcgcg gcgggtgtgg tggttacgcg cagcgtgacc
gtacacttg
2221 ccagcgcct agcgcgccct cctttcgctt tcttcccttc ctttctcgc
acgttcgccg
2281 gctttccccg tcaagctcta aatcgggggc tccctttagg gttccgattt
agtgccttac

2341 ggcacctcga ccccaaaaaa cttgattag gtagtggttc acgtagtggg
ccatcgccct
2401 gatagacggt ttttcgccct ttgacgttgg agtccacggt ctttaatagt
ggactcttgt
2461 tccaaactgg aacaacactc aaccctatct cggcttattc ttttgattta
taagggattt
2521 tgccgatttc ggcctattgg ttaaaaaatg agctgattta acaaaaattt
aacgcgaatt
2581 ttaacaaaaat attaacgctt acaatttagg tggcactttt cggggaaatg
tgcgcggaac
2641 ccctatttgt ttatTTTTtct aaatacattc aatatgtat ccgctcatga
gacaataacc
2701 ctgataaatg cttcaataat attgaaaaag gaagagtatg agtattcaac
atttccgtgt
2761 cgcccttatt ccctTTTTtgg cggcattttg ctttctggt tttgctcacc
cagaaacgct
2821 ggtgaaagta aaagatgctg aagatcagtt ggggtgcacga gtgggttaca
tcgaactgga
2881 tctcaacagc ggtaagatcc ttgagagttt tcgccccgaa gaacgttttc
caatgatgag
2941 cactttttaa gttctgctat gtggcgcggt attatcccgt attgacgccg
ggcaagagca
3001 actcggtcgc cgcatacact attctcagaa tgacttggtt gagtactcac
cagtcacaga
3061 aaagcatctt acggatggca tgacagtaag agaattatgc agtgctgcca
taaccatgag
3121 tgataacact gcggccaact tacttctgac aacgatcgga ggaccgaagg
agtaaccgc
3181 ttttttgac aacatggggg atcatgtaac tcgccttgat cgttgggaac
cggagctgaa
3241 tgaagccata ccaaacgacg agcgtgacac cacgatgcct gtagcaatgg
caacaacgtt
3301 gcgcaaaacta ttaactggcg aactacttac tctagcttcc cggcaacaat
taatagactg
3361 gatggaggcg gataaagttg caggaccact tctgcgctcg gcccttccgg
ctggctgggt
3421 tattgctgat aaatctggag cgggtgagcg tgggtctcgc ggtatcattg
cagcactggg
3481 gccagatggt aagccctccc gtatcgtagt tatctacacg acggggagtc
aggcaactat
3541 ggatgaacga aatagacaga tcgctgagat aggtgcctca ctgattaagc
attggtaact
3601 gtcagaccaa gtttactcat atatacttta gattgattta aaacttcatt
ttaaatttaa
3661 aaggatctag gtgaagatcc tttttgataa tctcatgacc aaaatccctt
aacgtgagtt
3721 ttogttccac tgagcgtcag accccgtaga aaagatcaaa ggatcttctt
gagatccttt
3781 ttttctgcgc gtaatctgct gcttgcaaac aaaaaacca ccgctaccag
cggtggtttg
3841 tttgccggat caagagctac caactctttt tccgaaggta actggcttca
gcagagcgca
3901 gataccaaat actgttcttc tagtgtagcc gtagttaggc caccacttca
agaactctgt

3961 agcaccgcct acatacctcg ctctgcta at cctgttacca gtggctgctg
ccagtggcga
4021 taagtctgtg cttaccgggt tggactcaag acgatagtta ccggataagg
cgcagcggtc
4081 gggctgaacg gggggttcgt gcacacagcc cagcttgag cgaacgacct
acaccgaact
4141 gagataccta cagcgtgagc tatgagaaag cgccacgctt cccgaaggga
gaaaggcggga
4201 caggtatccg gtaagcggca gggctcggaa aggagagcgc acgagggagc
ttccaggggg
4261 aaacgcctgg tatctttata gtctgtcgg gtttcgccac ctctgacttg
agcgtcgatt
4321 tttgtgatgc tcgtcagggg ggcggagcct atggaaaaac gccagcaacg
cggccttttt
4381 acggttcctg gccttttctg ggccttttgc tcacatgttc tttcctgcgt
tatcccctga
4441 ttctgtggat aaccgtatta ccgcctttga gtgagctgat accgctcgcc
gcagccgaac
4501 gaccgagcgc agcgagtcag tgagcgagga agcgggaagag cgcaccaatac
gcaaaccgcc
4561 tctccccgcg cgttggccga ttcattaatg cagctggcac gacaggtttc
ccgactggaa
4621 agcgggcagt gagcgcaacg caattaatgt gagttagctc actcattagg
caccacaggc
4681 tttacacttt atgcttccgg ctctgtatgt gtgtggaatt gtgagcggat
acaatttca
4741 cacaggaaac agctatgacc atgattacgc caagcgcgca attaacctc
actaaaggga
4801 acaaaagctg gagctgcaag cttaatgtag tcttatgcaa tactcttgta
gtcttgcaac
4861 atggtaacga tgagttagca acatgcctta caaggagaga aaaagcaccg
tgcattgccga
4921 ttgggtggaag taaggtggta cgatcgtgcc ttattaggaa ggcaacagac
gggtctgaca
4981 tggattggac gaaccactga attgccgcat tgcagagata ttgtatttaa
gtgcctagct
5041 cgatacataa acgggtctct ctggttagac cagatctgag cctgggagct
ctctggctaa
5101 ctagggaacc cactgcttaa gcctcaataa agcttgccct gagtgcttca
agtagtgtgt
5161 gcccgctctg tgtgtgactc tggttaactag agatccctca gaccctttta
gtcagtgtgg
5221 aaaatctcta gcagtggcgc ccgaacaggg acttgaaagc gaaagggaaa
ccagaggagc
5281 tctctcgacg caggactcgg cttgctgaag cgcgcacggc aagaggcgag
ggcgggcgac
5341 tgggtgagtac gccaaaaatt ttgactagcg gaggctagaa ggagagagat
gggtgagaga
5401 gcgtcagtat taagcggggg agaattagat cgcgatggga aaaaattcgg
ttaaggccag
5461 ggggaaagaa aaaatataaa ttaaaacata tagtatgggc aagcagggag
ctagaacgat
5521 tcgcagttaa tcttgccctg ttagaaacat cagaaggctg tagacaaata
ctgggacagc

5581 tacaaccatc ccttcagaca ggatcagaag aacttagatc attatataat
acagtagcaa
5641 ccctctattg tgtgcatcaa aggatagaga taaaagacac caaggaagct
ttagacaaga
5701 tagaggaaga gcaaaacaaa agtaagacca cgcacagca agcggccgct
gatcttcaga
5761 cctggaggag gagatatgag ggacaattgg agaagtgaat tatataaata
taaagtagta
5821 aaaattgaac cattaggagt agcaccacc aaggcaaaga gaagagtgg
gcagagagaa
5881 aaaagagcag tgggaatagg agctttgttc cttgggttct tgggagcagc
aggaagcact
5941 atgggagcag cgtcaatgac gctgacggtta caggccagac aattattgtc
tggtatagt
6001 cagcagcaga acaatttgct gagggctatt gaggcgcaac agcatctggt
gcaactcaca
6061 gtctggggca tcaagcagct ccaggcaaga atcctggctg tggaaagata
cctaaaggat
6121 caacagctcc tggggatttg ggggtgctct ggaaaactca tttgcaccac
tgctgtgcct
6181 tggaaatgcta gttggagtaa taaatctctg gaacagattt ggaatcacac
gacctggatg
6241 gagtgggaca gagaaattaa caattacaca agcttaatac actccttaat
tgaagaatcg
6301 caaaaccagc aagaaaagaa tgaacaagaa ttattggaat tagataaatg
ggcaagtttg
6361 tggaaattggt ttaacataac aaattggctg tggtatataa aattattcat
aatgatagta
6421 ggaggcttgg taggtttaag aatagttttt gctgtacttt ctatagtгаа
tagagttagg
6481 cagggatatt caccattatc gtttcagacc cacctcccaa ccccgagggg
acccttgcg
6541 cttttccaag gcagccctgg gtttgcgagc ggacgaggct gctctgggag
tggttccggg
6601 aaacgcagcg gcgccgacc tgggtctcgc acattcttca cgtccgttcg
cagcgtcacc
6661 cggatcttcg ccgctaccct tgtgggcccc cggcgagcgc ttctgctcc
gccctaagt
6721 cgggaagggt cttgaggtt cgcggcgtgc cggacgtgac aaacggaagc
cgacgtctc
6781 actagtacc tgcagacgg acagcgccag ggagcaatgg cagcgcgccc
accgcatgg
6841 gctgtggcca atagcggctg ctcagcaggg cgcgccgaga gcagcggccc
ggaaggggag
6901 gtgcgggag cggggtgtgg ggcggtagtg tgggccctgt tctgcccgc
gcggtgttcc
6961 gcattctgca agcctccgga gcgcacgtcg gcagtcggct ccctcgttga
ccgaatcacc
7021 gacctctctc cccagggggt accaccatgg ccaagccttt gtctcaagaa
gaatccacc
7081 tcattgaaag agcaacggct acaatcaaca gcatcccat ctctgaagac
tacagcgtcg
7141 ccagcgcagc tctctctagc gacggccgca tcttactgg tgtcaatgta
tatcatttta


```
7201 ctgggggacc ttgtgcagaa ctcgtggtgc tgggactgc tgctgctgcg
gcagctggca
7261 acctgacttg tatcgtcgcg atcggaaatg agaacagggg catcttgagc
ccctgcggac
7321 ggtgccgaca ggtgcttctc gatctgcatc ctgggatcaa agccatagtg
aaggacagtg
7381 atggacagcc gacggcagtt gggattcgtg aattgctgcc ctctggttat
gtgtgggagg
7441 gcctgcagct gcagtagtaa gaattctaga tcttgagaca aatggcagta
ttcatccaca
7501 attttaaaag aaaagggggg attggggggt acagtgcagg ggaaagaata
gtagacataa
7561 tagcaacaga catacaaact aaagaattac aaaaacaaat tacaaaaatt
caaaattttc
7621 gggtttatta cagggacagc agagatccac tttggcgccg gctcgagggg g
//
```