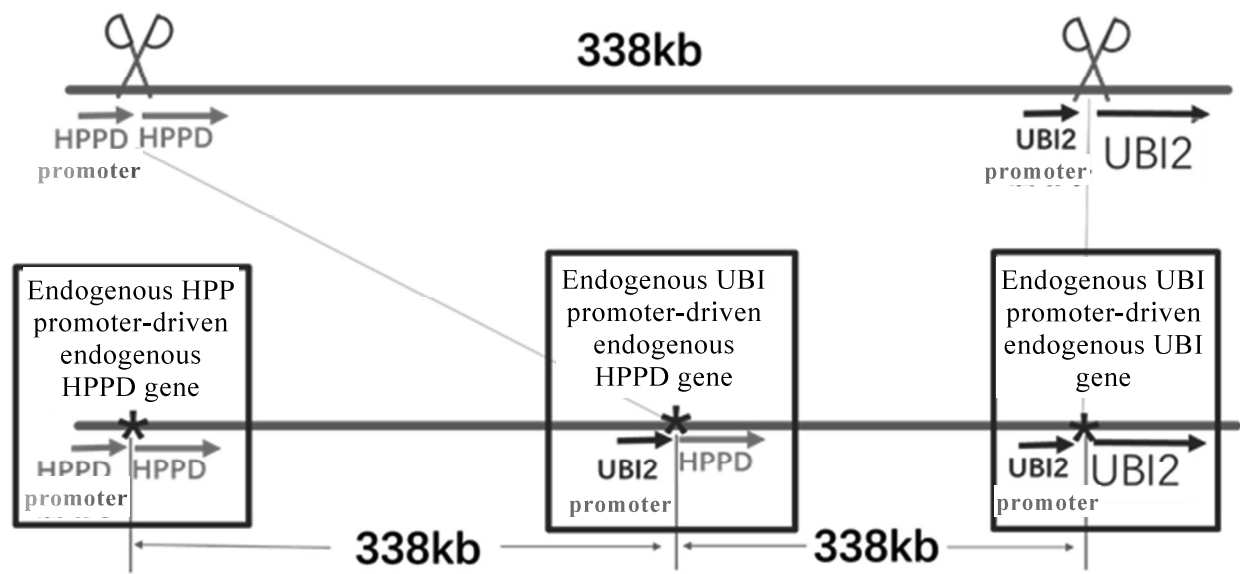


Scheme 1 Doubling



Scheme 2 Two consecutive inversions

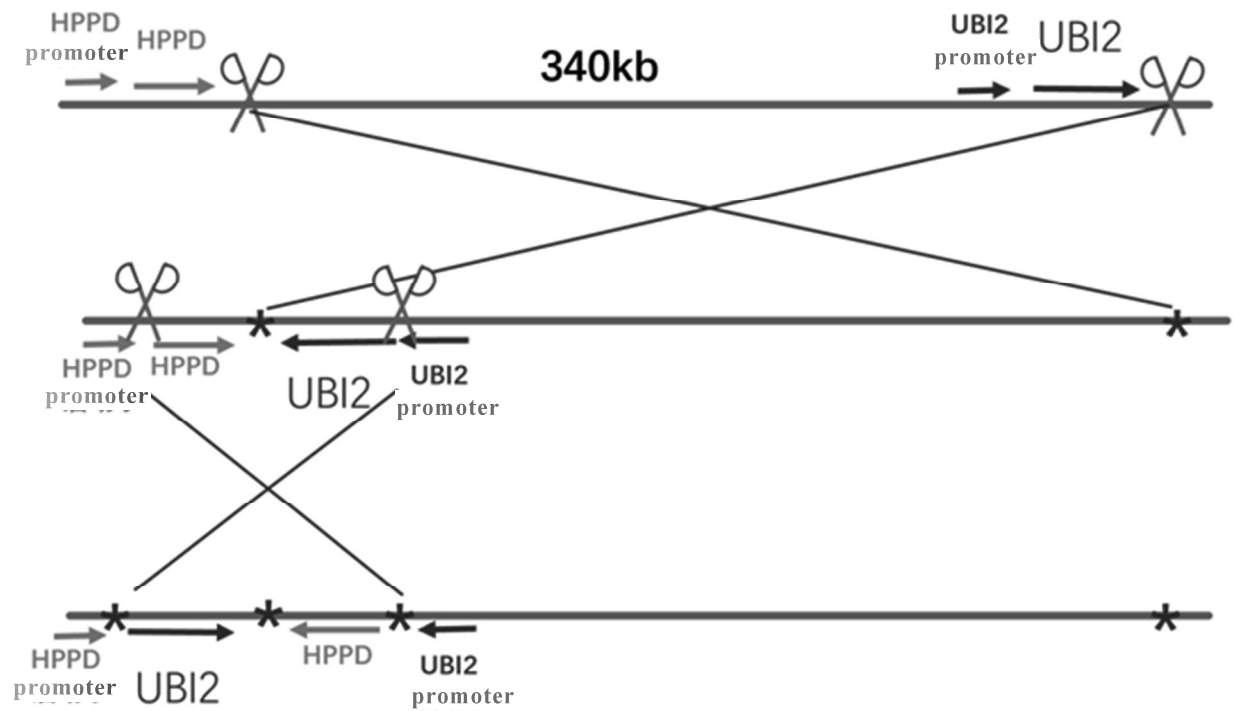
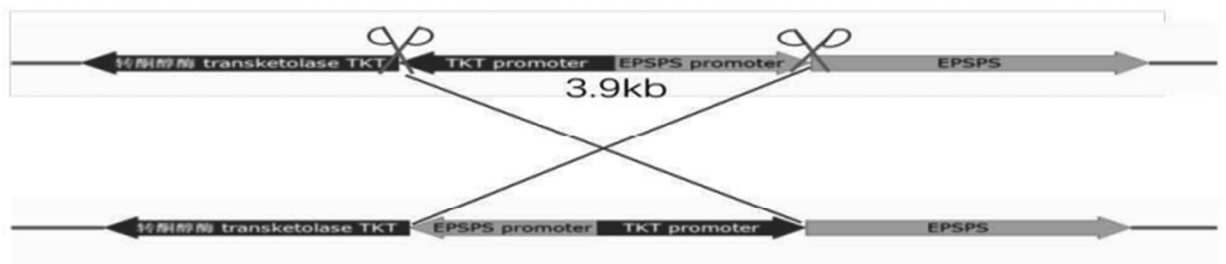
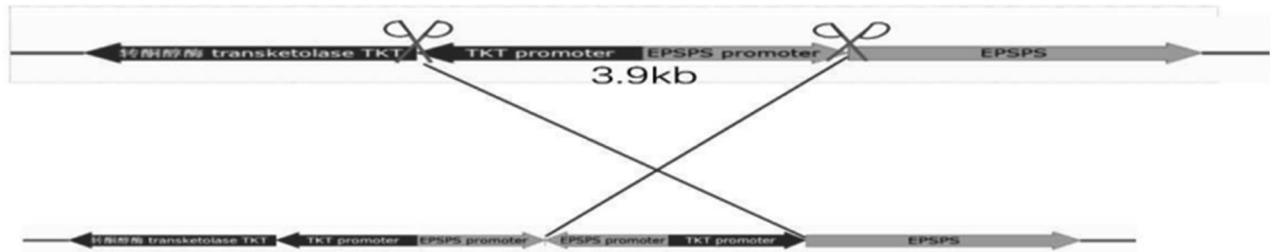


Figure 1

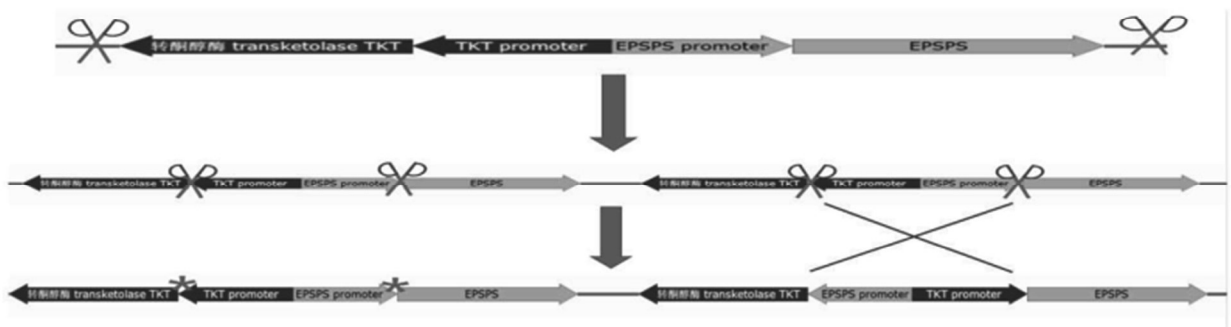
Scheme 1 Inversion



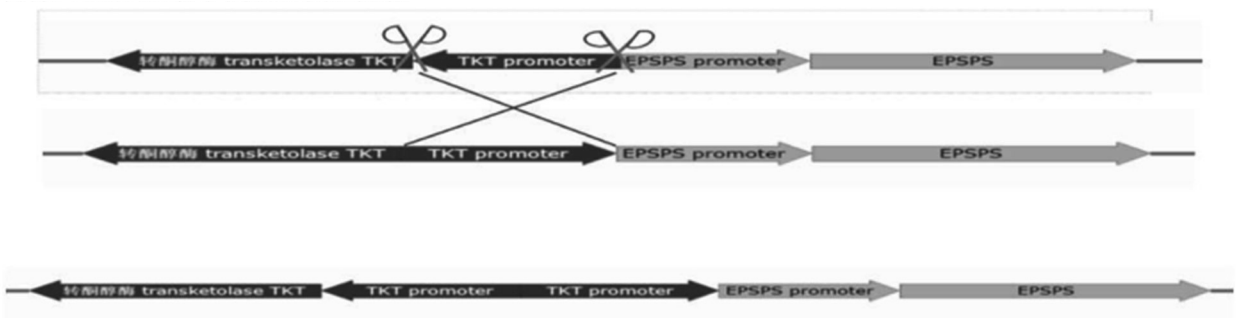
Scheme 2 Inversion doubling



Scheme 3 First doubling then inversion



Scheme 4 TKT promoter inversion and inversion doubling



Scheme 5 First inversion then doubling

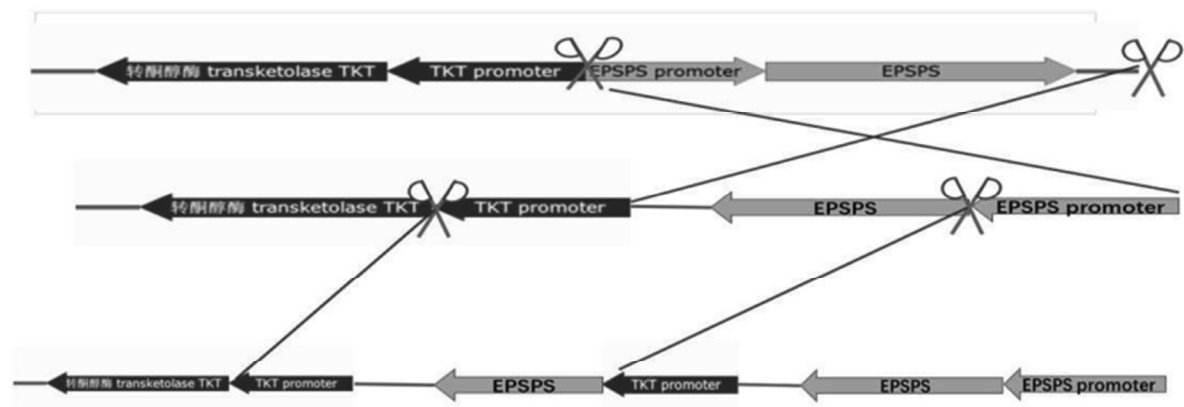


Figure 2

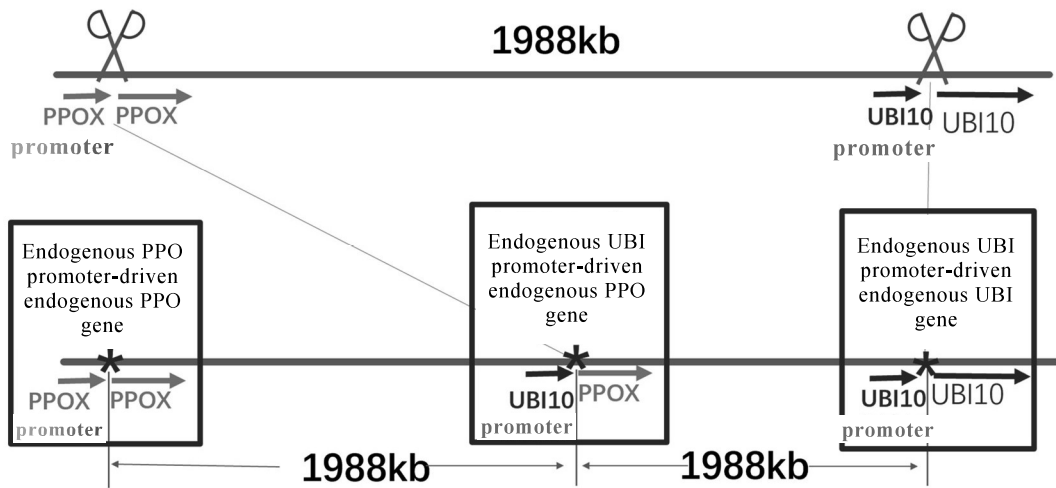
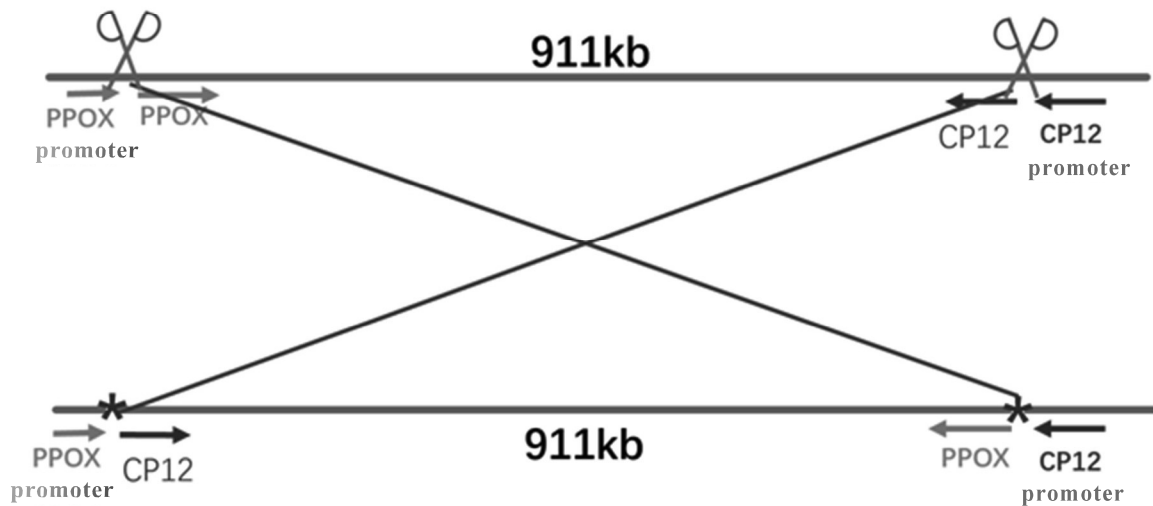


Figure 3

Scheme 1 Inversion



Scheme 2 First inversion then doubling

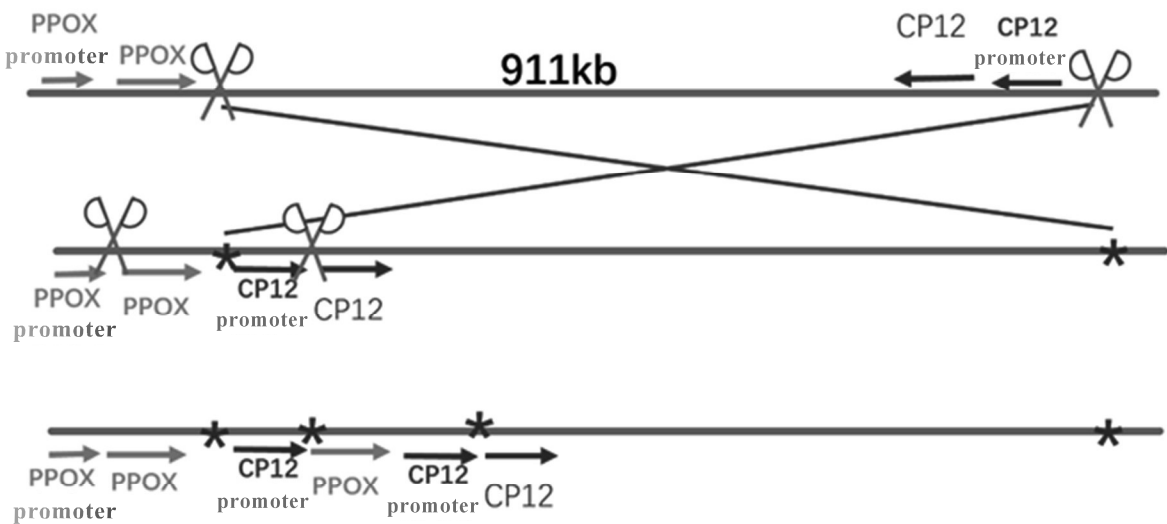


Figure 4

(2) Sequencing result of doubling resulting from pQY002066 vector transformation of protoplast (the underlined part is the Ubiquitin2 gene promoter, the italic part is the HPPD gene expression region)

TTCAAGTCCATAGGCGAGGCGACCGGCCCGCGGCGGACGCGGCGTCGGCGCACCCAGAGCTCGACGTGGTGGAACGCGA
GCGCCTGGAACCGGTGCTCCGCGGGTTGGCGCGGACGAAGCGGCGGTGCCCGACGAGGCGGAACCCGCGTTCTCCC
CGCCGCCGACGCGCCGAGACGGCGCCGGTGGTGGCGGTGGGGGTGGGAGTGGGAGGCATGGCGCGGCGCGGCGCG
GCGTGGCGTGGCGCGTCTGTGGGGTGTGGGGGAGTGGATGACAGTGGCGGCGTGGGGGGAGGAGTTGGTGGTGGGGGG
TAAATAAAGGGAGGAGATGGCGCCACGTGGACGCTAAGTCTAGTGGTTGCGGACGGGATTTGTCCTCTGGTGCTGGTTG
CCTTGGCAGATAGGGTAAGAACTAGCACAAAGATTAAGGACACAA *CAACGATCAAACAGCAAA* *CATATTC* *CAACAGAACATA*
CATGTATTC *AAAAAGATAGTAA* *CAGGCA* *CATCACATGTATT* *CAGATAGGTAGTAA* *CAGCA* *CACGTATCCTGAACTT* *CATAAA*
TAAGTAGAATGAACTAGTGGCAATAACTTTT *CACAGAACATCTCCCTT* *GTTTTCAAATATGTAGTAACAGCACACGTATCCT*
GTACTTCAAACTTAGTAGAATGAACTAGTGGCAGTAATCTTT *CACACAGAAAGAATGAACTAGTGGCAATAATCTT* *CACAC*
AGAATGTTGGTTGATGGATAG

(1) Sequencing result of doubling resulting from pQY002068 vector transformation of protoplast (the underlined part is the Ubiquitin2 gene promoter, the italic part is the HPPD gene expression region)

CAACGTGCCTTAGGCGAGGCGACCGGCCCGCGGCGGACGCGGCGTCGGCGCACCCAGAGCTCGACGTGGTGGAACGCGA
GCGCCTGGAACCGGTGCTCCGCGGGTTGGCGCGGACGAAGCGGCGGTGCCCGACGAGGCGGAACCCGCGTTCTCCC
CGCCGCCGACGCGCCGAGACGGCGCCGGTGGTGGCGGTGGGGGTGGGAGTGGGAGGCATGGCGCGGCGCGGCGCG
GCGTGGCGTGGCGCGTCTGTGGGGTGTGGGGGAGTGGATGACAGTGGCGGCGTGGGGGGAGGAGTTGGTGGTGGGGGG
TAAATAAAGGGAGGAGATGGCGCCACGTGGACGCTAAGTCTAGTGGTTGCGGACGGGATTTGTCCTCTGGTGCTGGTTG
CCTTGGAGATAGGGTAAGAACTAGCA *CAAGATTAAGGACACAACAACGATCAAACAGCAAA* *CATATTC* *CAACAGAACATAC*
ATGTATTC *AAAAAGATAGTAACAGG* *CACATCACATGTATT* *CAGATAGGTAGTAA* *CAGCACACGTATCCTGAACTT* *CAGAAAT*
AAGTAGAATGAACTAGTGGCAATAACTTTT *CCCCCAAAAACCTGTC*

Figure 5

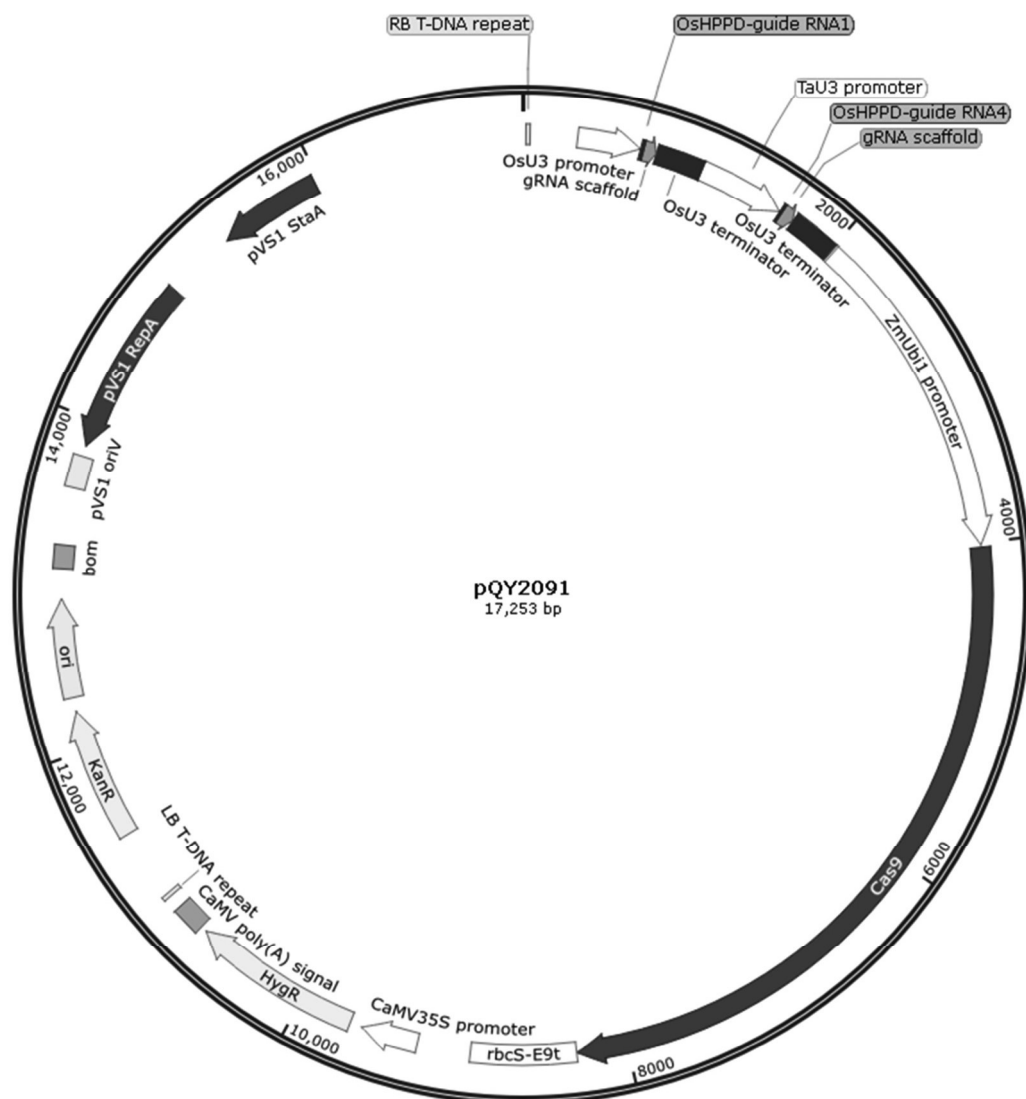


Figure 6

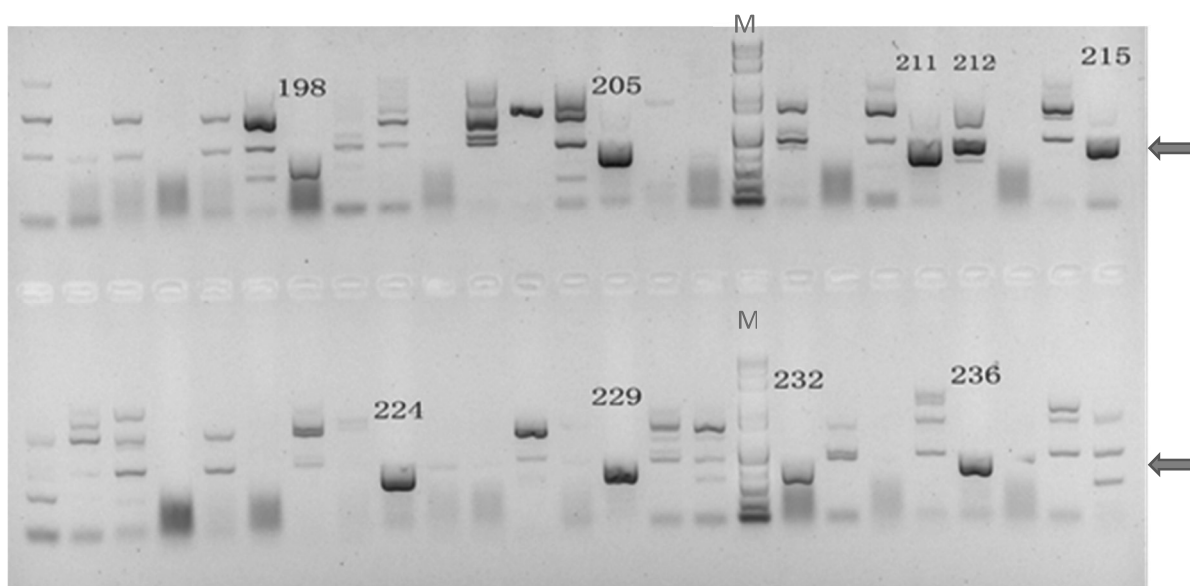


Figure 7

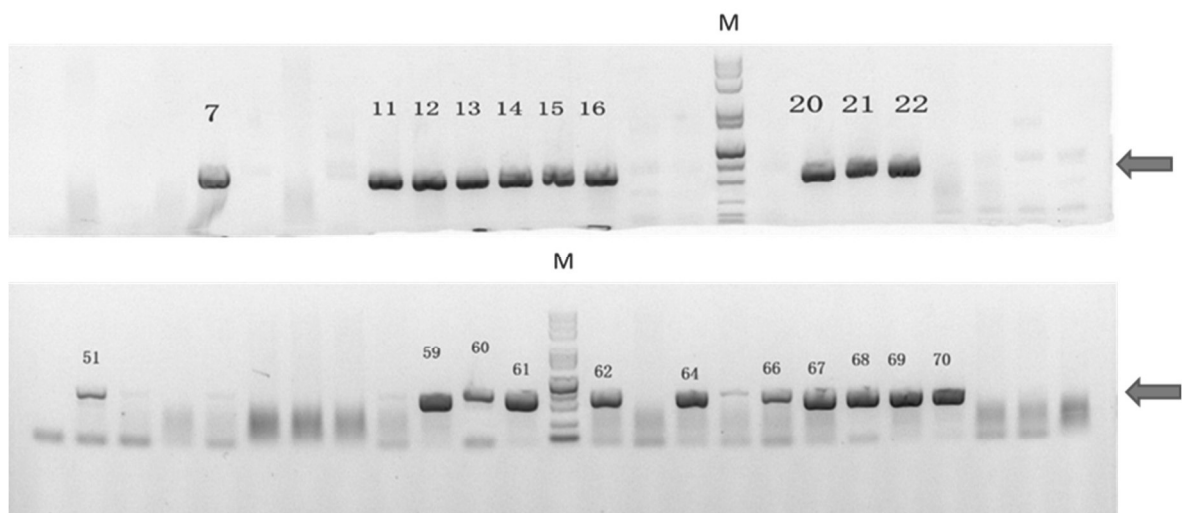


Figure 8

Shuangzuocaotong resistance test for HPPD knock-up lines of QY2091

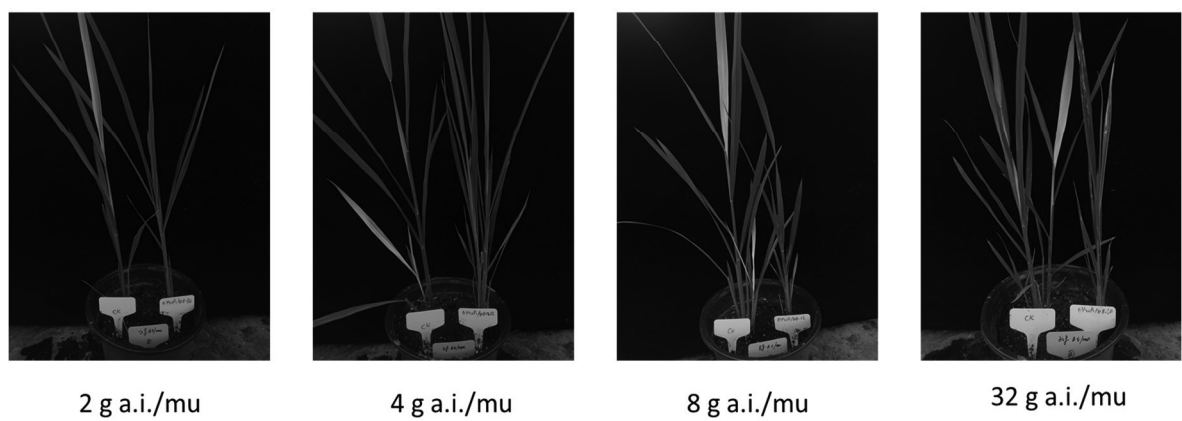


Figure 9

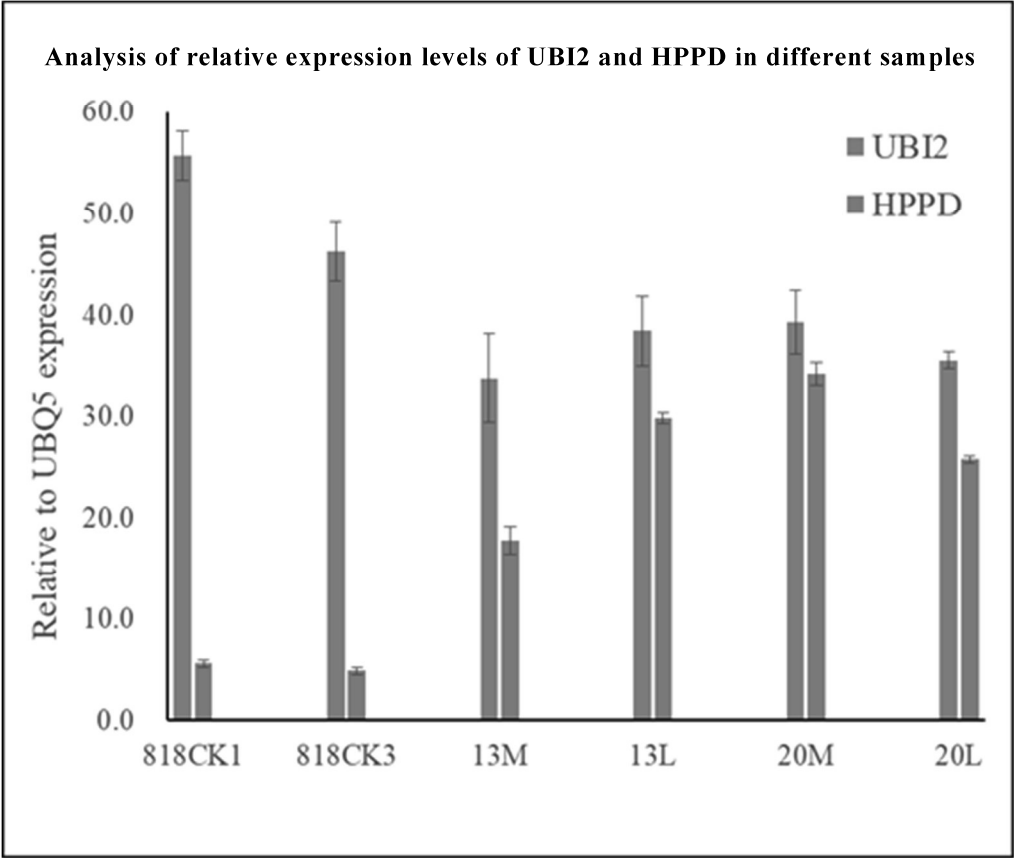


Figure 10

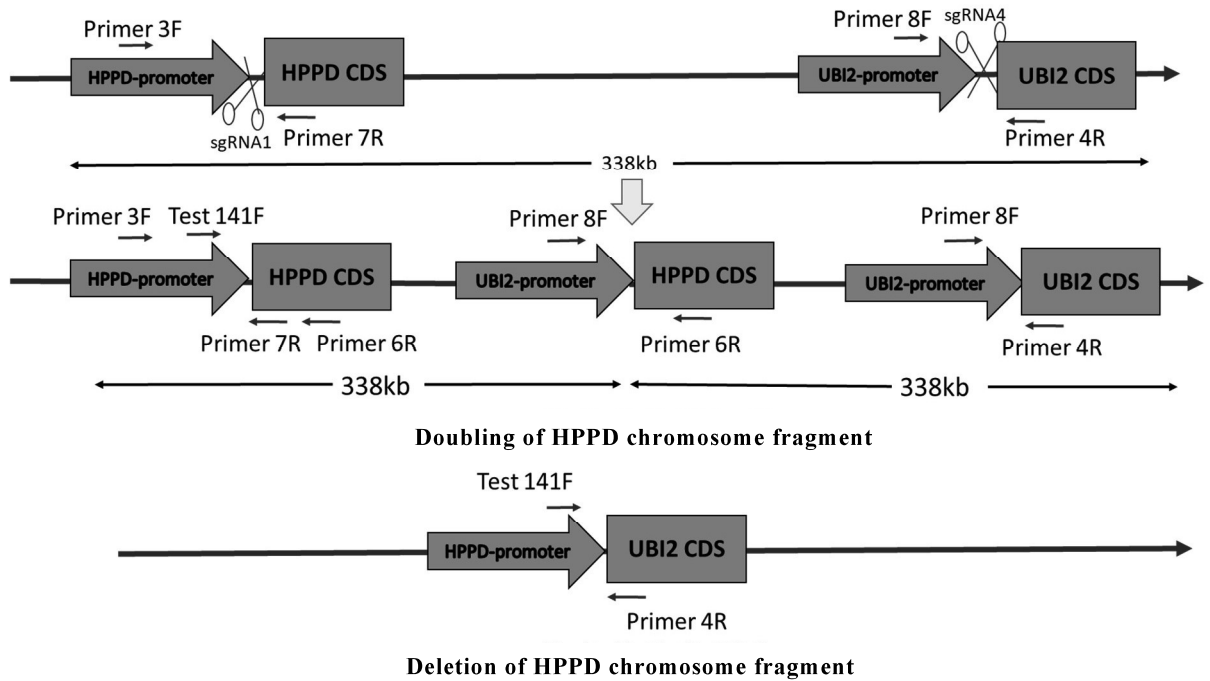


Figure 11

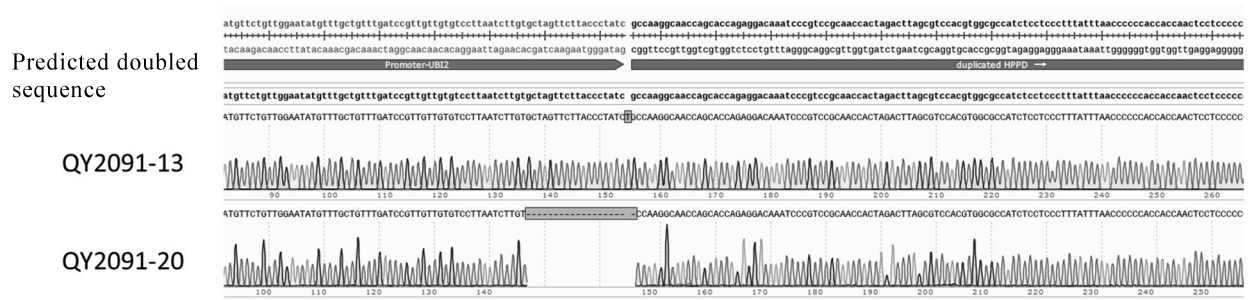


Figure 12

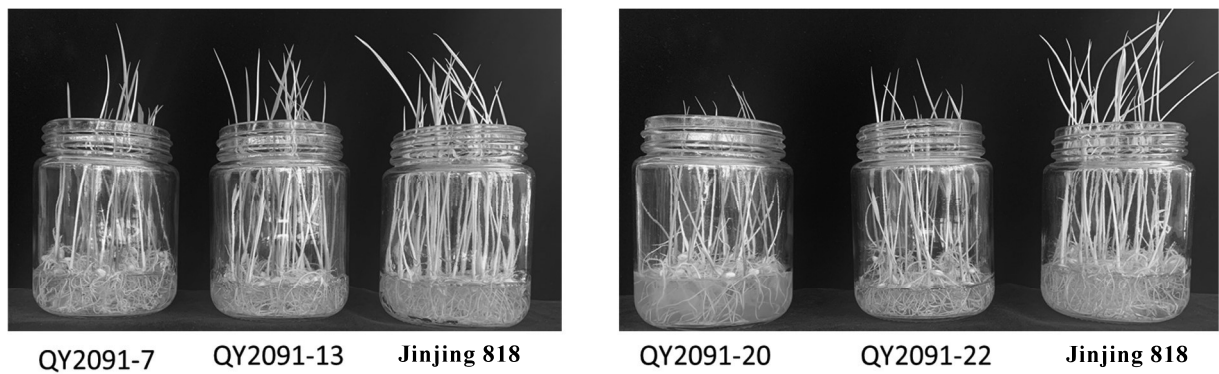


Figure 13

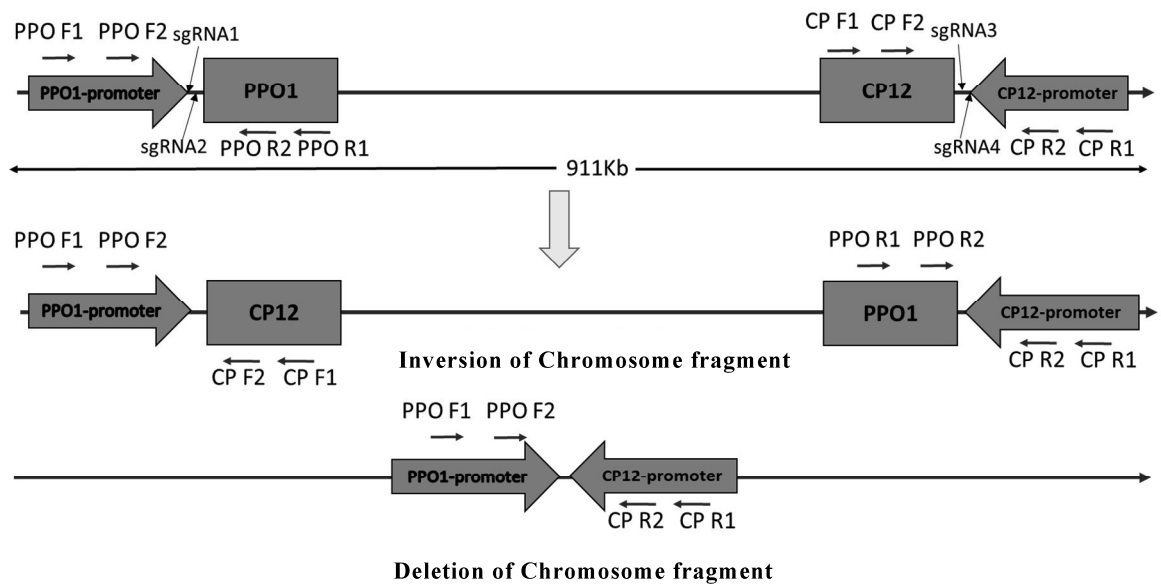


Figure 14

GGGCGGATTTGACGGAGGGGCGGAGAGGAGGAGGATCCTGTTGGAGAGCGACTTGGACCTGGCAGCTGAACCGCCC
CGGAGATCTCCTGATGGGCTGGAGCACGATCTCTCCGCCTTCGCCGCCGGCGCTGCCACCGACGACGACGACGCGGAC
GCCACCACCACCGCCTCCCGCCGCCCGCGCCCGACCCGCACCCGCATCCCCCGCGCGCCGCGGGCGGGCAGCCGCAG
CTGCTTCCGCGACGAGAACGCCGCCGACGCCGCCACGGCCTGGTCCAGGGACACCGCCGCCGACCCGCGGGCGTTGGAC
GCCATGGTCGCCGCCATTGCGGTGTGGTGGCGAGGAGAGGCGGAGATGGCGAGGTTGTGGGGTGGGAGATGGGATGGG
TTATGTATAGACTTGGGGGTGCGTTTTGGGGGGA CTAGCCAATAAAAAGGAGGGGGCTATGGTGTGGCCGTTTGACA
T

TTTTCGTTGGAGGGGCGGAGAGGAGGAGGATCCTGTTGGAGAGCGACTTGGACCCTGGCAGCTGAACCGCCCCGGAGAT
CTCCCTGATGGGCTGGAGCACGATCTCCTCCGCCTTCGCCGCCGGCGCTGCCACCGACGACGACGACGCGGACGCCACCA
CCACCGCCTCCCGCCGCCCGCCGCGCCGCACCCGCACCCGCATCCCCCGCGCGCCGCGGCGGGCAGCCGCAGCTGCTTC
CGCGACGAGAACGCCGCCGACGCCGCCACGGCCTGGTCCAGGGACACCGCCGCCGACCCGCGGCGTGGACGCCATGG
TCGCCGCCATTGGACGAGTCGGAATCGCAGACCGATACCAGGATCTTGCCATCCTATGGAAGTGCCTCGGTCCATGGCCCGG
CACTCCGTCGCGCGCGCGCACGCCACCATCGCCGCGCGCGCGGGTGCCGCGCGCCAGCGCCCGCGCCGCCGAGCGCCT
CGGGTTCCGCTCAGCGCGCTCGCCGGCCGCGGCTCCGCTCCCGCTCCGCTCGCGCGCGCCATCGGCGTCCGC
GTCGCGCCGCGCCACCAACAACCGCGTGC GCGCGCGCGCGGTTCGAGACGCTCGAGGGGCAGGCGGCGACGGGGGCGCT
GCTCGAGAAGTCGGAAACCCCCGAATCCAAA

GAACGATGCGAGCCCCACGCTCGACCGCCGCCGCGCACGCGGTTGTTGTGGCGGCGGCGGACGCGGACGCCGATGG
CGCGCCGCGGCGAGGCGGGAGCGGGGAGCGGAGGCCGCGGCCGCGGAGCGCGCTGAGGCGGAACCCGAGGCGCTCC
GCGGCGCGGGGCGCTGGCGCGGCGGCACCCGCGCGCGCGGCGATGGTGGCGTGCGCGGCGGCGACGGAGTGCGCGGC
CATGGCGAGAGGAGTGATGGTCACCTGACTACCGGTCCCCTCAAACCTGGTTAATTTCCCCTGGCAAAATCCACCTCCGA
CCTACAATTTAAGCTCCCCTTTTTTTTTTTAAAAAAAAGAGGGTAAACCAACTAACCTAGCTTGACCTTTTTTAA
TGGAGTAAGGGATTTAAAACAAAAAAATAATCCAACCTGGTAAAAAACAACAACCATTTAAATAAAAAATTTT
CCCAAAGGGAATTCCTGGCGAAAAAATCTATGCCCTCTGGGTCTATCTTGGTATTTTCCCCGGGGCTCCGTTTCATCC
TTCATTTTGGCGAATACAAAAAAACCGTTTGAATTTTTTTGGTTGAAAGAATGGCAATTTACTGGCCAGGATCATGTACTC
TGCATCTAAGAATTGATTTTTTGACCCAAATTTCAACTTAGCCTCCATCGCAGTAGTGCGCACACAGGCTGAAGGTGACT
CTTAGACCCAATGTCACATCTCAGCAATATGCAGAGAGAATGACCCAA

AGAACGATGCGCAGCCTCGGCGTCTCGACCGCCGCCGCGCACGCGTTGTTGTGGCGGCGGCGGACGCGGACGCCG
ATGGCGCGCCGCGGCGAGGCGGGAGCGGGAGCGGAGGCCGCGGCCGCGGAGCGCGCTGAGGCGGAACCCGAGGCG
CTCCGGCGGCGCGGGCGCTGGCGCGGCGGCACCCGCGCGCGCGGCGATGTTGGCGTGCGCGGCGGCGACGGAGTGCG
CGGCCATGGCGAGAGGAGTGTTGGTGGGTACCCCTTCAAACCCCAAAAGAGTGGGTGGGTCTCTCTTTGGCTCTCGGC
GGGGGCTGCTTCCCAAAAGACCGCCATCAGACGTGAGTGAAGTCAAGTCTGCAACTACCACTCCAGGTGCTCTCCCTTA
AATTACTTTACTACTACCTTTATTCTAGGGGCGGTTCAGATAATTGCCAAAATCACTCGCAACATTTTTAATAATATTAGGATG
AAATATATATGTCGCGCAAATTTTCTACTGTTACTGAAATTTGGACACAACTACACACCAGGTATATTTATCTTTTACCA
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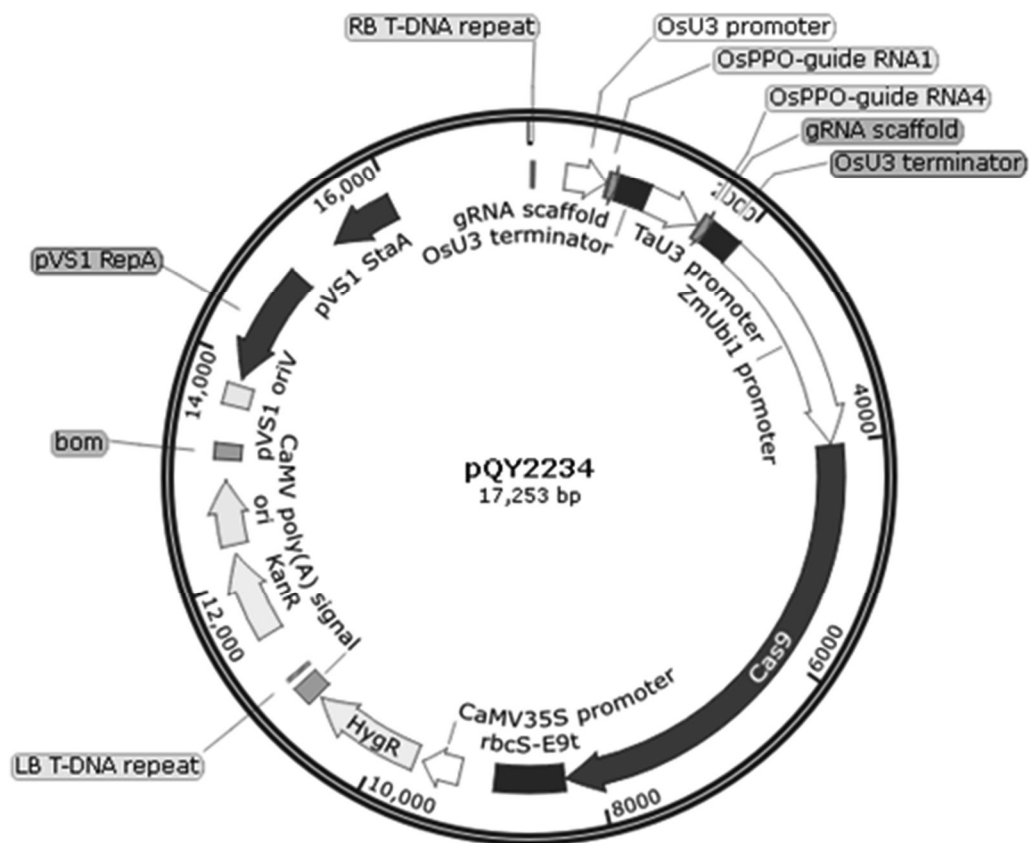


Figure 16

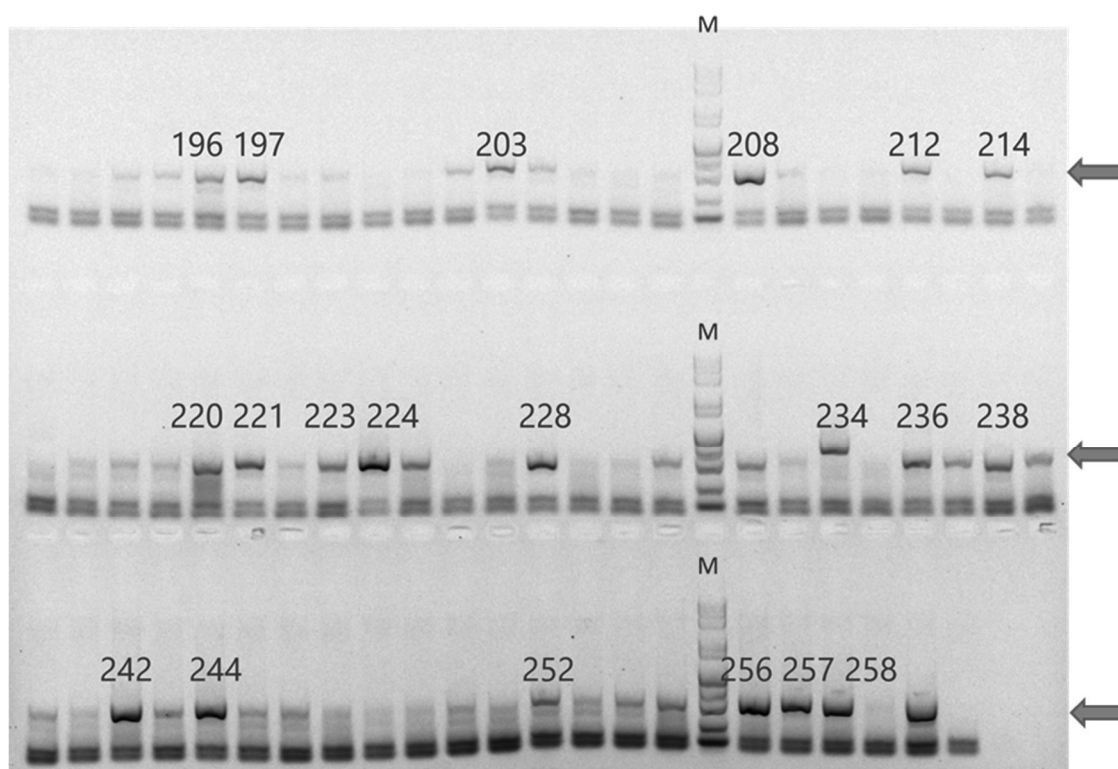


Figure 17

2081 resistance test for QY2234 PPO1 inversion lines

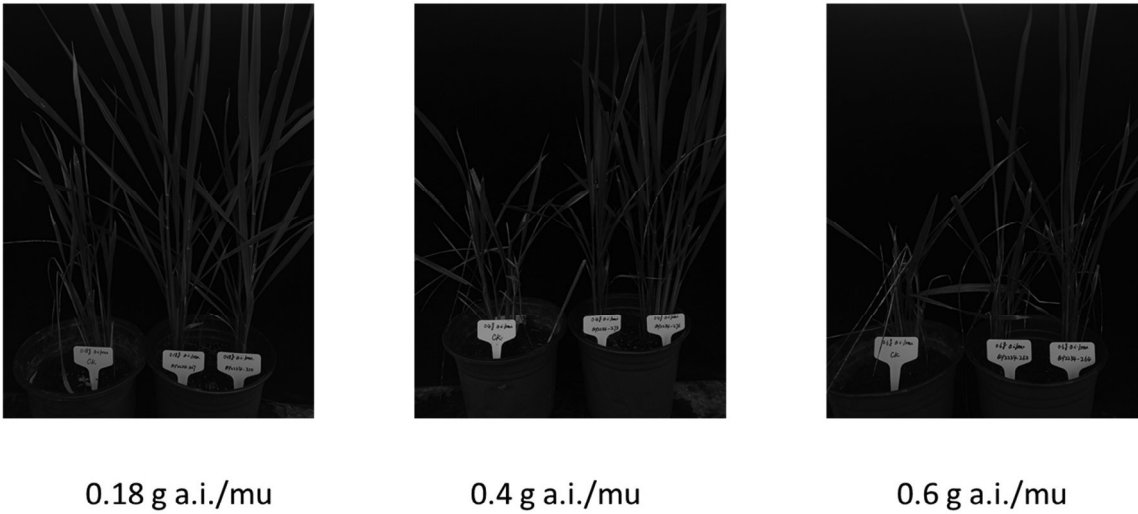


Figure 18

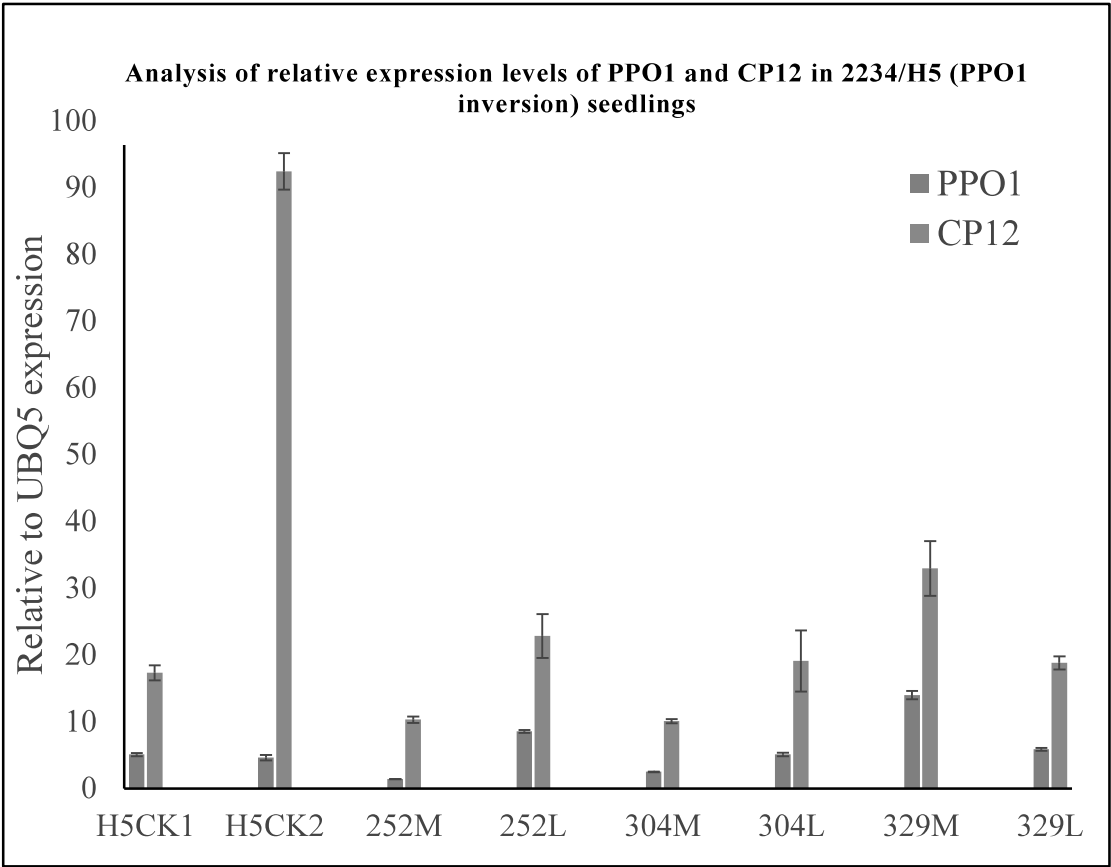


Figure 19

Predicted PPO1
inversion sequence

QY2234/H5-159

QY2234/H5-232

QY2234/H5-263

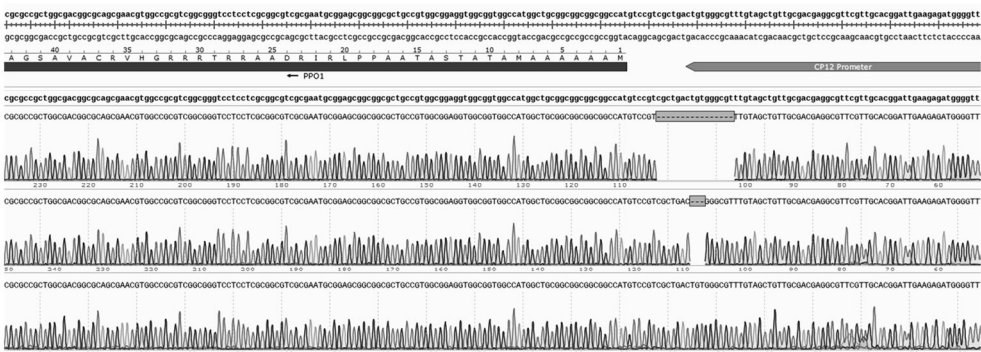


Figure 20

Predicted PPO1
inversion sequence

QY2234/818-205

QY2234/818-207

QY2234/818-580

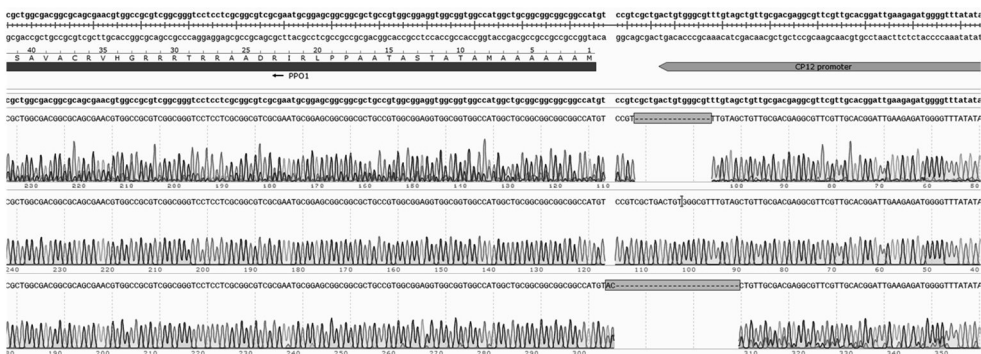
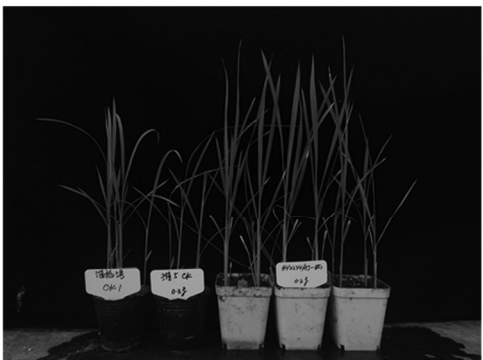
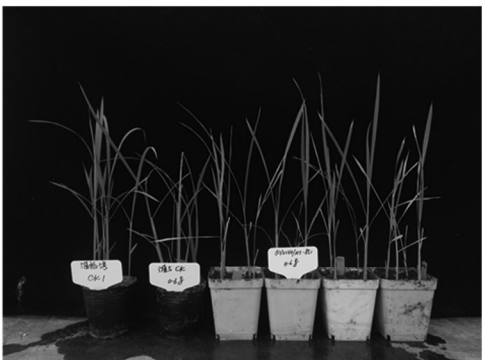


Figure 21

2081 resistance test for QY2234/H5-851 T1 generation at seedling stage



0.3 g a.i./mu



0.6 g a.i./mu



0.9 g a.i./mu



1.2 g a.i./mu

Figure 22