

SEQUENCE LISTING

<110> Temasek Life Sciences Laboratory Limited

<120> Genetic Manipulation and Expression Systems for Pucciniomycotina and Ustilaginomycotina Subphyla

<130> SG4311A

<150> US 61/495,619

<151> 2011-06-10

<160> 58

<170> PatentIn version 3.5

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<211> 597

<212> DNA

<213> Ustilago maydis

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<212> DNA

<213> Rhodosporidium toruloides

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 <211> 888
 <212> DNA
 <213> *Aspergillus nidulans*

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gttgaccaag aatctattgc atcatcgag aatatggagc ttcatcgaat caccggcagt	240
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<210> 4

<211> 617
 <212> DNA
 <213> *Aspergillus niger*

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 ctcttctct tcatccatcc tctcttcac acttccctct tcccttcac caattcatct 480
 tccaagttag tcttctctcc catctgtccc tccatctttc ccatcatcat ctccccctcc 540
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<210> 5
 <211> 388
 <212> DNA
 <213> *Ashibia gossipii*

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 ttagcccata catcccatg tataatcatt tgcattcata cttttgatg gccgcacggc 180
 gcgaagcaaa aattacggct cctcgtgca gacctgcag cagggaaacg ctccccctac 240
 agacgcgttg aattgtcccc acgcccgc cctgtagaga aatataaaag gttaggattt 300
 gccactgagg ttcttctttc atatacttcc ttttaaaatc ttgctaggat acagttctca 360
 catcacatcc gaacataaac aaccatgg 388

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic hpt-2 coding sequence

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 gtgggcggca ggggctacgt gctcaggggtg aacagctgcg ccgatggctt ctacaaggat 180
 aggtacgtgt acaggcattt cgccagcgcc gccctcccaa tcccagaggt gctcgacatc 240
 ggcgagttca gcgagagcct cacctactgc atcagcagga gggctcaggg cgtgaccctc 300
 caggatctcc cagagaccga gttccagcc gtgtccagc cagtggccga ggctatggat 360

gccatcgccg cgcgcatct cagccagacc agcggcttcg gccattcgg cccacagggc	420
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cttatgctct gggccgagga ttgccagag gtgaggcatc tcgtccatgc cgatttcggc	600
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atgttcggcg atagccagta cgaggtgcc aacatcttct tctggaggcc ctggctcgcc	720
tgcatggagc agcagaccag gtacttcgag aggaggcacc ctgagcttgc tggagccca	780
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gccggcaccg tgggcaggac ccagatcgcc aggaggagcg ccgccgtgtg gaccgatggc	960
tgcgtaggag tgctcgccga tagcggaac agggaggcaa gcaccaggcc aaggggcaag	1020
aagtga	1026

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 <211> 1026
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic hpt-3 coding sequence

<400> 7	
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ggcgagtctt cggagtcgct cacctactgc atctcgcgcc gcgcccaggg cgtcaccttc	300
caggacctcc cggagaccga gctcccggcc gtcctccagc cggtcgccga ggcgatggac	360
gccatcgccg ccgccgacct ctcgcagacc tcgggcttcg gcccgttcgg cccgcagggc	420
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gccggcaccg tcggccgcac ccagatcgcc cgccgctcgg ccgccgtctg gaccgaggc	960
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gagtag	1026

<210> 8
 <211> 573
 <212> DNA
 <213> Unknown

<220>
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 gagggcatcg aggcactgga tgggtccttc accaccgaca ccgtcttcg cgtaaccgcc 120
 accggggacg gcttcaccct gcgggagggt ccggtggacc cgcccctgac caaggtgttc 180
 cccgacgacg aatcggacga cgaatcggac gacggggagg acggcgaccc ggactcccgg 240
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 cacctctggc tggaggtcac caacgtcaac gcaccggcga tccacgcgtg ccggcggtatg 480
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 caggcgctct acatgggcat gccctgcccc taa 573

<210> 9
 <211> 1026
 <212> DNA
 <213> Escherichia coli

<400> 9
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 gccgggactg tcgggcgtac acaaatcgcc cgcagaagcg cggccgtctg gaccgatggc 960
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aaatag 1026

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 <212> DNA
 <213> Rhodosporidium toruloides

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 gctctaagcg gtttctgtag actccgcctt tcctctagcc tagcctcttc gcttcttcca 1140
 ctgcgcagtt tgagtgaatg cgtaaaattc agttcacagc c 1181

<210> 11
 <211> 89
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide containing LoxP site

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 ttcgtataat gtatgctata cgaagttat 89

<210> 12
 <211> 89
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide containing LoxP site
 <400> 12
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 tagcatacat tatacgaagt tatttattg 89
 <210> 13
 <211> 20
 <212> DNA
 <213> Artificial Sequence
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 <223> oligonucleotide PCR primer
 <400> 13
 cctgtggttg gcatgcacat 20
 <210> 14
 <211> 48
 <212> DNA
 <213> Artificial Sequence
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 <223> oligonucleotide PCR primer
 <400> 14
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 <210> 15
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 <212> DNA
 <213> Artificial Sequence
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 <223> oligonucleotide PCR primer
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 aaagtcgacg agatcgtagg agtgagtacc 30
 <210> 16
 <211> 31
 <212> DNA
 <213> Artificial Sequence
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 <223> oligonucleotide PCR primer
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 <210> 17
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 <212> DNA
 <213> Artificial Sequence
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 <223> oligonucleotide PCR primer
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 <210> 18

<211> 36
 <212> DNA
 <213> Artificial Sequence

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 <223> oligonucleotide PCR primer

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<210> 19
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 <223> oligonucleotide PCR primer

 <400> 19
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<210> 20
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 <220>
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<210> 21
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 <212> DNA
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 <223> oligonucleotide PCR primer

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 <223> oligonucleotide PCR primer

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23

<210> 23
 <211> 8
 <212> PRT
 <213> Rhodosporidium toruloides

<400> 23

Asn Gly Phe Gly Arg Ile Gly Arg
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<210> 24
 <211> 8
 <212> PRT
 <213> Rhodosporidium toruloides

<400> 24

Thr Gly Ala Ala Lys Ala Val Gly
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<210> 25
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	caggccgcag aggggtgaac	19
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<210>	42	
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<223>	oligonucleotide PCR primer	
<400>	42	
	gtaccggcgc gccacctg	19
<210>	43	

<211> 33
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 <213> Artificial Sequence

 <220>
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 <223> n is a, c, g, or t

 <220>
 <221> misc_feature
 <222> (27)..(29)
 <223> n is a, c, g, or t

 <400> 43
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 <210> 44
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide PCR primer

 <220>
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 <222> (26)..(26)
 <223> n is a, c, g, or t

 <220>
 <221> misc_feature
 <222> (28)..(30)
 <223> n is a, c, g, or t

 <400> 44
 acgatggact ccagagcggc cgcdbnbnnn cggt 34

 <210> 45
 <211> 16
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide PCR primer

 <400> 45
 acgatggact ccagag 16

 <210> 46
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide PCR primer

 <400> 46
 agatctcgct gtttcttcgg 20

 <210> 47

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

<220>
 <223> oligonucleotide PCR primer

<400> 47
 ttccgcggt cgaatttccc cgatcgttca

30

<210> 48
 <211> 807
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> coding sequence for eGFP with C-terminal 2X HA and 6X His tag

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 atggcggatc ctgtgagcaa gggcgaggag ctgttcaccg ggggtgggtgcc catcctggtc 60
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 gccacctacg gcaagctgac cctgaagtcc atctgcacca ccggcaagct gcccgtgccc 180
 tggcccaccc tcgtgaccac cctgacctac ggcgtgcagt gcttcagccg ctaccccgac 240
 cacatgaagc agcacgactt cttcaagtcc gccatgcccg aaggctacgt ccaggagcgc 300
 accatcttct tcaaggacga cggcaactac aagacccgcg ccgaggtgaa gttcgagggc 360
 gacaccctgg tgaaccgcat cgagctgaag ggcctcgact tcaaggagga cggcaacatc 420
 ctggggcaca agctggagta caactacaac agccacaacg tctatatcat ggccgacaag 480
 cagaagaacg gcatcaaggt gaacttcaag atccgccaca acatcgagga cggcagcgtg 540
 cagctcgccg accactacca gcagaacacc cccatcggcg acggccccgt gctgctgccc 600
 gacaaccact acctgagcac ccagtccgcc ctgagcaaag accccaacga gaagcgcgat 660
 cacatggtcc tgctggagtt cgtgaccgcc gccgggatca ctctcggcat ggacgagctg 720
 tacaagttaa ttaactaccc ctatgatgta cctgactatg cataccctta tgatgtacca 780
 gactatgctc accatcacca ccatcac 807

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<220>
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32

<210> 50
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide PCR primer

<400> 50

aaaccatggt tcgagctgga gaaaggtgg

29

<210> 51
<211> 963
<212> DNA
<213> Rhodoturulā grammis

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tctctcggcc ggcctcacg tgatccacga cgtcgtactg acccttgca atgtgcgcgc 180
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gagctcctcg aggcgtgcct cggcgagctg cccgggtcca tctccaaggg cgagtcgttc 300
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accgagtgcc atcgattccc cgctcgaacc tgctcacggc tgtcgaaggc ggtgcgccac 720
ggtgcttgcg ggagcgaaag caagctggcg tcgtcctctt gaactggttc gagtccgtga 780
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tgg 963

<210> 52
<211> 720
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic eGFP coding sequence

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ggcaagctca ccctcaagtt catctgcacc accggcaagc tcccgggtccc gtggccgacc 180
ctcgtcacca ccctcaccta cggcgtccag tgcttctcgc gctacccgga ccacatgaag 240
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ttcaaggacg acggcaacta caagaccgc gccgaggtca agttcgaggg cgacaccctc 360
gtcaaccgca tcgagctcaa ggcatcgac ttcaaggagg acggcaacat cctcggccac 420
aagctcgagt acaactacaa ctgcacaac gtctacatca tggccgacaa gcagaagaac 480
ggcatcaagg tcaacttcaa gatccgccac aacatcgagg acggctcggc ccagctcgcc 540

gaccactacc agcagaacac cccgatcggc gacggcccgg tcctcctccc ggacaaccac 600
 tacctctcga cccagtcggc cctctcgaag gacccgaacg agaagcgga ccacatggtc 660
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<210> 53
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide PCR primer

<400> 53
 aaaggcgcg cgaagttata cctcagaggt ctcaaaaacg 40

<210> 54
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide PCR primer

<400> 54
 aaaccatggg gttttgtaga gaaggagtgg agggg 35

<210> 55
 <211> 1009
 <212> DNA
 <213> Sporobolomyces roseus

<400> 55
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 ctgatgcac tttgtgttca cgggttagcg atttgatctt ttcgattccc aaaatcgtat 180
 cgttcctgtc gcagggaaact acgtcaaaag ccggcactct gatcatcacg ggagttagtt 240
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 ttccctctc ctttctcctt tgtccattct ctctactacg gttgtcacat cttccttctc 360
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 gacgtcttca gggtcgagat ctcgggaggc atcgggaggt tggtaacaa gatcgaatat 480
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 cggaaagcaa agctggagag aaaaatcgag attgcgaaac gtgcgatgtc atttcgtttc 600
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 cgagatagaa aaaaggctag ctttcgattt cgagagagat tactttcaag ttcgctgctt 960

ccaactcttg ctccaacccc ctccactcct tctctacaaa acaccatgg 1009

<210> 56
<211> 2148
<212> DNA
<213> Rhodotorula glutinis ATCC 204091

<400> 56
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cagccccac gagcgcctca aaagacgagg acgcagacgc ccgccgaacg acggcacgcc 180
cctcttctca ctacgcgcac gaaccagctg cgacgattcg tgcgcttatg ttagccggac 240
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acaccactc acacaccctt ccatccacac acaagctatc cgcacacctc tcacaccga	2100
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<210> 57
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 <212> DNA
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<220>
 <223> oligoculeotide PCR primer

<400> 57	
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<210> 58
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide PCR primer

<400> 58	
ccatggtttt cgatgagccg ggtgagaa	28