

9869SG2503_ST25.txt
SEQUENCE LISTING

<110> Agency For Science, Technology and Research (SG)

<120> A new trasposon for genome manipulation

<130> 9869Sg2504

<150> SG 201304405-2

<151> 2013-06-06

<160> 35

<170> PatentIn version 3.5

<210> 1

<211> 2939

<212> DNA

<213> Artificial sequence

<220>

<223> PLE-wu transposon sequence

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<220>
 <223> PLE-wu transposase amino acid sequence

<400> 2

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 Asp Asp Asp Val Pro Tyr Asn Val Thr Lys Leu Gln Arg Ile Leu Gly
 35 40 45
 Asp Leu Glu Glu Pro Asp Leu Arg Ser Thr Ala Thr Ile Arg Ala Ser
 50 55 60
 Leu Ser Pro Gln Leu Ser Thr Ser Ser Asp Ala Glu Ile Pro Cys Gly
 65 70 75 80
 Glu Pro Leu Leu Val Ile Pro Pro Pro Thr Val Ile Glu Ala Val Ala
 85 90 95
 Ser Thr Ser Ala Val Pro Leu His Val Pro Gln Pro Ala Val Leu Leu
 100 105 110
 Pro Ala Glu Pro Pro Ile Ser Arg Lys Leu Pro Val Lys Gly Arg Gly
 115 120 125
 Arg Gly Ala Arg Met Glu Arg Gly Ser Gly Thr Gly Arg Arg Phe Arg
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 Thr Gly Arg Glu Ala Gly Thr Arg Met Gly Arg Gly Ala Arg Thr Arg
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 Thr Pro Pro Val Ser Glu Ala Glu Ser Glu Ala Ser Asp Ser Asp Arg
 180 185 190
 Asp Glu Glu Glu Trp Lys Lys Thr Leu Trp Thr Asp Ile Arg Pro Gln
 195 200 205
 Leu Glu Ser Phe Asp Ser Val Pro Met Thr Pro Thr Arg Val Leu Pro
 210 215 220
 Ser Asn Ala Arg Pro Ile Arg Tyr Phe Glu Lys Phe Phe Thr Gln Glu
 225 230 235 240
 Val Phe Glu Leu Ile Ile Thr Glu Thr Asn Arg Tyr Ala Cys Gln Asn
 245 250 255
 Asn Val Ile Gly Trp Thr Ile Leu Asp Ile Lys Glu Leu Lys Ala Phe
 260 265 270
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Leu Tyr Trp Ser Ser Asp Pro Glu Phe Arg Val Asp Glu Ile Ala Ser
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 Thr Met Thr Phe Arg Arg Phe Lys Gln Ile Leu Arg Cys Leu His Leu
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 325 330 335
 Leu Phe Lys Ile Arg Pro Leu Leu Thr Leu Ile Asn Thr Ser Phe Gln
 340 345 350
 Glu Asn Ala His Asn Ser Ser Ser Gln Ser Ile Asp Glu Ser Met Ile
 355 360 365
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 370 375 380
 Ile Lys Arg Gly Phe Lys Val Trp Cys Arg Cys Asp Ser Ile Thr Gly
 385 390 395 400
 Tyr Leu Tyr Glu Phe Asp Ile Tyr Thr Gly Arg Asp Gly Asp Arg Val
 405 410 415
 Glu Asp Asn Leu Gly Gly Lys Val Val Lys Lys Leu Thr Glu Lys Leu
 420 425 430
 Lys Gly Met Ala Ala Val His Val Thr Phe Asp Asn Phe Phe Cys Ser
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 Tyr Asp Ile Met Asn Tyr Leu His Val Asn Gly Ile Ser Ala Ser Gly
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 Thr Val Arg Arg Gln Arg Ala Asp Leu Pro Lys Leu Val Lys Ser Lys
 465 470 475 480
 Lys Lys Leu Lys Leu Thr Lys Gly Gln Tyr Lys Trp Arg Val Lys Glu
 485 490 495
 Asn Val Ala Phe Val Ile Trp Gln Asp Thr Lys Glu Val Leu Phe Met
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 Thr Asn Ala Phe His Pro Lys Asp Asn Glu Thr Ser Leu Pro Arg Lys
 515 520 525
 Gly Arg Asp Gly Ser Lys Thr Asp Val Arg Cys Pro Ala Val Val Lys
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 Glu Tyr Thr Lys Arg Met Gly Gly Val Asp His Phe Asp His Ile Lys
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565 570 575

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Gly Lys Asn Ala Asn Ala Thr Lys Leu Ser Asn Leu Glu Tyr Arg Val
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Ala Leu Ala Arg Gly Leu Ile Gly Cys Phe Ser Ser Arg Lys Arg Arg
610 615 620

Ala Glu Gly Val Asn Tyr Val Val Arg Lys Lys Val Ala Val Ser Glu
625 630 635 640

Asn Tyr Gln Lys Ala Ile His Ile Val Ala Pro Glu Ile Arg Phe Ser
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Asn Val Gly Asp His Met Pro Asn Asp Ile Pro Ser Tyr Gln Arg Cys
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Arg Tyr Cys Ser Thr Lys Ala Lys Asp Lys Arg Ser Lys Ile Lys Cys
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<220>
<223> PLE-wu transposase nucleotide sequence

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<220>
 <223> PLE-wu 5' end

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 atttgtttct gatatttattt gacattgaca gattcaattt tttttcaaag tcttgagggtg 180
 aatttgaaaa ctagcggttt tttgtacttc gagagaaatc ggtacatatc tttgcaatag 240
 agtggtgaaa aaaggtaagt tcttctagat gttgtgcttt tgaatgtttt ttcataagata 300
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 gaagaatatt ccctctaac 379

<210> 5
 <211> 148
 <212> DNA
 <213> Artificial Sequence

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 <223> PLE-wu 3' end

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 tagatcctta taaccgttaa aggggttaa 148

<210> 6
 <211> 27
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Forward primer for amplifying PLE-wu transposon

<400> 6
 gcggaattcg caacagagcg tcgagag 27

<210> 7
 <211> 29
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Reverse primer for amplifying PLE-wu transposon

<400> 7
 gcggaattca gcggagcaaa agctgttac 29

<210> 8
 <211> 37
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Forward primer for amplifying 708-residue PLE-wu transposase

<400> 8
 gcggaattcg ccaccatgaa aatacttaga gatgacg 37

<210> 9
 <211> 37
 <212> DNA

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<213> Artificial sequence
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 <223> Reverse primer for amplifying 708-residue PLE-wu transposase
 <400> 9
 cgcggaattcg ccacatgaa aatacttaga gatgacg 37

<210> 10
 <211> 29
 <212> DNA
 <213> Artificial sequence
 <220>
 <223> Forward primer for amplifying Full-5' end of PLE-wu
 <400> 10
 gctgaattca acacgcgact cttttcgtc 29

<210> 11
 <211> 27
 <212> DNA
 <213> Artificial sequence
 <220>
 <223> Reverse primer for amplifying Full-5' end of PLE-wu (1)
 <400> 11
 gcgactagta gaaagcggat acttcac 27

<210> 12
 <211> 32
 <212> DNA
 <213> Artificial sequence
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 <223> Forward primer for amplifying Full-3' end of PLE-wu
 <400> 12
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<210> 13
 <211> 29
 <212> DNA
 <213> Artificial sequence
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 <223> Reverse primer for amplifying Full-3' end of PLE-wu
 <400> 13
 gctgaattca agaattggcaa accaagtcg 29

<210> 14
 <211> 29
 <212> DNA
 <213> Artificial sequence
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 <223> Forward primer for checking for excision of PLE-wu (P1)
 <400> 14
 cgcctcgagg acgtctggca agaatcaca 29

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<210> 15
 <211> 29
 <212> DNA
 <213> Artificial sequence
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 <223> Reverse primer for checking for excision of PLE-wu (P2)
 <400> 15
 cgcaagcttc acgacagcag gctgaataa 29

<210> 16
 <211> 20
 <212> DNA
 <213> Artificial sequence
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 <223> Forward primer for checking for excision of PLE-wu (P3)
 <400> 16
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<210> 17
 <211> 20
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 <213> Artificial sequence
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 <223> Reverse primer for checking for excision of PLE-wu (P4)
 <400> 17
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<210> 18
 <211> 35
 <212> DNA
 <213> Artificial sequence
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 <223> Forward primer for amplifying 576-residue transposase
 <400> 18
 cgcgattcg ccaccatgga acgtggatcc ggaac 35

<210> 19
 <211> 32
 <212> DNA
 <213> Artificial sequence
 <220>
 <223> Reverse primer for amplifying 576-residue transposase
 <400> 19
 gcggaattct taaacttggtt tgtgaaaatt cg 32

<210> 20
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 <212> DNA
 <213> Artificial sequence
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 <223> Reverse primer for amplifying Full-5' end of PLE-wu (2)

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<400> 20
gcgacgcgta gtagaaagcg gatacttcac 30

<210> 21
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<212> DNA
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<220>
<223> Forward primer for amplifying deleted-5' end of PLE-wu (i.e. short PLE-wu/short Tase)

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<210> 22
<211> 31
<212> DNA
<213> Artificial sequence

<220>
<223> Forward primer for amplifying deleted-3' end of PLE-wu (i.e. short PLE-wu/short Tase)

<400> 22
gcgacgcgtg catcttatgt aacacaaatc c 31

<210> 23
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> Reverse primer for amplifying 3' end of PLE-wu and its nearby chromosome region

<400> 23
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<210> 24
<211> 112
<212> DNA
<213> Artificial sequence

<220>
<223> 5' end of short/ truncated PLE-wu transposon

<400> 24
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acaaaatttc tatttgcaat tttatttttc gacctgacaa cattaacgta ac 112

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<211> 74
<212> DNA
<213> Artificial sequence

<220>
<223> 3' end of truncated / short PLE-wu transposon

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cgtaaagg ttaa

74

<210> 26
 <211> 21
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Forward primer for amplifying 3'end of PLE-wu and its nearby chromosome region

<400> 26
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21

<210> 27
 <211> 576
 <212> PRT
 <213> Artificial sequence

<220>
 <223> PLE-wu short transposase

<400> 27

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Val Gly Asp Lys Asp Ser Asp Ser Ser Glu Asp Asn Thr Pro Pro Val
 35 40 45

Ser Glu Ala Glu Ser Glu Ala Ser Asp Ser Asp Arg Asp Glu Glu Glu
 50 55 60

Trp Lys Lys Thr Leu Trp Thr Asp Ile Arg Pro Gln Leu Glu Ser Phe
 65 70 75 80

Asp Ser Val Pro Met Thr Pro Thr Arg Val Leu Pro Ser Asn Ala Arg
 85 90 95

Pro Ile Arg Tyr Phe Glu Lys Phe Phe Thr Gln Glu Val Phe Glu Leu
 100 105 110

Ile Ile Thr Glu Thr Asn Arg Tyr Ala Cys Gln Asn Asn Val Ile Gly
 115 120 125

Trp Thr Ile Leu Asp Ile Lys Glu Leu Lys Ala Phe Leu Gly Ile Leu
 130 135 140

Ile Ile Met Gly Tyr Asn Ile Leu Pro Thr Phe Glu Leu Tyr Trp Ser
 145 150 155 160

Ser Asp Pro Glu Phe Arg Val Asp Glu Ile Ala Ser Thr Met Thr Phe
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175

Arg Arg Phe Lys Gln Ile Leu Arg Cys Leu His Leu Asn Asp Asn Ser
180 185 190

Lys Gln Pro Ala Arg Leu Ser Pro Glu Tyr Asp Lys Leu Phe Lys Ile
195 200 205

Arg Pro Leu Leu Thr Leu Ile Asn Thr Ser Phe Gln Glu Asn Ala His
210 215 220

Asn Ser Ser Ser Gln Ser Ile Asp Glu Ser Met Ile Leu Phe Lys Gly
225 230 235 240

Arg Ser Thr Leu Lys Gln Tyr Met Pro Met Lys Pro Ile Lys Arg Gly
245 250 255

Phe Lys Val Trp Cys Arg Cys Asp Ser Ile Thr Gly Tyr Leu Tyr Glu
260 265 270

Phe Asp Ile Tyr Thr Gly Arg Asp Gly Asp Arg Val Glu Asp Asn Leu
275 280 285

Gly Gly Lys Val Val Lys Lys Leu Thr Glu Lys Leu Lys Gly Met Ala
290 295 300

Ala Val His Val Thr Phe Asp Asn Phe Phe Cys Ser Tyr Asp Ile Met
305 310 315 320

Asn Tyr Leu His Val Asn Gly Ile Ser Ala Ser Gly Thr Val Arg Arg
325 330 335

Gln Arg Ala Asp Leu Pro Lys Leu Val Lys Ser Lys Lys Lys Leu Lys
340 345 350

Leu Thr Lys Gly Gln Tyr Lys Trp Arg Val Lys Glu Asn Val Ala Phe
355 360 365

Val Ile Trp Gln Asp Thr Lys Glu Val Leu Phe Met Thr Asn Ala Phe
370 375 380

His Pro Lys Asp Asn Glu Thr Ser Leu Pro Arg Lys Gly Arg Asp Gly
385 390 395 400

Ser Lys Thr Asp Val Arg Cys Pro Ala Val Val Lys Glu Tyr Thr Lys
405 410 415

Arg Met Gly Gly Val Asp His Phe Asp His Ile Lys Gly Thr Tyr Ser
420 425 430

Val Gly Arg Arg Ser Lys Arg Trp Trp Leu Arg Ile Phe Tyr Phe Ile
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435

440

445

Phe Asp Ala Cys Ile Thr Asn Ser Phe Leu Leu Gln Gly Lys Asn Ala
 450 455 460

Asn Ala Thr Lys Leu Ser Asn Leu Glu Tyr Arg Val Ala Leu Ala Arg
 465 470 475 480

Gly Leu Ile Gly Cys Phe Ser Ser Arg Lys Arg Arg Ala Glu Gly Val
 485 490 495

Asn Tyr Val Val Arg Lys Lys Val Ala Val Ser Glu Asn Tyr Gln Lys
 500 505 510

Ala Ile His Ile Val Ala Pro Glu Ile Arg Phe Ser Asn Val Gly Asp
 515 520 525

His Met Pro Asn Asp Ile Pro Ser Tyr Gln Arg Cys Arg Tyr Cys Ser
 530 535 540

Thr Lys Ala Lys Asp Lys Arg Ser Lys Ile Lys Cys Ser Lys Cys Gly
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Val Pro Leu Cys Ile Thr Pro Cys Phe Ser Asn Phe His Lys Gln Val
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<210> 28

<211> 1731

<212> DNA

<213> Artificial sequence

<220>

<223> PLE-wu nucleotide sequence encoding short transposase

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tccgaagata atacgccacc agtatcagaa gcagagtcag aagcaagcga ttctgacaga	180
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9869SG2503_ST25.txt

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9869SG2503_ST25.txt

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6

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