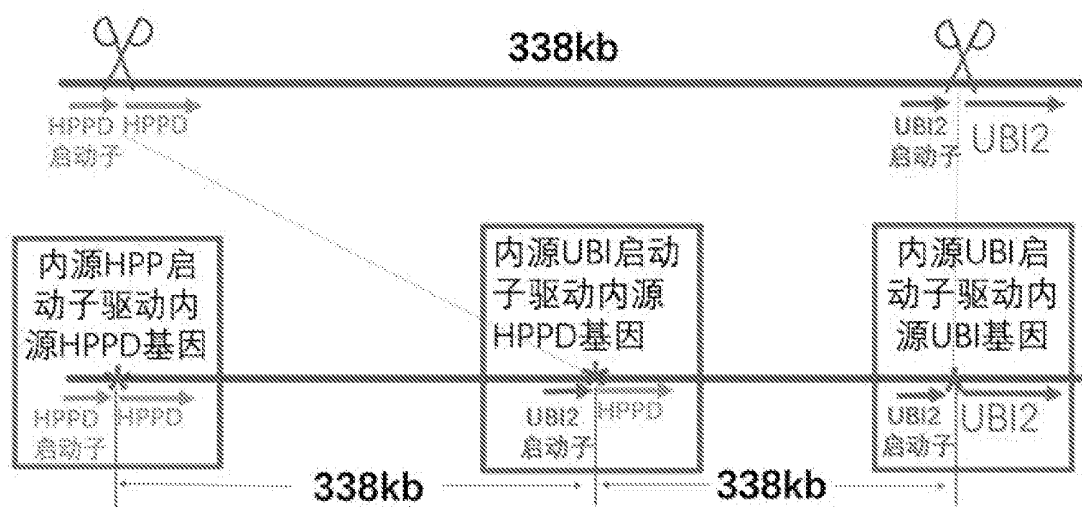


方案 1 加倍



方案 2 两次连续倒置

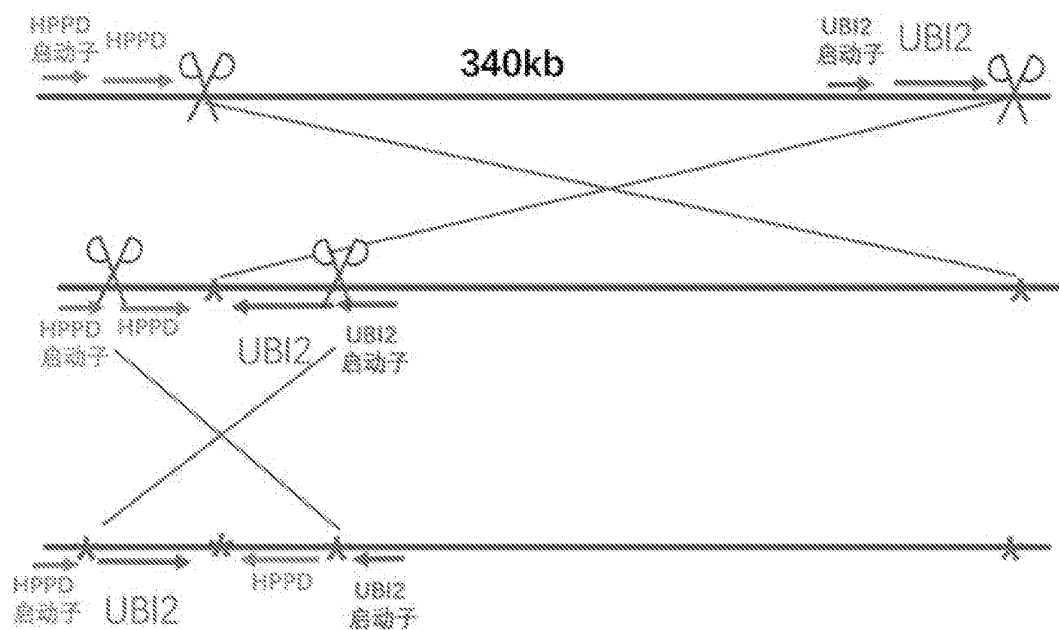
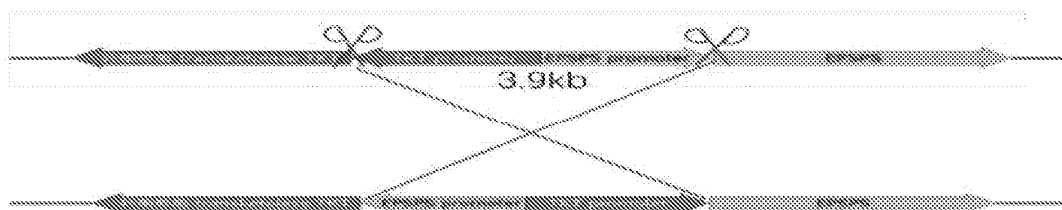
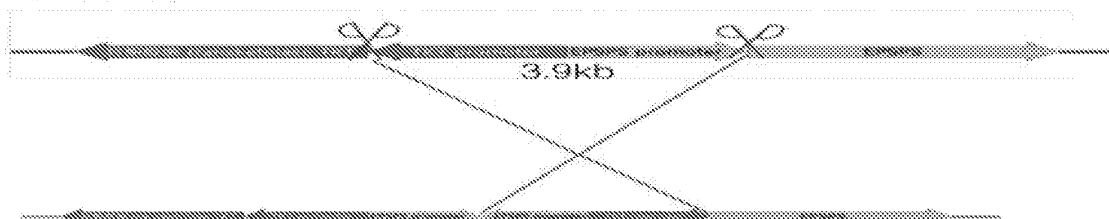


图 1

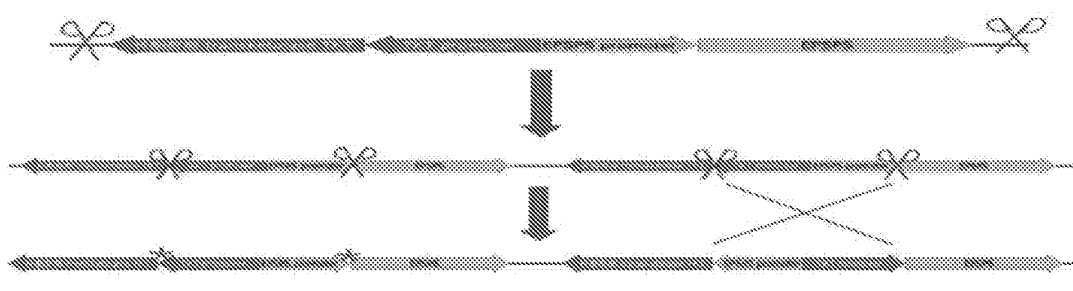
方案1 倒置



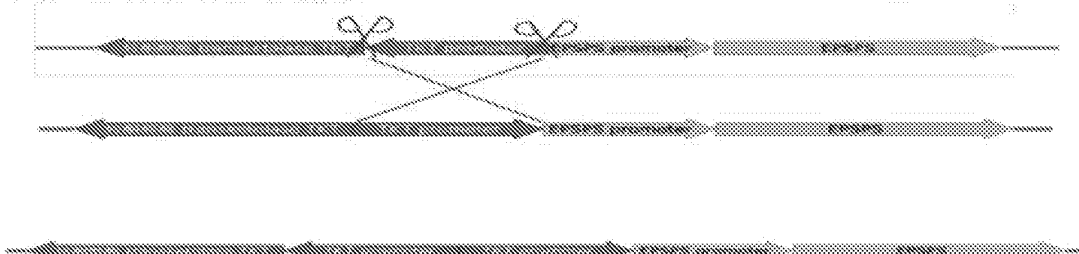
方案2 倒置加倍



方案3 先加倍再倒置



方案4 TKT 启动子倒置和倒置加倍



方案5 先倒置再加倍

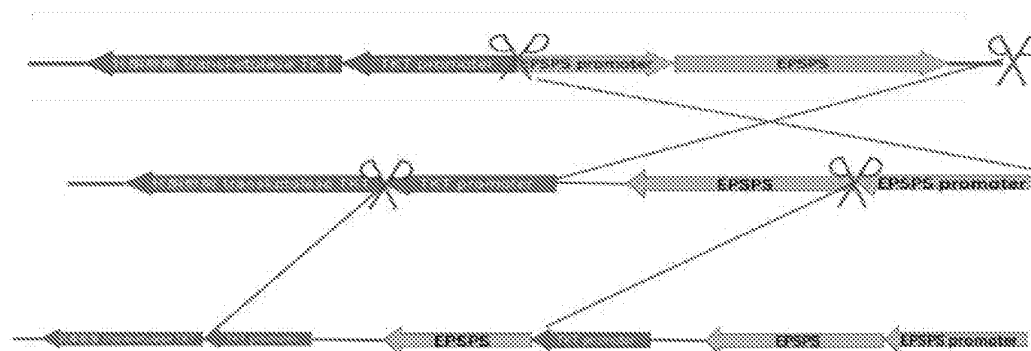


图2

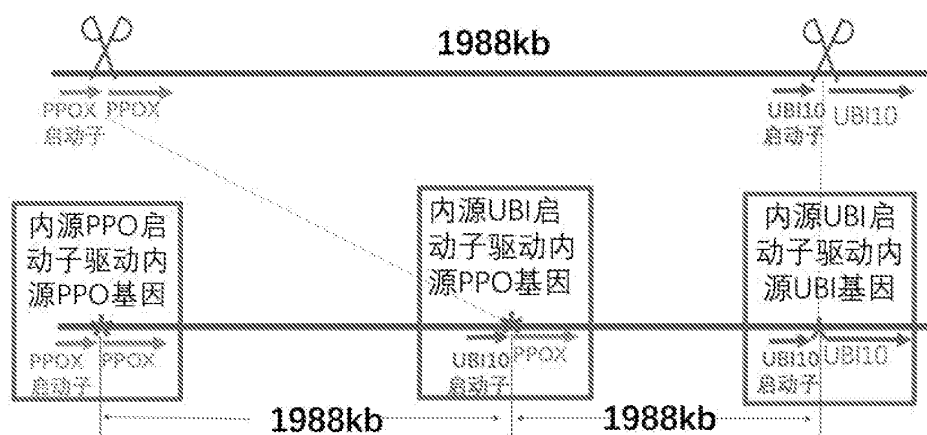
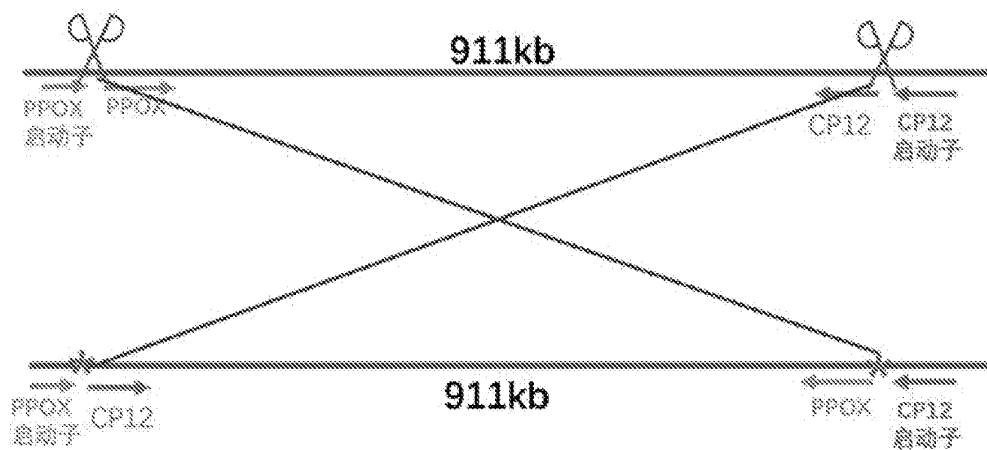


图 3

方案 1 倒置



方案 2 先倒置，再加倍

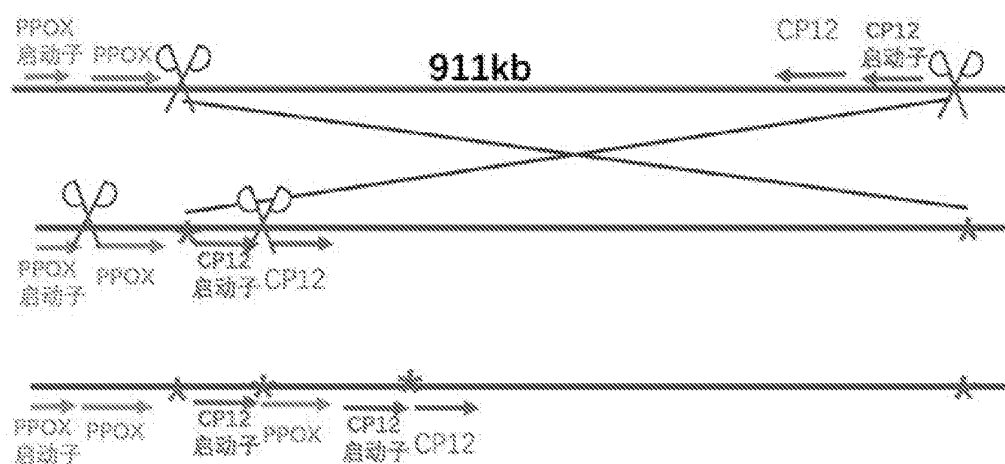


图 4

(1) pQY002056 载体转化原生质体, 实现加倍的测序结果 (下划线部分为 Ubiquitin2 基因启动子, 斜体部分为 HPPD 基因表达区)

TTCAAGTCCATAGGCGAGGCGACCGGCCCGCGCGGACGCGGCGTCGGCGCACCAGAGCTCGACGTGGTGGAAACGCGA
GCGCCTGGAAACCGGTGCTCCGCGGGTTGGCGCGGACGAAGCGGCGGTGCCGACGAGGCGGAACCCCGCTTCTCCCC
CGCCGCCGCGAGCGGCCGAGACGGCGCCGGTGGTGGCGGTGGGGGTGGGAGTGGGAGGCATGGCGCGCGCGCGCGCG
GCGTGGCGTGGCGCGTCTGGGGTGTGGGGGAGTGGATGACAGTGGCGGCGTGGGGGGAGGAGTTGGTGGTGGGGGG
TTAAATAAAGGGAGGAGATGGCGCCACGTGGACGCTAAGTCTAGTGGTTGCGGACGGGATTTGTCCTCTGGTGTGGTTG
CCTTGGCAGATAGGGTAAGAACTAGCACAAAGATTAAGGACACAACAACGGATCAAAAGCAAAATATTCCAACAGAAACATA
CATGTATTCAAAAAGATAGTAACAGGCAATCACAATGTATTGATAGGTAGTAACAGCACACGTATCCTGAACCTTCATAAA
TAAGTAGAATGAAGTGTGGCAATAACTTTTCAACAGAAATCTCCCTGTTTTCAATATGTAGTAACAGCACACGTATCCT
GTAATTCAAACTTAGTAGAATGAAGTGTGGCAGTAATCTTTACACAGAAAGAATGAAGTGTGGCAATAATCTTTACAC
AGAATGTTGGTTGATGGATAG

(2) pQY002058 载体转化原生质体, 实现加倍的测序结果 (下划线部分为 Ubiquitin2 基因启动子, 斜体部分为 HPPD 基因表达区)

CAACGTGCCTTAGGCGAGGCGACCGGCCCGCGCGGACGCGGCGTCGGCGCACCAGAGCTCGACGTGGTGGAAACGCGA
GCGCCTGGAAACCGGTGCTCCGCGGGTTGGCGCGGACGAAGCGGCGGTGCCGACGAGGCGGAACCCCGCTTCTCCCC
CGCCGCCGCGAGCGGCCGAGACGGCGCCGGTGGTGGCGGTGGGGGTGGGAGTGGGAGGCATGGCGCGCGCGCGCGCG
GCGTGGCGTGGCGCGTCTGGGGTGTGGGGGAGTGGATGACAGTGGCGGCGTGGGGGGAGGAGTTGGTGGTGGGGGG
TTAAATAAAGGGAGGAGATGGCGCCACGTGGACGCTAAGTCTAGTGGTTGCGGACGGGATTTGTCCTCTGGTGTGGTTG
CCTTGGAGATAGGGTAAGAACTAGCACAAGATTAAGGACACAACAACGGATCAAAAGCAAAATATTCCAACAGAAACATA
ATGTATTCAAAAAGATAGTAACAGGCACATCACATGTATTGATAGGTAGTAACAGCACACGTATCCTGAACCTTCAGAAAT
AAGTAGAATGAAGTGTGGCAATAACTTTTCCCCCAAAAACCTGTC

图 5

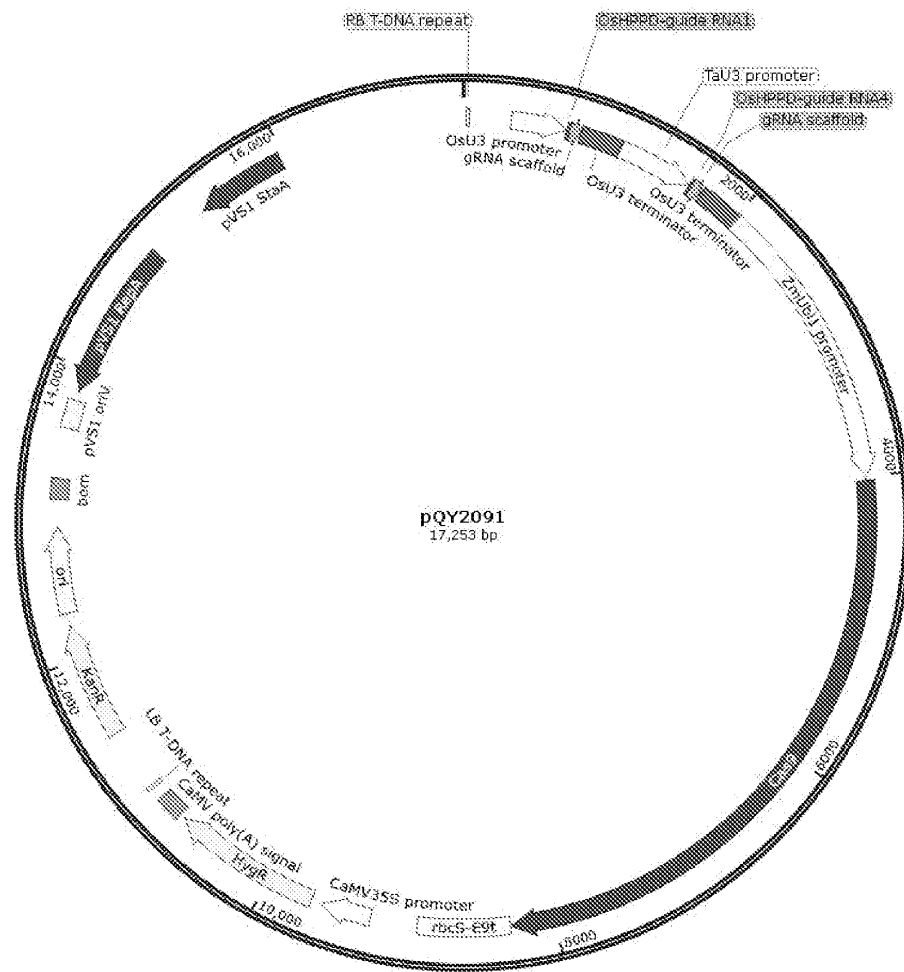


图 6

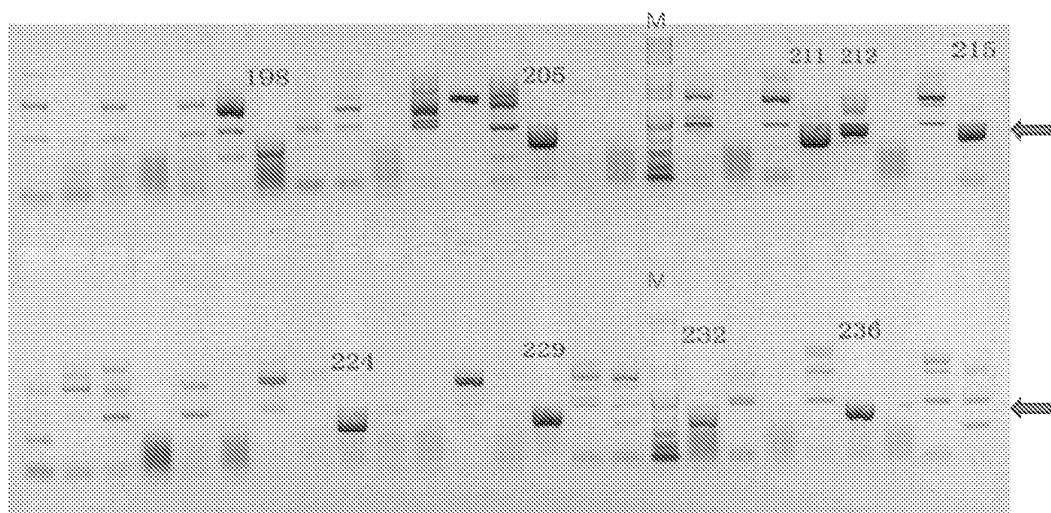


图 7

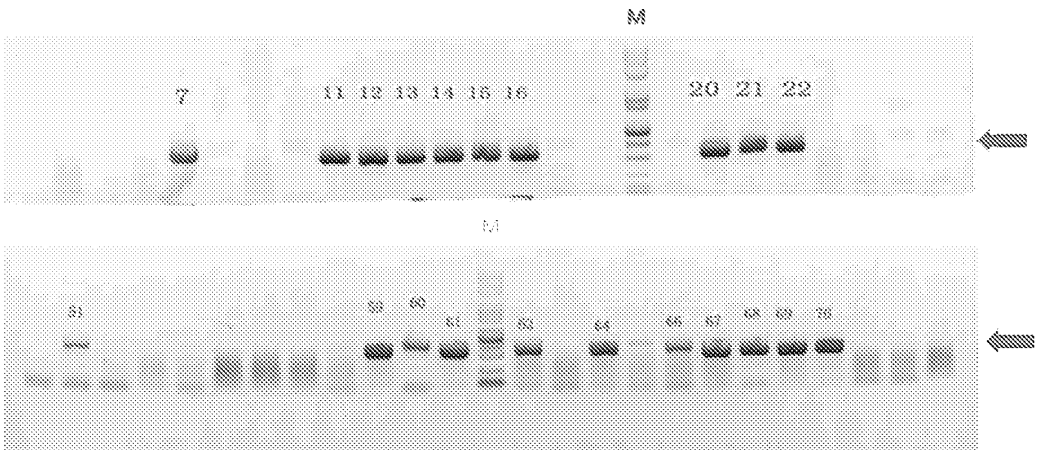


图 8

QY2091敲高HPPD株系双唑草酮抗性测试

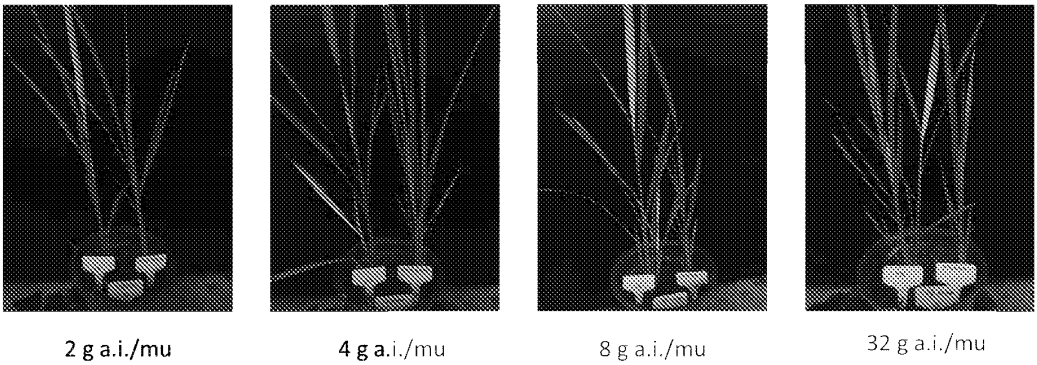


图 9

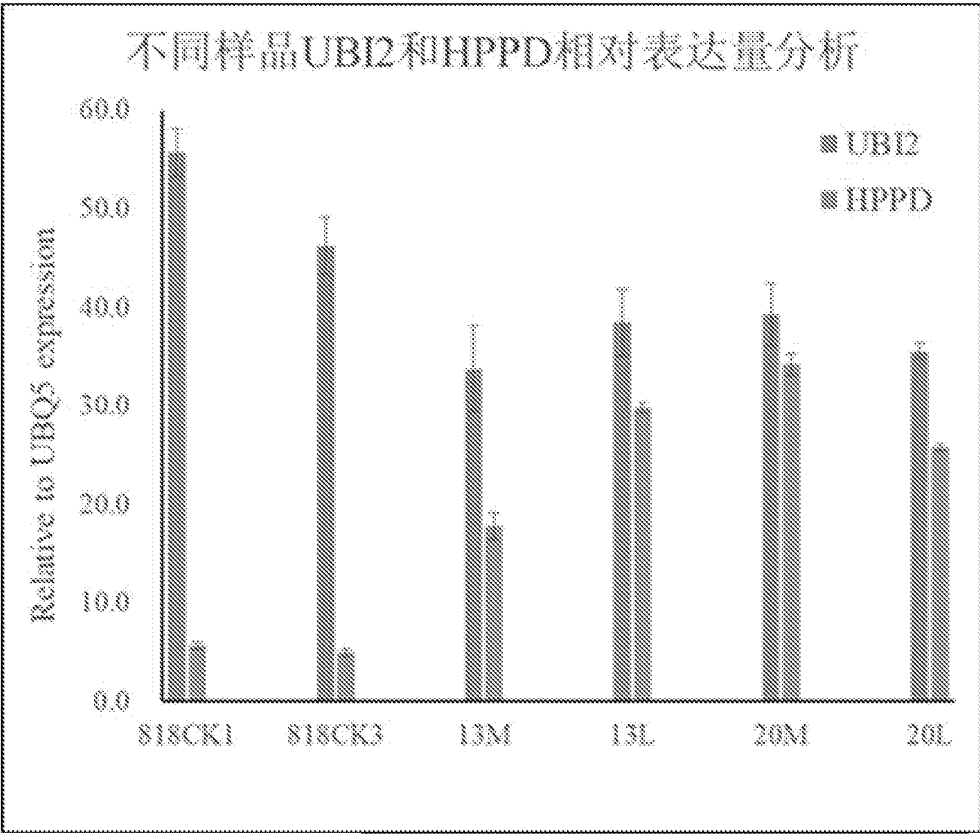


图 10

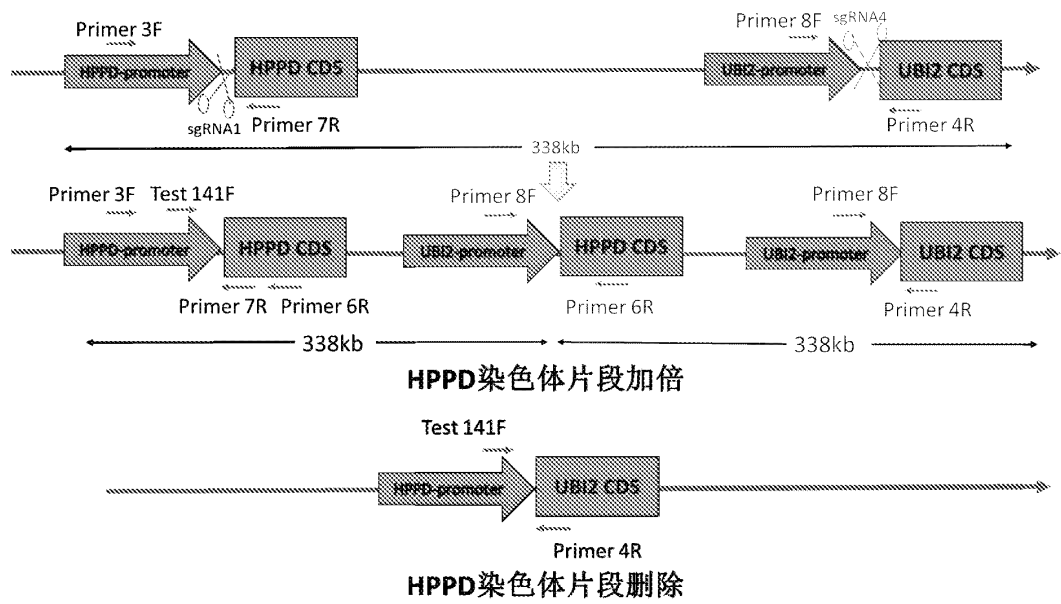


图 11

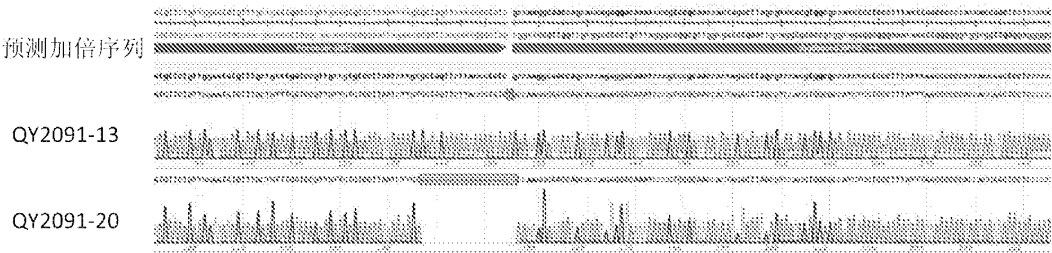


图 12

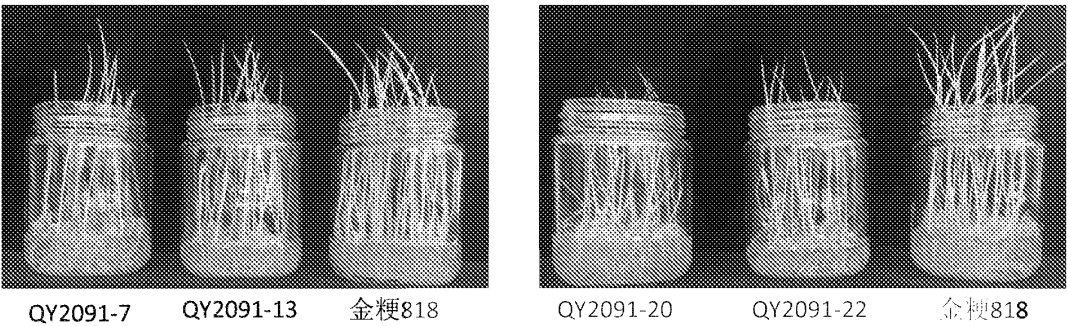


图 13

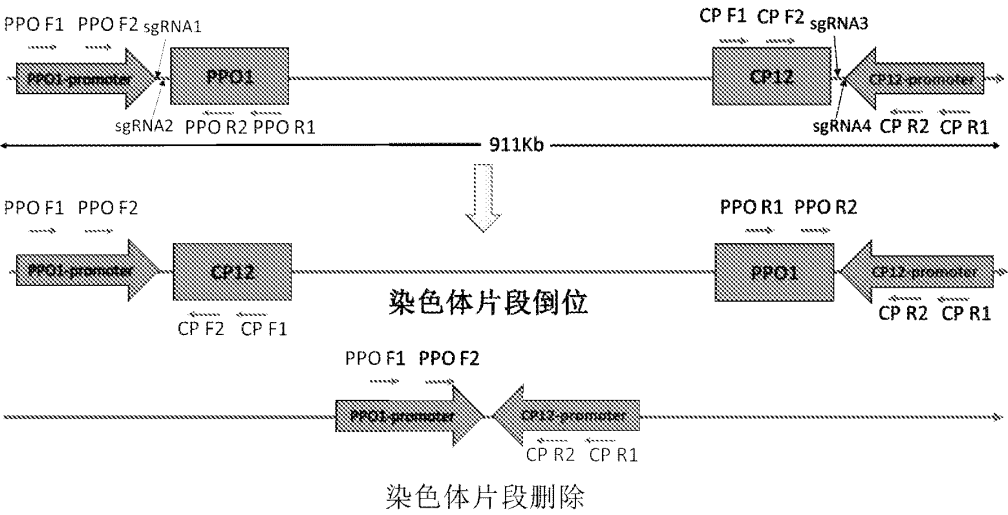


图 14

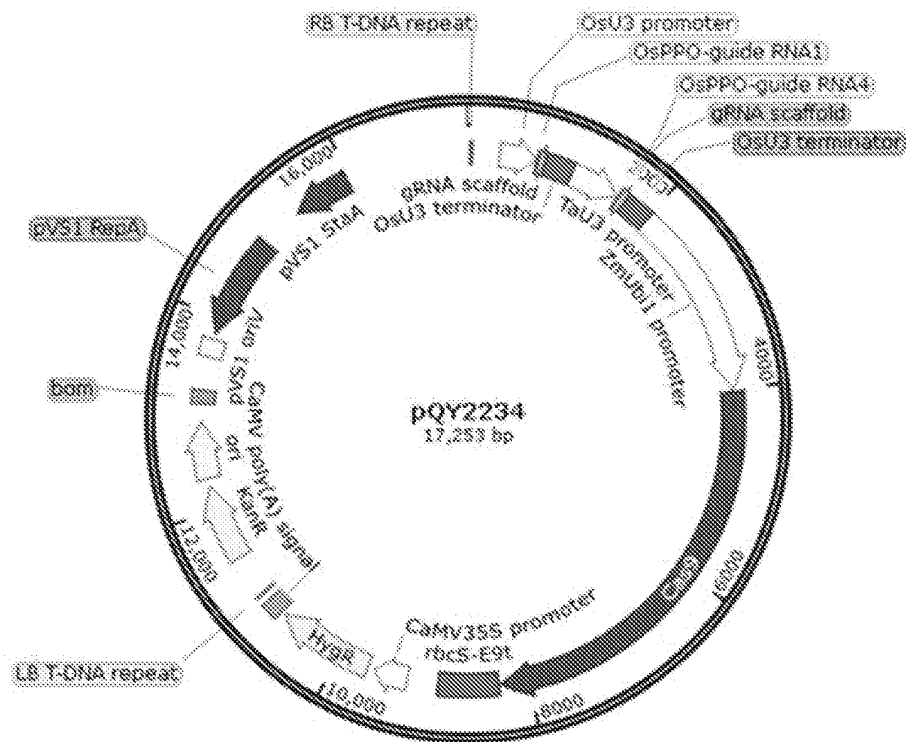


图 16

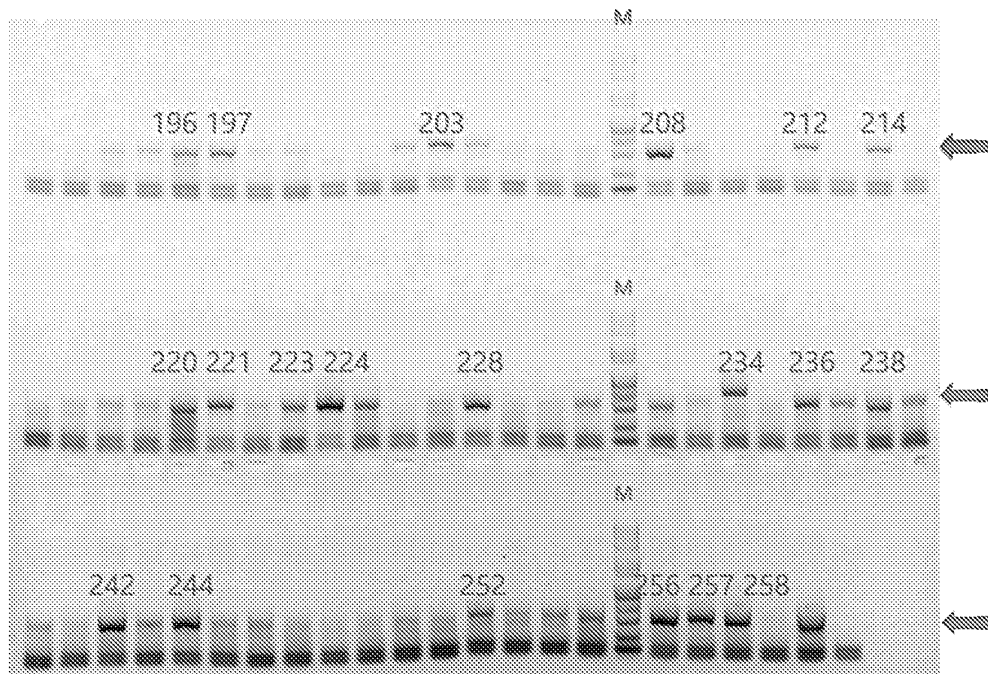


图 17

QY2234 PPO1倒位株系2081抗性测试

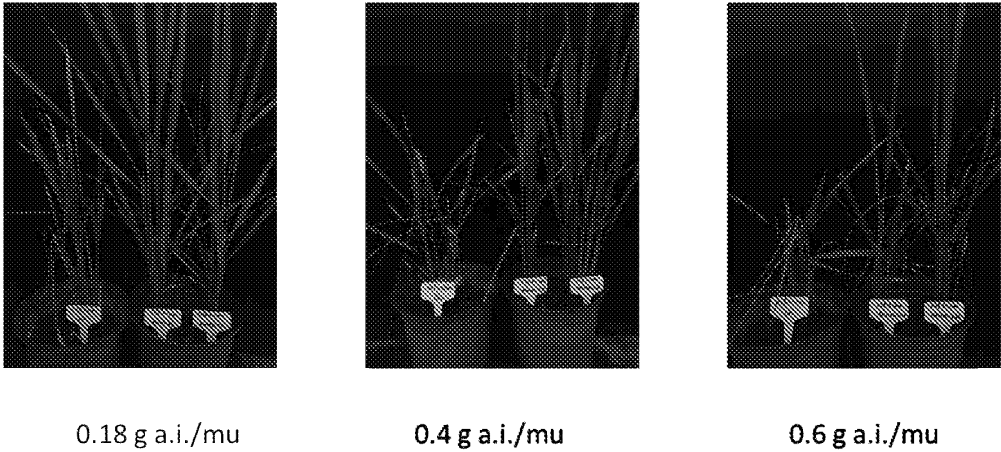


图 18

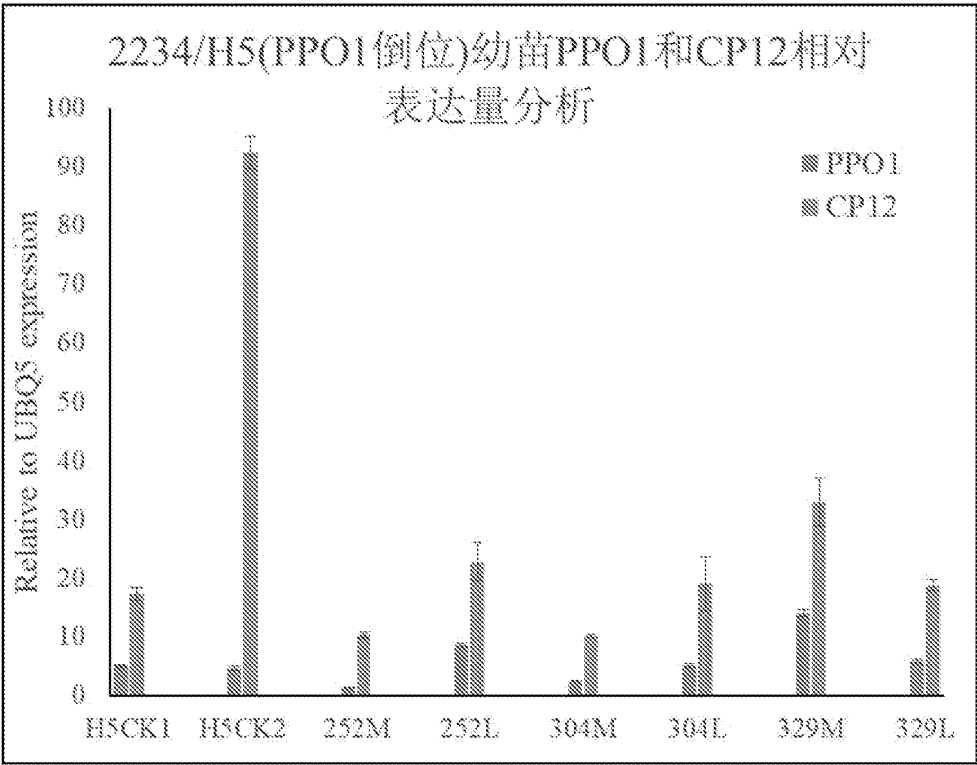


图 19

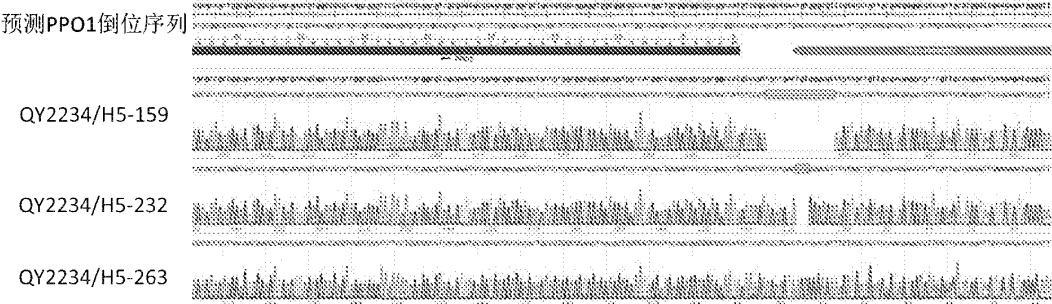


图 20

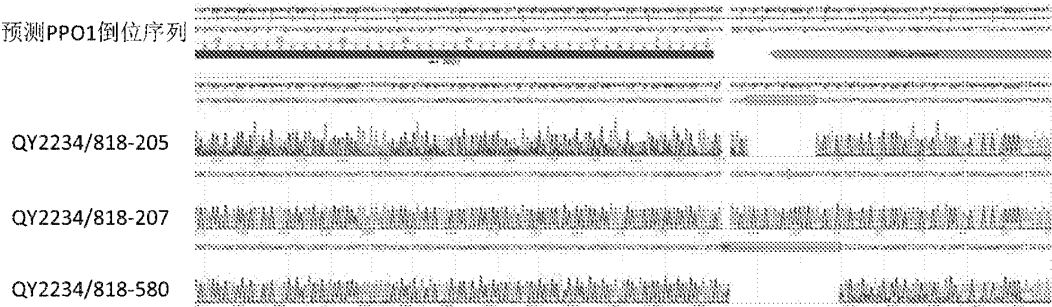


图 21

QY2234/H5-851 T1代苗期2081抗性测试

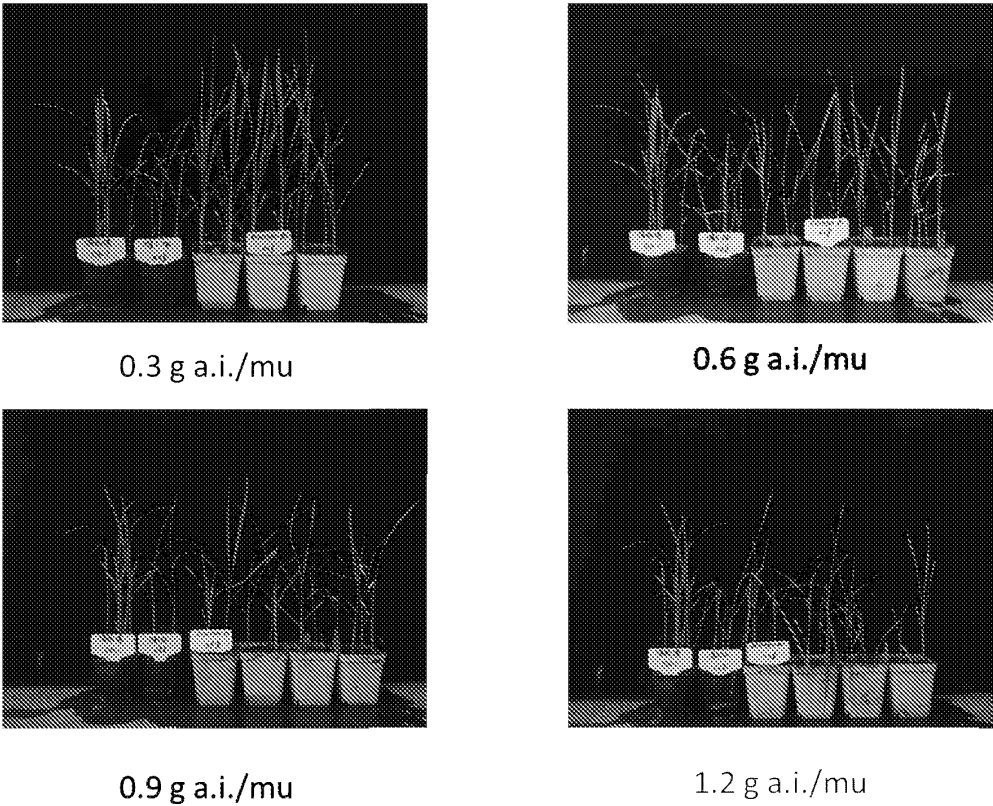


图 22