

<110> Rznomics Inc.
 <120> Construct of self-circularization RNA
 <130> FPC-2022-0122-PCT
 <150> KR 10-2021-0031225
 <151> 2021-03-10
 <160> 43
 <170> KoPatentIn 3.0
 <210> 1
 <211> 6
 <212> RNA
 <213> Artificial Sequence
 <220>
 <223> IGS region of self-circulariztion RNA
 <220>
 <221> variation
 <222> (2)..(6)
 <223> N is any one of A, G, U, and C
 <400> 1
 gnnnnnn
 <210> 2
 <211> 6
 <212> RNA
 <213> Artificial Sequence
 <220>
 <223> target site region of self-circulariztion RNA
 <220>
 <221> variation
 <222> (1)..(5)
 <223> N is any one of A, G, U, and C
 <400> 2
 nnnnnu

6

6

<210> 3
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> T7 promoter

<400> 3
 taatacgact cactataggg 20

<210> 4
 <211> 150
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> AS 150: AS region of expression vector for self-circularization
 RNA

<400> 4
 ggccggccagc atggagaact gccatggctc agccaggtag tactgtgggt actcgaagtg 62
 gctgcgtacc acacccgtcg cattggagaa gggcacgtag aagttagggc cttctgtgcc 122
 attcatggct gtggcccttg tggctgaccc 152

<210> 5
 <211> 6
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> IGS region of expression vector for self-circularization RNA

<400> 5
 gcccaa 6

<210> 6
 <211> 387
 <212> DNA
 <213> Artificial Sequence

<220>

<223> ribozyme region of expression vector for self-circularization RNA

<400> 6

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gggaaacttt gagatggcct tgcaaagggt atggtaataa gctgacggac atggtcctaa      180
ccacgcagcc aagtcctaag tcaacagatc ttctgttgat atggatgcag ttcacagact      240
aaatgtcggg cggggaagat gtattcttct cataagatat agtcggacct ctccttaatg      300
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<210> 7

<211> 463

<212> DNA

<213> Artificial Sequence

<220>

<223> EMCV IRES region of expression vector for self-circularization RNA

<400> 7

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ttgaagacaa acaacgtctg tagcgaccct ttgcaggcag cggaaccccc cacctggcga      180
caggtgcctc tgcggccaaa agccacgtgt ataagatata cctgcaaagg cggcacaacc      240
ccagtgccac gttgtgagtt ggatagttgt ggaaagagtc aaatggctct cctcaagcgt      300
attcaacaag gggctgaagg atgccagaa ggtaccccat tgtatgggat ctgatctggg      360
gcctcgggtg acatgcttta catgtgttta gtcgaggtta aaaaaacgtc taggcccccc      420
gaaccacggg gacgtggttt tcctttgaaa aacacgatga taa                                           463
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<210> 8

<211> 558

<212> DNA

<213> Artificial Sequence

<220>

<223> transgene region of expression vector for self-circularization
RNA: Gaussia Luciferase

<400> 8

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gatgctgacc gcgggaagtt gcccggcaag aagctgccgc tggaggtgct caaagagatg						180
gaagccaatg cccggaaagc tggctgcacc aggggctgtc tgatctgcct gtcccacatc						240
aagtgcacgc ccaagatgaa gaagttcatc ccaggacgct gccacaccta cgaaggcgac						300
aaagagtccg cacagggcgg cataggcgag gcgatcgtcg acattcctga gattcctggg						360
ttcaaggact tggagcccat ggagcagttc atcgacacagg tcgatctgtg tgtggactgc						420
acaactggct gcctcaaagg gcttgccaac gtgcagtgtt ctgacctgct caagaagtgg						480
ctgccgcaac gctgtgcgac ctttgccagc aagatccagg gccaggtgga caagatcaag						540
ggggccggtg gtgactaa						558

<210> 9

<211> 150

<212> DNA

<213> Artificial Sequence

<220>

<223> ABS region of expression vector for self-circularization RNA

<400> 9

gggtcagcca	caagggccac	agccatgaat	ggcacagaag	gccctaactt	ctacgtgccc	60
ttctccaatg cgacgggtgt ggtacgcagc cacttcgagt acccacagta ctacctggct						120
gagccatggc agttctccat gctggccgcc						150

<210> 10

<211> 1908

<212> DNA

<213> Artificial Sequence

<220>

<223> DNA template encoding self-circularizaion RNA of the example 1

<400> 10

gggattcgaa catcgattaa tacgactcac tataggggca tcgattgaat tgtcgacgaa	60
ttcggcggcc agcatggaga actgccatgg ctgagccagg tagtactgtg ggtactcgaa	120
gtggctgcgt accacacccg tcgcattgga gaagggcacg tagaagttag ggccttctgt	180
gccattcatg gctgtggccc ttgtggctga cccgaattcc gtactccgcc caaaaaagtt	240
atcaggcatg cacctggtag ctagtcttta aaccaataga ttgcatcggt ttaaaaggca	300
agaccgtcaa attgcgggaa aggggtcaac agccgttcag taccaagtct caggggaaac	360
tttgagatgg ccttgcaaag ggtatggtaa taagctgacg gacatgggtcc taaccacgca	420
gccaagtcct aagtcaacag atcttctgtt gatatggatg cagttcacag actaaatgtc	480
ggtcggggaa gatgtattct tctcataaga tatagtcgga cctctcctta atgggagcta	540
gcggatgaag tgatgcaaca ctggagccgc tgggaactaa tttgtatgcg aaagtatatt	600
gattagtttt ggagtactcg cgagtacgct taagaaaaaa aaaagagggc ccggaacct	660
ggccctgtct tcttgacgag cattcctagg ggtctttccc ctctcgccaa aggaatgcaa	720
ggctctgtga atgtcgtgaa ggaagcagtt cctctggaag cttcttgaag acaaacaacg	780
tctgtagcga ccctttgcag gcagcggaaac cccccacctg gcgacaggtg cctctgcggc	840
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aaggatgccc agaaggtacc ccattgtatg ggatctgatc tggggcctcg gtgcacatgc	1020
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gttttccttt gaaaaacacg atgataagct tgccacaacc cttaagaccg gtatgggagt	1140
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ccgcgggaag ttgcccggca agaagctgcc gctggaggtg ctcaaagaga tggaagccaa	1320

tgcccgaaa gctggctgca ccaggggctg tctgatctgc ctgtcccaca tcaagtgcac	1380
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cgcacagggc ggcataggcg aggcgatcgt cgacattcct gagattcctg ggttcaagga	1500
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ctgcctcaaa gggcttgcca acgtgcagtg ttctgacctg ctcaagaagt ggctgccgca	1620
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ccacagccat gaatggcaca gaaggcccta acttctacgt gcccttctcc aatgcgacgg	1800
gtgtggtacg cagccacttc gactaccac agtactacct ggctgagcca tggcagttct	1860
ccatgctggc cgccaagctt gcctcgagca gcgctgctcg agagatct	1908

<210> 11
 <211> 56
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> T7 Circular Forward primer

<400> 11	
gggattcgaa catcgattaa tacgactcac tataggggca tcgattgaat tgtcga	56

<210> 12
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> T7 Circular Reverse primer

<400> 12	
agatctctcg agcagcgctg ctcgaggcaa gctt	34

<210> 13
 <211> 21
 <212> DNA

<213> Artificial Sequence
 <220>
 <223> Circular STS Forward primer of the example 2-2

 <400> 13
 ccctgagtgg ctgagctcag g 21

 <210> 14
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Circular STS Reverse primer of the example 2-2

 <400> 14
 cagcaagcat actaaattgc cag 23

 <210> 15
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Circular STS Forward primer of the example 3

 <400> 15
 caaggacttg gagcccatgg agcag 25

 <210> 16
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Circular STS Reverse primer 2 of the example 3

 <400> 16
 tgtgccgcct ttgcaggtgt atc 23

 <210> 17

<211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA sequecne for AS50 region

 <400> 17
 aagttagggc cttctgtgcc attcatggct gtggcccttg tggctgaccc 50

 <210> 18
 <211> 100
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA sequecne for AS100 region

 <400> 18
 actcgaagtg gctgcgtacc acaccgtcg cattggagaa gggcacgtag aagttagggc 60
 cttctgtgcc attcatggct gtggcccttg tggctgaccc 100

 <210> 19
 <211> 150
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA sequecne for AS150 region

 <400> 19
 ggcggccagc atggagaact gccatggctc agccaggtag tactgtgggt actcgaagtg 60
 gctgcgtacc acaccgtcg cattggagaa gggcacgtag aagttagggc cttctgtgcc 120
 attcatggct gtggcccttg tggctgaccc 150

 <210> 20
 <211> 200
 <212> DNA
 <213> Artificial Sequence

 <220>

<223> DNA sequecne for AS200 region

<400> 20
agcgtgagga agttgatggg gaagcccagc acgatcagca gaaacatgta ggcggccagc 60
atggagaact gccatggctc agccaggtag tactgtgggt actcgaagtg gctgcgtacc 120
acacccgtcg cattggagaa gggcacgtag aagttagggc cttctgtgcc attcatggct 180
gtggcccttg tggctgaccc 200

<210> 21
<211> 250
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA sequecne for AS250 region

<400> 21
ggatgtagtt gagaggcgtg cgcagcttct tgtgctggac ggtgacgtag agcgtgagga 60
agttgatggg gaagcccagc acgatcagca gaaacatgta ggcggccagc atggagaact 120
gccatggctc agccaggtag tactgtgggt actcgaagtg gctgcgtacc acacccgtcg 180
cattggagaa gggcacgtag aagttagggc cttctgtgcc attcatggct gtggcccttg 240
tggctgaccc 250

<210> 22
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA sequecne for AS300 region

<400> 22
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gagaggcgtg cgcagcttct tgtgctggac ggtgacgtag agcgtgagga agttgatggg 120
gaagcccagc acgatcagca gaaacatgta ggcggccagc atggagaact gccatggctc 180

agccaggtag tactgtgggt actcgaagtg gctgcgtacc acacccgtcg cattggagaa	240
gggcacgtag aagttagggc cttctgtgcc attcatggct gtggcccttg tggctgaccc	300
	300

<210> 23
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA sequecne for A10: spacer region

<400> 23	
aaaaaaaaa	10

<210> 24
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA sequecne for A30: spacer region

<400> 24	
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa	30

<210> 25
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA sequecne for A50: spacer region

<400> 25	
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	39

<210> 26
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA sequecne for control 1: spacer region

<400> 26
 ggtagtggtg ctactaactt cagcctgctg aagca 35

<210> 27
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA sequecne for control 2: spacer region

<400> 27
 ggtagtaaac tactaactac aacctgctga agca 34

<210> 28
 <211> 6
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Aat2 site

<400> 28
 gacgtc 6

<210> 29
 <211> 1522
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA template encoding self-circularizaion RNA of the example 7

<400> 29
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 cacctggtag ctagtcttta aaccaataga ttgcatcggt ttaaaaggca agaccgtcaa 120
 attgcgggaa aggggtcaac agccgttcag taccaagtct caggggaaac tttgagatgg 180

ccttgcaaag ggtatggtaa taagctgacg gacatgggtcc taaccacgca gccaagtcct	240
aagtcaacag atcttctggt gatatggatg cagttcacag actaaatgtc ggtcggggaa	300
gatgtattct tctcataaga tatagtcgga cctctcctta atgggagcta gcggatgaag	360
tgatgcaaca ctggagccgc tgggaactaa tttgtatgcg aaagtatatatt gattagtttt	420
ggagtactcg cgagtacgct taagaaaaaa aaaagagggc ccggaaacct ggccctgtct	480
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ccctttgcag gcagcggaac ccccccactg gcgacaggtg cctctgcggc caaaagccac	660
gtgtataaga tacacctgca aaggcggcac aacccagtg ccacgttgtg agttggatag	720
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agaagggtacc ccattgtatg ggatctgatc tggggcctcg gtgcacatgc tttacatgtg	840
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gaaaaacacg atgataagct tgccacaacc cttagaccg gtatgggagt caaagttctg	960
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ttgcccggca agaagctgcc gctggagggtg ctcaaagaga tggaagccaa tgcccggaaa	1140
gctggctgca ccaggggctg tctgatctgc ctgtcccaca tcaagtgcac gcccaagatg	1200
aagaagttca tcccaggacg ctgccacacc tacgaaggcg acaaagagtc cgcacagggc	1260
ggcataggcg aggcgatcgt cgacattcct gagattcctg ggttcaagga cttggagccc	1320
atggagcagt tcatcgca ggtcgatctg tgtgtggact gcacaactgg ctgcctcaaa	1380
gggcttgcca acgtgcagtg ttctgacctg ctcaagaagt ggctgccgca acgctgtgcg	1440
acctttgcca gcaagatcca gggccaggtg gacaagatca agggggccgg tggtgactaa	1500
aaaaaaaaa accggttttg gt	1522

<210> 30
<211> 6

<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	RZ004 variant of P1 region: internal guide sequence composing P1 helix	
<400>	30	
gcccaa		6
<210>	31	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	RZ004 variant of P1 region: target site composing P1 helix	
<400>	31	
uugggu		6
<210>	32	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	RZ001 variant of P1 region: internal guide sequence composing P1 helix	
<400>	32	
ggcagg		6
<210>	33	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	RZ001 variant of P1 region: target site composing P1 helix	
<400>	33	
ccugcu		6

<210>	34	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	RZ003 variant of P1 region: internal guide sequence composing P1 helix	
<400>	34	
gcgucc		6
<210>	35	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	RZ003 variant of P1 region: target site composing P1 helix	
<400>	35	
ggacgu		6
<210>	36	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	GC rich variant of P1 region: internal guide sequence composing P1 helix	
<400>	36	
gcgcgc		6
<210>	37	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	GC rich variant of P1 region: target site composing P1 helix	

<400>	37	
gcgcgu		6

<210>	38
<211>	6
<212>	RNA
<213>	Artificial Sequence

<220>	
<223>	AU rich variant of P1 region: internal guide sequence composing P1 helix

<400>	38	
guaaaau		6

<210>	39
<211>	6
<212>	RNA
<213>	Artificial Sequence

<220>	
<223>	AU rich variant of P1 region: target site composing P1 helix

<400>	39	
auuuuau		6

<210>	40
<211>	6
<212>	RNA
<213>	Artificial Sequence

<220>	
<223>	2 sites variant of P1 region: internal guide sequence composing P1 helix

<400>	40	
guguug		6

<210>	41
<211>	6
<212>	RNA

<213>	Artificial Sequence	
<220>		
<223>	2 sites variant of P1 region: target site composing P1 helix	
<400>	41	
caacau		6
<210>	42	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	No complementary variant of P1 region: internal guide sequence composing P1 helix	
<400>	42	
gcccaa		6
<210>	43	
<211>	6	
<212>	RNA	
<213>	Artificial Sequence	
<220>		
<223>	No complementary variant of P1 region: target site composing P1 helix	
<400>	43	
aacccg		6