Supplementary material: Figures

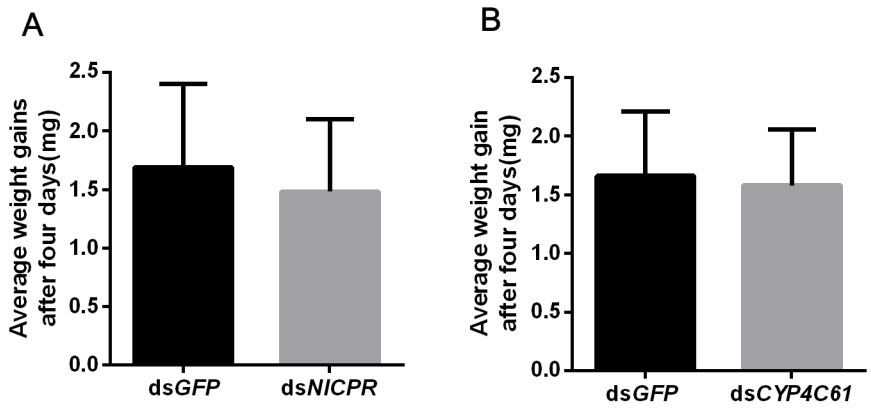

Figure S1. Weight gain of dsRNA-treated BPH feeding on TN1. (A) Weight gain of *NlCPR* dsRNA-treated BPH feeding on TN1. (B) Weight gain of *CYP4C61* dsRNA-treated BPH feeding on TN1.

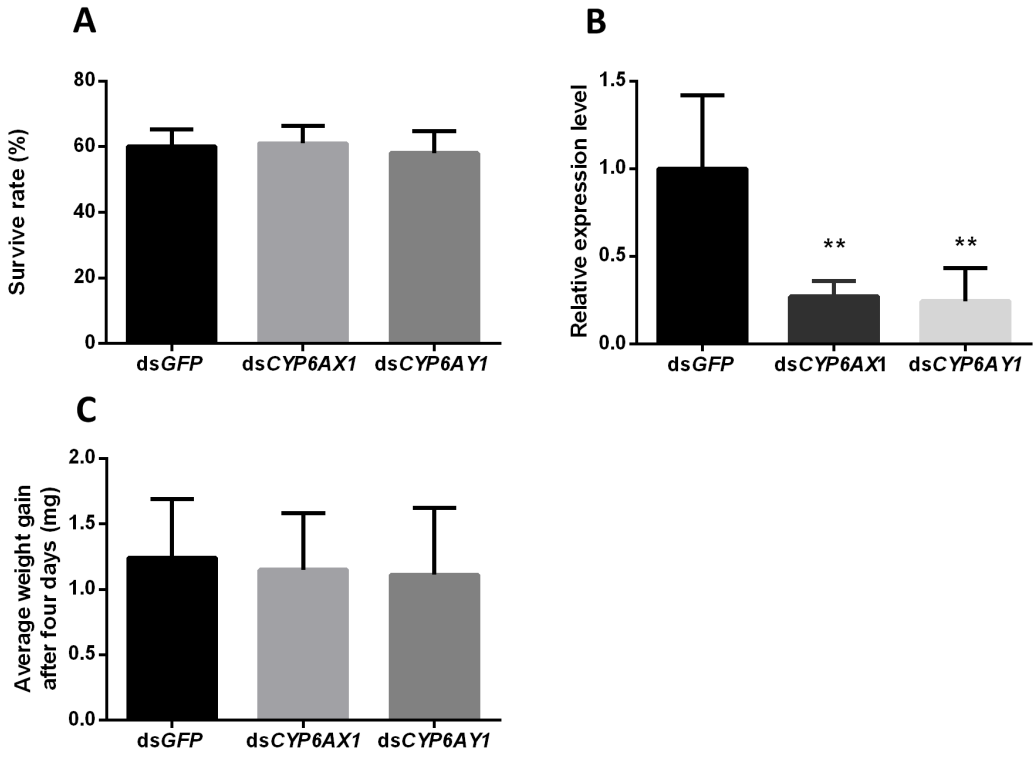

Figure S2. Analysis of the knockdown of biotype Y BPH *CYP6AX1* and biotype Y BPH *CYP6AY1*. (A) Survival rates of biotype Y BPH treated with *CYP6AX1* and *CYP6AY1* and *GFP* dsRNA. (B) qRT-PCR analysis of the effects of *CYP6AX1* and *CYP6AY1* knockdown. (C) Weight gain of dsRNA-treated BPH. ** on the bars indicates significance at $P < 0.01$(t-test) when compared with the control.

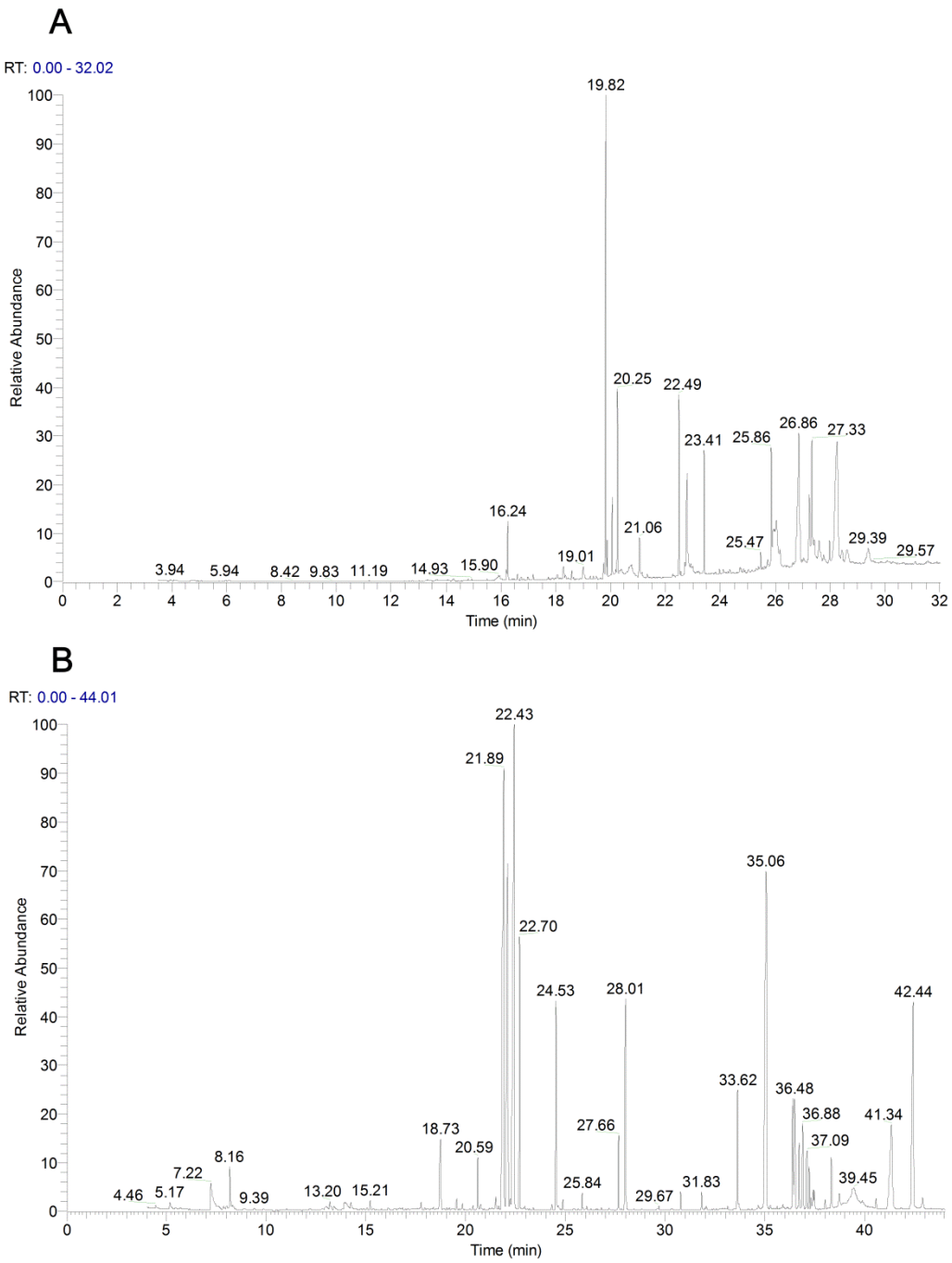

Figure S3. GC–MS total ion chromatograms (TIC) of the rice leaf sheath extract and honeydew samples. (A) TIC of the rice leaf sheath extract sample. (B) TIC of the honeydew sample.

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BY CYP4C61   1    ATGAAGATGATTACTTTAATATTGACTTCGTTTGCTCTCGCTATCATTGTAACATACCTT
B1 CYP4C61   1    ............................................................
CYP4C61v1    1    ............................................................
CYP4C61v2    1    ~~~~~~..........C...........................................

BY CYP4C61   61   GTTAAGTTGTCCTATAGAAGATATCAATTTCTGAGAAAGCTCAAAGGATTGCCTGGGCCT
B1 CYP4C61   61   ..A...C.........................G...........................
CYP4C61v1    61   ..A...C.........................G...........................
CYP4C61v2    55   ......C.....................................................

BY CYP4C61   121  AAGGCTTATCCAATTGTTGGAGACTCATTGGAAATGCTATATTTGAAGAGGAATGAATTG
B1 CYP4C61   121  ........................G...................................
CYP4C61v1    121  ........................G...................................
CYP4C61v2    115  ............................................................

BY CYP4C61   181  ATGAAAATGAACAGTGAAAAAAGAGAGTTATACAAATCAATCTACTTGGAATGGTCAGGT
B1 CYP4C61   181  ............................................................
CYP4C61v1    181  ............................................................
CYP4C61v2    175  ............................................................

BY CYP4C61   241  CCATTTGCTGAAATCCATCTTCTAAGGCCAGAATATGTTGAGGTCGCATTGAAAAGTACT
B1 CYP4C61   241  ..................................................G.........
CYP4C61v1    241  ..............................................G.....G.........
CYP4C61v2    235  ............................................................

BY CYP4C61   301  GTCAACATAACAAAATCAATGGCTTATGACTTCCTTCATGACTGGCTTGGAACTGGTCTA
B1 CYP4C61   301  ..........................T.................................
CYP4C61v1    301  ..........................T.................................
CYP4C61v2    295  ............................................................

BY CYP4C61   361  CTCACAAGCACAGGCAGAAAATGGCAAGAACGACGTAAAATGATCACTCCTGCTTTTCAT
B1 CYP4C61   361  ..........................A.............T.....................
CYP4C61v1    361  .........T................A.............T.....................
CYP4C61v2    355  ..........................A.............T.....................

BY CYP4C61   421  TTCGGGATCCTGGAGGATTTTGTCGAGATATTTGGAGAGAAGAGCAGAACTCTTGTAGAA
B1 CYP4C61   421  ..................................................G.........
CYP4C61v1    421  ............................................................
CYP4C61v2    415  ............................................................

BY CYP4C61   481  ATATTGAAGAAACAAAAATTCGGAGAGGAATTCGACATGTATCCGATGATAACAAACTGT
B1 CYP4C61   481  ..................................................G.........
CYP4C61v1    481  ....................................C.......................
CYP4C61v2    475  ............................................................

BY CYP4C61   541  GCATTGGATATTATTTGCGAATCGGCGATGGGAACCACGGTGAATGCACAGGAGAAAAAG
B1 CYP4C61   541  ..T..............................C.......................
CYP4C61v1    541  ............................................................
CYP4C61v2    535  ............................................................

BY CYP4C61   601  GACTCTGATTATGTGAGAGCGGTCTATGAAGTCAGTGAACTAATACTCTACAGAGCTTTG
B1 CYP4C61   601  ............................................................
CYP4C61v1    601  ....................................T.......................
CYP4C61v2    595  ............................................................

BY CYP4C61   661  AGACCATGGCTATATGCAGAGTTTATATGGAAGATGTCAAGTCATGGAAAAGCATTTTAC
B1 CYP4C61   661  ............................................................
CYP4C61v1    661  ..........C.................................................
CYP4C61v2    655  ............................................................

BY CYP4C61   721  AGGAATTTGAAAACTCTACATGACTTCACAAATAAAGTAATAGTGGAGCGTAGAGAAGCC
B1 CYP4C61   721  ..................................................A.........
CYP4C61v1    721  ............................................................
CYP4C61v2    715  ............................................................

BY CYP4C61   781  ACTTCTAAAAAATGTTCTCTGAACGAGTCTTACGATGGAGTTGGAAGAAGAAAGAAGAAG
B1 CYP4C61   781  ....................C.......G...............................
CYP4C61v1    781  ............................G.............~~~~~...~.........
CYP4C61v2    775  ............................G...............................
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BY CYP4C61   841  GCCTTTCTTGATTTGCTCCTCGAGGCAACTGAAAATGGACATGAGTTATCGCAAGCAGAC
B1 CYP4C61   841  ..................A.....................T.................TA..
CYP4C61v1    835  ..................A..T.....................................T...
CYP4C61v2    835  ..........................................................

BY CYP4C61   901  ATAAGAGAGGAGGTTGATACATTCATGTTTGAAGGCCACGATACGACGGCAGCAAGCATT
B1 CYP4C61   901  ..........................................A........T......
CYP4C61v1    895  ..........................................A........T......
CYP4C61v2    895  ..........................................A........T......

BY CYP4C61   961  GGCTGGGCGATATTTCTCCTGGGGAACAACCCTGAAGTTCAGGACAGAGTTGTGGAAGAA
B1 CYP4C61   961  ..T..............................A............................
CYP4C61v1    955  ..T..............................A.......................G...
CYP4C61v2    955  ..T..............................A..................G.....T...

BY CYP4C61   1021 TTGAATGATATCTTTGGTGACTCAGATCGGTTGGCTACCATACATGATCTGAATGACATG
B1 CYP4C61   1021 ..........................................................
CYP4C61v1    1015 ..........................................................
CYP4C61v2    1015 ..................C..T..............C.....................

BY CYP4C61   1081 AAATATTTAGAAATGGTCATTAAAGAAACATTAAGGCTCTATCCGAGTGTACCATTCATT
B1 CYP4C61   1081 ..G.....................................................T...
CYP4C61v1    1075 ..G.....................................................T...
CYP4C61v2    1075 ..G.....................................................T...

BY CYP4C61   1141 GGGAGGCTTGTTACTCAAGACATGGTTGTTGGAGAGCATTTAATCCCAGCTGGTGTTTGG
B1 CYP4C61   1141 ................G.........................................
CYP4C61v1    1135 ................G.G.......................................
CYP4C61v2    1135 ................G.........................................

BY CYP4C61   1201 GTCAACATCGAATTATTTAGCGTGCACAGATGTAGAGATCATTATTCTGATCCAGAAAAG
B1 CYP4C61   1201 ...........G.....C.....................................
CYP4C61v1    1195 .................C.....................................T......
CYP4C61v2    1195 ..........................................................

BY CYP4C61   1261 TTTAACCCAGACAACTTCCTGCCAGAAAACACGAAAAGTCGACATCCTTTCGCATACGTT
B1 CYP4C61   1261 ..C.....................................................
CYP4C61v1    1255 ..C.....................................................
CYP4C61v2    1255 ..........................................................

BY CYP4C61   1321 CCATTTAGTGCTGGTCCCAGAAACTGCATTGGCCAAAAATTTGCTCTACTTGAAGAGAAG
B1 CYP4C61   1321 ..............................................C........A...
CYP4C61v1    1315 ............................A.............................
CYP4C61v2    1315 ..............................................C........A...

BY CYP4C61   1381 ACTATCCTATCTTCTATCTTGAGGAAATTCAGAGTAGAATCGACTGAAAAGCAAGAGGAT
B1 CYP4C61   1381 ..............C..A.................G.......................
CYP4C61v1    1375 ..........................................................
CYP4C61v2    1375 ..............C..A.................G.......................

BY CYP4C61   1441 ATCTGCTTAATGATGGATCTTGTTCTTCGACCAGAGTCTGGCGTCAAAATCAAAATGTAT
B1 CYP4C61   1441 .....TC.T.....................................T.............
CYP4C61v1    1435 ..........................................................
CYP4C61v2    1435 ..........................................T.............

BY CYP4C61   1501 CCTAGAGAACAATAA
B1 CYP4C61   1501 ...............
CYP4C61v1    1495 ...............
CYP4C61v2    1495 ........CA.TA.CAAACAATAA
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Figure S4. Alignment of *CYP4C61* gene open reading frame sequences of biotype Y and other BPH *CYP4C61* sequences. Single-nucleotide polymorphisms are indicated. Identical nucleotides are represented by dashes. BY CYP4C61: biotype Y

CYP4C61 sequence; B1 CYP4C61: biotype 1 *CYP4C61* sequence; CYP4C61v1: BPH *CYP4C61* sequence from GenBank (FM163384.1); CYP4C61v2: BPH *CYP4C61* sequence from GenBank (KM217037.1).