Supporting Information

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SI Text

Plant Materials and Growth Conditions. The *Epi-d1* mutant (natural mutant) has been maintained by seeds for >90 years in the plant breeding laboratory of Kyushu University. All nontransgenic plants used in this study were grown under natural field conditions in a research field at Nagoya University, Togo, Aichi, Japan. Seeds were immersed in water for 2 days and sown in a nursery bed. One-month-old seedlings were transplanted to the paddy field with a spacing of 20×35 cm. Transgenic plants were grown in a closed greenhouse.

Primer Sequences Used in This Article. d1–1002-U; 5'- AAAAAAGTAATTCCAATCACAAATCCGAA-3', d1–1002-L; 5'- CC-TCTCCTGATGATGCAGTG-3', d1–1005-U; 5'- GTTGAGTAACCACGTCTTCGACGTCTGC-3', d1–1005-L; 5'- GTG-AAATGGTATTGTTGGAAGAC-3', STS-1-U: 5'- TATGCC-AAGTACAATCTAATAAC-3', STS-1-L: 5'- TTTCCGACG-AGGAGTATTCC-3', STS-2-U: 5'- TGACACCGGCATAAA-AGACG-3', STS-2-L: 5'- TCGGGAGGATGTTTGCATCC-3', d1–8-U; 5'-CCACTATGCACATGTATGATATGA-3', d1–8-L; 5'-TCGCCTCTTGCACGAAAGCG-3', d1–17-U; 5'-TTAGTGTGGAAGCGCGTGGTTTTAAATGCGG-3',

d1-17-L; 5'- ATTTAGGTCCGGCATAAAAA-3', D1exon9-10U: 5'-TATGAGTCATTTTGCAGGAGG-3'. D1-5'-ATTGTACTTACTCGCTAATGGC-3'. exon9–10L: d1-11-U: 5'-AAACAGGAGATATACTAAAACTAAACTC-GG-3', d1-11-L: 5'- AAATTTGACACTAGATCGA-3', d1-12-U: 5'-GATGTCTCATTGCAAGTTTG-3', and d1-12-L: 5'-TTAATTTCACCTCTTATACTTAGGGAGACT-3'. Repeat-probe-U: 5'-GTTTGTCGCAGAAGCACCAG-3', repeatprobe-L: 5'-GATTGAGGATTTCACAACCGG-3', D1-probe-U: 5'-TATGAGTCATTTTGCAGGAGG-3', D1probe-L: 5'-ATTGTACTTACTCGCTAATGGC-3', 5s-rRNAprobe-U: 5'-GGATTAGGCTCACCAACCAA-3', 5s-rRNAprobe-L: 5'-TTATCCAAACGGCAGCTTCT-3', centromerespecific repeat probe-U: 5'-GAGTGTATTGGGTGCGTTCG-3', centromere-specific repeat probe-L: 5'-GTGAGTTTTTC-CCACGAACG-3', D1-Chip-1-U: 5'-TATGTATAACAATGT-GGGTCAGC-3', D1-Chip-1-L: 5'-TGCATACATGAGCAGT-AAGC-3', D1-Chip-2-U: 5'-AAAAGTAAGTTAGCACTCG-GAC-3', D1-Chip-2-L: 5'-GTCTGCAGACTGTTACCAGC-3', D1-Chip-3-U: 5'-CTGTGCATATGAACATGTCTTG-3', D1-Chip-3-L: 5'-CGAGCACAGTCTACAAGGTC-3', D1-Chip-4-U: 5'-TTTACACGTGGACCATTGATTG-3', D1-Chip-4-L: 5'-TAGACAACAGGTAGAGAATCTG-3'.



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Fig. S1. Transgenic analysis of the *D1* gene. The gross morphology of transformants. The empty vector and *D1* genes cloned from Nipponbare and *Epi-d1* were transformed into *d1* loss-of-function mutant. The *D1* gene cloned from Nipponbare was also transformed into *Epi-dwarf*. The 33.5-kb candidate region cloned from *Epi-d1* was transformed into *d1* loss-of-function mutant.

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC

S A Z d

SAN

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB 1300 Nipponbare-repeatC Epi-d1-repeatC 1300 TA 1300 TA

PACTAGCTGTGGC

Fig. S2. Comparison of upstream repeat sequences. Comparison of repeat A, B, C between Nipponbare and Epi-dl.

CT6766CC6C667676CATCCACAACC67A6CAA766C76C7CA6CA66CCCA76A7C7C7 CT6766CC6C667676CA7CCACAACC67A6CAA766C76C7CA6CA66CCCA76A7C7C7

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Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	1386 1387 1400 1400 1400 1400	ACAGTTGTACACACCCTCGCCCCTATTCATCCTCTTAAAGGAGTAAGGAGTAATGACAGTCGATATGTGTTGGTTG	1485 1486 1499 1499 1499 1499
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	1486 1487 1500 1500 1500 1500	TTGAATAGAATTGTGAACTTACTCGAATATCGTTCTTTTTGTGTATTGCTTTTGTTATGCTTCACCTGACTCTATCTCTGTGAAATGGCAGCTAGTATAT TTGAATAGAATTGTGAACTTACTCGAATATCGTTCTTTTGTGTATGCTTTGTTATGCTTCACCTGACTCTATCTCTGTGAAATGGCAGCTAGTATAT TTGAATAGAATTGTGAACTTACTCGAATATCGTTCTTTTGTATGCTTTGTTATGCTTCACCTGACTCTATCTCTGTGAAATGGCAGCTAGTATAT TTGAATAGAATTGTGAACTTACTCGAATATCGTTCTTTTGTGTATGCTTTGCTTCACCTGACTCTATCTCTGTGAAATGGCAGCTAGTATAT TTGAATAGAATTGTGAACTTACTCGAATATCGTTCTTTTGTGTATGCTTTGCTTCACCTGACTCTATCTCTGTGAAATGGCAGCTAGTATATT TTGAATAGAATTGTGAACTTACTCGAATATCGTTCTTTTGTGTGTTTGCTTCACCTGACTCTATCTCTGTGAAATGGCAGCTAGTATATT TTGAATAGAATTGTGAACTTACTCGAATATCGTTCTTTTGTGTGTTTGCTTTGCTTCACCTGACTCTATCTCTGTGAAATGGCAGCTAGTATATT	1585 1586 1599 1599 1599 1599
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	1586 1587 1600 1600 1600 1600	SAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTTCAATGGCGTTGCTACAGTTTGGAGGTACCTTGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT SAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTTCAATGGCGTTGCTACAGTTTGGAGGTACCTTGGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT SAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTTCAATGGCGTTGCTACAGTTTGGAGGTACCTTGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT SAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTTCAATGGCGTGCTACAGTTTGGAGGTACCTTGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT SAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTTCAATGGCGTGCTACAGTTTGGAGGTACCTTGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT SAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTTCAATGGCGTGCTACAGTTTGGAGGTACCTTGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT SAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTTCAATGGCGTGCTACAGTTTGGAGGTACCTTGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT GAAGGTTGAAGCTTTGTGGGTATCCAGCAAGTATTCCAATGGCGTGCTACAGTTTGGAGGTACCTTGGCCCCCAAACTTGGGGAAAAACCTCAGCTGT	1685 1686 1699 1699 1699 1699
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	1686 1687 1700 1700 1700 1700	BCCCABGTCACCTGCACTTACAAGAGTTATTTATGCTGATCCAAGATTTCTGGTGTCGAAAAGTGGGTATGTGAATGTGTTCTGATCAGTGAGATGTACT BCCCABGTCACCTGCACTTACAAGAGTTATTTTATGCTGATCCAAGATTTCTGGTGTCGAAAAGTGGGTATGTGAATGTGTTCTGATCAGTGAGATGTACT SCCCABGTCACCTGCACTTACAAGAGTTATTTATGCTGATCCAAGATTTCTGGTGTCGAAAAGTGGGTATGTGAATGTGTTCTGATCAGTGAGATGTACT SCCCABGTCACCTGCACTTACAAGAGTTATTTATGCTGATCCAAGATTTCTGGTGTCGAAAAGTGGGTATGTGAATGTGTCTGATCAGTGAGATGTACT SCCCABGTCACCTGCACTTACAAGAGTTATTTATGCTGATCCAAGATTTCTGGTGTCGAAAAGTGGGTATGTGAATGTGTTCTGATCAGTGAGATGTACT SCCCCAGGTCACCTGCACTTACAAGAGTTATTTATGCTGATCCAAGATTTCTGGTGTGAAAAGTGGGTATGTGAATGTGTTCTGATCAGTGAGATGTACT SCCCCAGGTCACCTGCACTTACAAGAGTTATTTATGCTGATCCAAGATTTCTGGTGTGAAAGTGGGTATGTGAATGTGTTCTGATCAGTGAGATGTACT SCCCCAGGTCACCTGCACTTACAAGAGTTATTTATGCTGATCCAAGATTTCTGGTGTGAAAGTGGGTATGTGAATGTGTTCTGATCAGTGAGATGTACT	1785 1786 1799 1799 1799 1799
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	1786 1787 1800 1800 1800 1800	AGGAATACTAAAATAAAGGACACATTGATATTATAAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTAGTGGAGGCAGG AGGAATACTAAAATAAAGGACACATTGATATTATAAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTAGTGGAGGCAGG AGGAATACTAAAATAAAGGACACATTGATATTATAAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTGGAGGCAGG AGGAATACTAAAATAAAGGACACATTGATATTATAAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTAGTGGAGGCAGG AGGAATACTAAAATAAAGGACACATTGATATTATAAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTAGTGGAGGCAGG AGGAATACTAAAATAAAGGACACATTGATATTATAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTAGGAGGCAGG AGGAATACTAAAATAAAGGACACATTGATATTATAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTAGGAGGCAGG AGGAATACTAAAATAAAGGACACATTGATATTATAAAAGGCAAGATTTCTGAGTAAACTGAAGATGATATATCTCTTTTTGTGCAGTAGGAGGCAGG	1885 1886 1899 1899 1899 1899
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	1886 1887 1900 1900 1900 1900	CTPAAACACCTTGTATCACCTACTGCTAGTTTACAATCACGGACATCTTCTCGACTATTTAACCATGCACCATCACCGGAGATTTCGCCATCGAAGGAGTT CTTAAACACCTTGTATCACCTACTGCTAGTTTACAATCACGGACATCTTCTCGACTATTTAACCATGCACCACCACCGAGATTTCGCCATCGAAGGAGTT CTTAAACACCTTGTATCACCTACTGCTAGTTTACAATCACGGACATCTTCTCGACTATTAACCATGCACCACCACCAGAGTTCGCCATCGAAGGAGT CTTAAACACCTTGTATCACCTACTGCTAGTTTACAATCGGGACATCTTCTCGACTATTAACCATGCACCACCCAC	1985 1986 1999 1999 1999 1999
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	1986 1987 2000 2000 2000 2000	CAAGGTTCATTGTCAGAGCTGATGCTGTGAGTTACTTCATTTGCTTTTTTTT	2085 2086 2099 2099 2099 2099
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2086 2087 2100 2100 2100 2100	TTTAATTTACAGGATTTCTATTCCACACTTGGTGTTTCAAGAAATGCTAGTAAATCTGAAATCAAGAGTGGTAGGTGTGGTATTTATT	2185 2186 2199 2199 2199 2199
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2186 2187 2200 2200 2200 2200	CATGCAGTGATTGGTGCTCCGTACAATCGTAGGAGTATTACCCAGCTTTGCTTCTCTCTAGTTTGAGCCTGGTTGTAGGTTTGTAGGTACCCTATAATT CATGCAGTGATTGGTGCTCCGTACAATCGTAGGAGTATTACCCAGCTTTGCTTCTCTAGTTTGAGCCTGGTTGTAGGTTTGTAGGTACCCTATAATT CATGCAGTGATTGGTGCTCCGTACAATCGTAGGAGTATTACCCAGCTTTGCTTCTCTAGTTTGAGCCTGGTTGTAGGTTGTAGGTACCCTATAATT CATGCAGTGATTGGTGCTCCGTACAATCGTAGGAGTATTACCCAGCTTTGCTTCTCTAGTTTGAGCCTGGTTGTAGGTTTGTAGGTACCCTATAATT CATGCAGTGATTGGTGCTCCGTACAATCGTAGGAGTATTACCCAGCTTTGCTTCTCTCAGTTTGAGCTGTGTGAGGTTTGTAGGTACCCTATAATT CATGCAGTGATTGGTGCTCCGTACAATCGTAGGAGTATTACCCAGCTTTGCTTCTCTCTAGTTTGAGCCTGGTTGTAGGTTTGTAGGTACCCTATAATT CATGCAGTGATTGGTGCTCCGTACCATCGTAGGAGTATTACCCAGCTTTGCTTCTCTCTAGTTTGAGCCTGGTTGTAGGTTGTAGGTACCCTATAATT	2285 2286 2299 2299 2299 2299
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2286 2287 2300 2300 2300 2300 2300	TACCAAACAAACCAGACTGCTTTCATGTGGCTATTAGTCGTAGATTACTAGTTTTAAATCATACTGTTCACGTGTGAAACAAAATATATGTACAACAGGA TACCAAACAAACCAGACTGCTTTCATGTGGCTATTAGTCGTAGATTACTAGTTTTAAATCATACTGTTCACGTGTGAAACAAAATATATGTACAACAGAA TACCAAACCAA	2385 2386 2399 2399 2399 2399
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2386 2387 2400 2400 2400 2400	ACTOTTAAGCTTCCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAGCTTTATGGCCCACTTGTTGTTCTCGAAAGCTT ACTGTTAAGCTTCCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAGCTTATGGCCCACTTGTTGTTCTCGAAAGCTT ACTGTTAAGCTTCCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAGCTTTATGGCCCACTTGTTGTTCTCGAAAGCTT ACTGTTAAGCTTCCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAGCTTTATGGCCCACTTGTTGTTCTCGAAAGCTT ACTGTTAAGCTTCCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAGCTTTATGGCCCACTTGTTGTTCTCGAAAGCTT ACTGTTAAGCTTCCCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAGCTTTATGGCCCACTTGTTGTTCTCGAAAGCTT ACTGTTAAGCTTCCCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAGCTTTATGGCCCACTTGTTGTTCTCGAAAGCTT	2485 2486 2499 2499 2499 2499
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2486 2487 2500 2500 2500 2500	TACTATTCCTACTAGTAACTCAAATATTTGCTATTTCATCTAATTTGAAGGGCTATCTCAGCAAAACCCCCTTGAACTATTCTAAGACAAGCCTATGCTGGTC TACTATTCCTACTAGTAACTCAAATATTTGCTATTTCATCTAATTTGAAGGGCTATCTCAGCAAAACCCCTTGAACTATTCTAAGACAAGCCTATGCTGTC TACTATTCCTACTAGTAACTCAAATATTTGCTATTTCATCTAATTTGAAGGCTATCTCAGCAAAACCCCTTGAACTATTCTAAGACAAGCCTATGCTGGT TACTATTCCTACTAGTAACTCAAATATTTGCTATTTTCATCTAATTTGAAGGCTATCCAGCAAAACCCCTTGAACTATTCTAAGACAAGCCTATGCTGGTG TACTATTCCTACTAGTAACTCAAATATTTGCTATTTGCATCTAATTTGAAGGCTATCCAGCAAAACCCCTTGAACTATTCTAAGACAAGCCTATGCTGGTG TACTATTCCTACTAGTAACTCAAATATTTGCTATTTGCATCTAATTTGAAGGCTATCCAGCAAAACCCCCTTGAACTATTCTAAGACAAGCCTATGCTGGT TACTATTCCTACTAGTAACTCAAATATTTGCTATTTGCATCTAATTTGAAGGCTATCCAGCAAAACCCCCTTGAACTATTCTAAGACAAGCCTATGCTGGT TACTATTCCTACTAGTAACTCAAATATTTGCTATTTCCATCTAATTTGAAGGCTATCCAGCAAAACCCCCTTGAACTATTCTAAGACAAGCCTATGCTGGT	2585 2586 2599 2599 2599 2599
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2586 2587 2600 2600 2600 2600	TTCAGTATCATTTTCTGCAACTGATCATCTTGCGTTCTAGACTCGATACTGTTATATTTCTGAAAATCTATTGTTGGCAACTTCTCATTGATGCAATGT TTCAGTATCATTTTCTGCAACTGATCATCTTGCGTTCTAGACTCGATACTGTTTATATTTCTGAAAATCTATTGTTGGCAACTTCTCATTGATGCATTGT TTCAGTATCATTTTCTGCAACTGATCATCTTGCGTTCTAGACTCGATACTGTTTATATTTCTGAAAATCTATTGTTGGGCAACTTCTCATTGATGCATTGT TTCAGTATCATTTCTGCAACTGATCATCTGCGTTCTAGACTCGATACTGTTTATATTTCTGAAAATCTATTGTGGGCAACTTCTCATTGATGCATTGT TTCAGTATCATTTTCTGCAACTGATCATCTGCGTTCTAGACTCGATACTGTTTATTTCTGAAAATCTATTGTGGGCAACTTCTCATTGATGCATTGT TTCAGTATCATTTTCTGCAACTGATCATCTGCGGTTCTAGACTCGATACTGTTTATTTCTGAAAATCTATTGTGGGCAACTTCTCATTGATGCAATTGT TTCAGTATCATTTCTGCAACTGATCATCTGGGTTCTAGACTCGATACTGTTTATTTCTGAAAATCTATTGTGGCAACTTCTCATTGATGACATTGT TTCAGTATCATTTCTGCAACTGATCATCTTGCGTTCTAGAGCCGATACTGTTTATATTTCTGAAAATCTATTGTGGCAACTTCTCATTGATGAAGCATTGT	2685 2686 2699 2699 2699 2699
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2686 2687 2700 2700 2700 2700 2700	TTETATEGCCCTCAATCCCTECCCTCCACETETETEGEGCAGAAATTTTEAACAAAAATCCCAACCCACACCCCETAGATAATCTAGGATTTETCCTATCCA TTETATEGCCCTCAATCCCTECCCTCCACETETETEGEGCAGAAATTTTEGAACAAAAATCCCAACCCACCCCETAGATAATCTAGGATTTETCCCTATCCA TTETATEGCCCTCAATCCCTECCCTCCACETETETEGEGCAGAAATTTTTEGAACAAAAATCCCAACCCCACACCCETAGATAATCTAGGATTTETCCCTATCCA TTETATEGCCCTCCAATCCCTECCCTCCACETETETETEGEGCAGAAATTTTEGAACAAAAATCCCAACCCCCCACACCCETAGATAATCTAGGATTETETCCTATCCA TTETATEGCCCTCAATCCCTECCCTCCACETETETETEGEGCAGAAATTTTEGAACAAAAATCCCAACCCCCGTAGATAATCTAGGATTETETCCTATCCA TTETATEGCCCTCAATCCCTECCCTCCACETETETETEGEGCAGAAATTTTEGAACAAAAATCCCAACCCACCCCETAGATAATCTAGGATTETETCCTATCCA TTETATEGCCCTCAATCCCTECCCTCCACETETETEGEGCAGAAATTTTEGAACAAAAATCCCAACCCACCCCETAGATAATCTAGGATTETETCCTATCCA	2785 2786 2799 2799 2799 2799

Fig. S2 continued.

Nipponbare-repeatA Epi-di-repeatA Nipponbare-repeatB Epi-di-repeatB Nipponbare-repeatC Epi-di-repeatC	2786 2787 2800 2800 2800 2800	AATAATGCCTAAGGGGATATTATGTTAGAAATCCTTCAGAGTCAATTTTGATCAAAATATGTGTAGTAGTAGTAGTTTAATGTTGCTTTCTATTGTAGTTCTAAAA AATAATGCCTAAGGGGATATTATGTTAGAAATCCTTCAGAGTCAATTTTGATCAAAATATGTGTAGTAGTAGTTTAATGTTGCTTTCTATTGTAGTTCTAAAA AATAATGCCTAAGGGGATATTATGTTAGAAATCCTTCAGAGTCAATTTTGATCAAAATATGTGTAGTAGTTTAATGTTGCTTTCTATTGTAGTTCTAAAA AATAATGCCTAAGGGATATTATGTTAGAAATCCTTCAGAGTCAATTTTGATCAAAATATGTGGTAGTAGTTTAATGTTGCTTTCTATTGTTG AATAATGCCTAAGGGGATATTATGTTAGAAATCCTTCAGAGTCAATTTTGATCAAAATATGTGTAGTAGTTGATTTAATGTTGCTTTCTATTGTAGT AATAATGCCTAAGGGGATATTATGTTAGAAATCCTTCAGAGTCAATTTTGATCAAAATATGTGGTAGTAGTTTAATGTTGCTTTCTATTGTAGTTCTAAAA AATAATGCCTAAGGGGATATTATGTTAGAAATCCTTCAGAGTCAATTTTGATCAAAATATGTGTAGTAGTAGTTTAATGTTGCTTTCTATTGTAGTTCTAAAA	2885 2886 2899 2899 2899 2899
Nipponbare-repeatA Epi-di-repeatA Nipponbare-repeatB Epi-di-repeatB Nipponbare-repeatC Epi-di-repeatC	2886 2887 2900 2900 2900 2900 2900	TEGETCCTTCTTTTCCAGCCTATABGAAGCTTGCTAGGAGCTACCATCCTGATGTGAACAAGTAAGT	2985 2986 2999 2999 2999 2999
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	2986 2987 3000 3000 3000 3000	ACTOGATATATTGCTTCTTTTTTCTCCTTTCGATCCATTATAAACCTGAGTACTAGTTGTGCATTACCTTTTTCATAACTACATAACTAAATAAGCAATT ACTOGATATATTGCTTCTTTTTCTCCCTTTCGATCCATTATAAACCTGAGTACTAGTTGTTGCATTACCTTTTTCATAACTACATAATCAAATAAGCAATT ACTOGATATATTGCTTTTTTCTCCTTTCGATCCATTATAAACCTGAGTACTAGTTGTTGCATTACCTTTTTCATAACTACATAATCAAATAAGCAATT ACTOGATATATTGCTTTTTTCTCCCTTTCGATCCATTATAAACCTGAGTACTAGTTGTTGCATTACCTTTTTCATAACTAAC	3085 3086 3099 3099 3099 3099
Nipponbare-repeată Epi-d1-repeată Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3086 3087 3100 3100 3100 3100 3100	STRATGCTTGTGTATTTTTCTTTAGAGATCCTGGTGCTGAACAAAASTTCAAGGATATTAGCAATGCTTATGAGGTTAGTCCASCTAACCATAACCAAAT STRATGCTTGTGTATTTTTCTTTAGAGATCCTGGTGCTGAACAAAASTTCAAGGATATTAGCAATGCTTATGAGGTTAGTCCASCTAACCAAAT STTATGCTTGTGTATTTTTCTTTAGAGATCCTGGTGCTGAACAAASSTTCAAGGATATTAGCAATGCTTAGTGGTTAGTCCASCTAACCAAAT STTATGCTTGTGTATTTTTTTTTTTAGAGATCCTGGTGCTGAACAAAASTTCAAGGATATTAGCAATGCTTAGTGAGTTAGTCCASCTAACCAAAT STTATGCTTGTGTATTTTTTTTTTAGAGATCCTGGTGCTGAACAAAASTTCAAGGATATTAGCAATGCTTAGTGAGGTTAGTCCASCTAACCAAAT STTATGCTTGTGTATTTTTTTTTTGGAGCTGGAGCCTGAACAAAASTTCAAGGATATTAGCAATGCTTATGAGGTTAGTCCASCTAACCAAAAT STTATGCTTGTGTATTTTTTTTTTAGAGATCCTGGTGCTGAACAAAASTTCAAGGATATTAGCAATGCTTATGAGGTTAGTCCASCTAACCAAAAT STTATGCTTGTGTATTTTTTTTTTTTTAGAGATCCTGGTGCTGAACAAAASTTCAAGGATATTAGCAATGCTTATGAGGTTAGTCCASCTAACCAAAAT	3185 3186 3199 3199 3199 3199 3199
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3186 3187 3200 3200 3200 3200	CCCATTGTTCTTATGACTATGTTGTTGTAGGGTTACAGGTGCTTGCCAGCTAACATAAATAGGATTGCAGGTTTTGTCTGATGAGAAGCGATCAAT CCCATTGTTCTTATGACTATGTTGTTGTAGGGTTACAGGTGCTTGCCAGCTAACATAAATAGGATTGCAGGTTTTGTCTGATGATGAAGAAGCGATCAAT CCCATTGTTTCTTATGACTATGTTGTTGTAGGGTTACAGGTGCTTGCCAGCTAACATAAATAGGATTGCAGGTTTTGTCTGATGATGAAGAAGCGATCAAT CCCATTGTTTCTTATGACTATGTTGTTGTAGGGTTACGAGGTGCTTGCCAGCTAACATAAGAATTGCAGGTTTTGTCTGATGATGAAGAAGCGATCAAT CCCATTGTTTCTTATGACTATGTTGTTGTAGGGTTACAGGTGCTTGCCAGCTAACATAAATAGGATTGCAGGTTTTGTCTGATGATGAAGAAGCGATCAAT CCCATTGTTTCTTATGACTATGTTGTTGTAGGGTTACAGGTGCCAGCTACCATAAATAGGATTGCAGGTTTTGTCTGATGATGAAGAAGCGATCAAT CCCATTGTTTCTTATGACTATGTTGTTGTAGGGTTACAGGTGCCTGCC	3285 3286 3299 3299 3299 3299 3299
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3286 3287 3300 3300 3300 3300 3300	CTATGATAAATATGGAGAASCTGGTTTGAAGGGTGCTGGAATGGGAACAGGAGTGATGCTAGAATGTTGTCCAATTCTGAAGTATGATCAGCATGA CTATGATAAATATGGAGAASCTGGTTTGAAGGGTGCTGGAATGGGAACAGGAACAGAGTGTTCCTAGAATGTTGTCCAATTCTGAAGTATGATCAGCATGA CTATGATAAATATGGAGAASCTGGTTTGAAGGGTGCTGGAATGGGAACAGGAGTGATGTTCCTAGAATGTTGTCCCAATTCTGAAGTATGATCAGCATGA CTATGATAAATATGGAGAASCTGGTTTGAAGGGTGCTGGAATGGGAACAGGAGTGATGTCCTCTAGAATGTTGTCCCAATTCTGAAGTATGATCAGCATGA CTATGATAAATATGGAGAASCTGGTTTGAAGGGTGCTGGGAATGGGAACAGGAGTGATGTTCCCTAGAATGTTGTCCCAATTCTGAAGTATGATCAGCATGA CTATGATAAATATGGAGAASCTGGTTTGAAGGGTGCTGGGAATGGGAACAGGAGTGATGTTCCCTAGAATGTTGTCCCAATTCTGAAGTATGATCAGCATGA CTATGATAAATATGGAGAASCTGGTTTGAAGGGTGCTGGGAATGGGAACAGGAGTGAGTG	3385 3386 3399 3399 3399 3399
Nipponbare-repeatA Epi-di-repeatA Nipponbare-repeatB Epi-di-repeatB Nipponbare-repeatC Epi-di-repeatC	3386 3387 3400 3400 3400 3400	CCTTTATATGATATTGATTGTATGAAATTTGTGAATCTGCAGGATTACTCAAACCCATTCGATCTCTTTGAATCATTATTCGAAGGCTTTGGTGGAATGG CCTTTATATGATATTGATTGTATGAAATTTGTGAATCTGCAGGATTACTCAAACCCATTCGATCTCTTTGAATCATTATTCGAAGGCTTTGGTGGAATGG CCTTTATATGATATTGATTGTATGAAATTTGTGAATCTGCAGGATTACTCAAACCCATTCGATCTCTTTGAATCATTATTCGAAGGCTTTGGTGGAATGG CCTTTATATGATATTGATTGTATGAAATTTGTGGAATCGCAGGATTACTCAAACCCATCGATCTCTTGGAATCATTATTCGAAGGCTTTGGTGGAATGG CCTTTATATGATATTGATTGTATGAAATTTGTGGAATCGCAGGATTACTCAAACCCATCGATCTCTTTGGAATCATTATTCGAAGCCTTTGGTGGAATGG CCTTTATATGATATTGATTGTAGAAATTTGTGGAATCTGCAGGATTACTCAAACCCATCGATCTCTTTGGAATCATTATTCGAAGCCTTTGGAGATGG CCTTTATATGATATTGATTGTAGAAATTTGTGAATCTGCAGGATTACTCAAACCCCATCGATCTCTTTGAATCATTATTCGAAGGCTTTGGTGGAATGG	3485 3486 3499 3499 3499 3499
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3486 3487 3500 3500 3500 3500	ВБGGAATGGOAGGCCGTGCTGCTCCGGAACAGACCAATGCAGGGTGATGATGAGGCCTACAATCTGGTACTCAATTTCAAGGAASCGGTGTTTGGTGTAGA ВGGGAATGGGAGGCCGTGCTGCTCCGGAACAGACCAATGCAGGGTGATGATGAGGCCTACAATCTGGTACTCAATTTCAAGGAAGCGGTGTTTGGTGTAGA BGGGAATGGGAGGCCGTGCTGCTCGGAACAGACCAATGCAGGGTGATGATGAGGCCTCACATCTGGTACTCAATTTCAAGGAGCGGTGTTGGTGTAGA BGGGAATGGGAGGCCGTGCTGCTCGGAACAGACCAATGCAGGGTGATGATGAGGCCTACAATCTGGTACTCAATTTCAAGGAGCGGTGTTGGTGTAGA BGGGAATGGGAGGCCGTGCTGCTCGGAACAGACCAATGCAGGGTGATGATGAGGCCCTACAATCTGGTACTCAATTTCAAGGAAGCGGTGTTGGTGTAGA BGGGAATGGGAGGCCGTGCTGCGGAACAGACCAATGCAGGGTGATGATGAGGCCCTACAATCTGGTACTCAATTTCAAGGAAGCGGTGTTGGTGTAGA BGGGAATGGGAGGCCGTGCTGCTGCGAACAGACCAATGCAGGGTGATGATGAGGCCCTACAATCTGGTACTCAATTTCAAGGAAGCGGTGTTGGTGTAGA	3585 3586 3599 3599 3599 3599
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3586 3587 3600 3600 3600 3600	GAAAGAAATTGAGATCACCAGACTGGAAGGCTGTAATACATGTGATGGAACTGGTGCCAAGCCTGGAACGAAC	3685 3686 3699 3699 3699 3699
Nipponbare-repeatA Epi-di-repeatA Nipponbare-repeatB Epi-di-repeatB Nipponbare-repeatC Epi-di-repeatC	3686 3687 3700 3700 3700 3700 3700	CASGGACAASTGGYCTCCTCAACAAGAACGCCACTTGGAATATTCCAGCAGGYCTCCACCTGCAATACTTGCGGAGGCACTGGTGAATTCTCTACCCCGT CASGGACAASTGGYCTCCTCAACAAGAACGCCACTTGGAATATTCCABCAGGYCTCCACCTGCAATACTTGCGGAGGCACTGGTGAATTCTCTACCCCGT CASGGACAASTGGYTCCTCAACAAGAACGCCACTTGGAATATTCCCACGGCTCTCCACCTGCAATACTTGCGGAGGCACTGGTGAATTCTCTACCCCGT CASGGACAASTGGYTCCTCAACAAGAACGCCACTTGGAATATTCCCACGGGTCTCCACCTGCAATACTTGCGGAGGCACTGGTGAATTCCTACCCCGT CASGGACAASTGGYTCCTCAACAAGAACGCCACTTGGAATATTCCAACGGGTCTCCACCTGCAATACTTGCGGAGGCACTGGTGAATTCCTACCCCGT CASGGACAASTGGTCCTCCTCAACAAGAACGCCACTTGGAATATTCCACCAGCGCCCCGCCACTACTTGCGGAGGCACTGGTGAATTCCTACCCCGT CASGGACAASTGGTCCTCCTCAACAAGAACGCCACTTGGAATATTCCCACCAGCGCCTGCCAATACTTGCGGAGGCACTGGTGAATTCCTACCCCGT CASGGACAASTGGTCCTCCTCAACAAGAACGCCACTTGGAATATTCCAGCAGGGTCTCCCACCTGCAATACTTGCGGAGGCACTGGTGAATTCCTACCCCGT	3785 3786 3799 3799 3799 3799
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3786 3787 3800 3800 3800 3800	BCAACACTTOTGGGGGTGATGGCCGAGTGCGGAAGACAAAAAGGATCAGTCTAAAGGTTCCTGCTGGTGTTGATTCTGGAAGCAGATTGAGGGTCCGGTC BCAACACTTOTGGGGGTGATGGCCGAGTGCGGAAGACAAAAAGGATCAGTCTAAAGGTTCCTGCTGGTGTTGATTCTGGAAGCAGATTGAGGGTCCGGTC GCAACACTTOTGGGGGTGATGGCCGAGTGCGGAAGACAAAAAGGATCAGTCTAAAGGTTCCTGCTGGTGTTGATTCTGGAAGCAGATTGAGGGTCCGGTC GCAACACTTGTGGGGGTGATGGCCGAGTGCGGAAGACAAAAAGGATCCAGTCTAAAGGTTCCTGCTGGTGTTGATTCTGGAAGCAGATTGAGGGTCCGGTC GCAACACTTGTGGGGGTGATGGCCGAAGCAAAAAGAACAGATCAGTCTAAAGGTTCCTGCTGGTGTTGATTCTGGAAGCAGATTGAGGGTCCGGTC GCAACACTTGTGGGGGTGATGGCCGAAGCAAAAAGGATCAGTCTAAAGGTTCCTGCTGGTGTTGATTCTGGAAGCAGATTGAGGGTCCGGTC GCAACACTTGTGGGGGTGATGGCCGAAGCGAAG	3885 3886 3899 3899 3899 3899
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3886 3887 3900 3900 3900 3900	TGAGGGGAATGCTGGGCGGAGAGGGAGGCCCTCCTGGAGATCTTTATGTGTTTATTGATGTTCTCTCTGATCCTGTTCTTAAGCGAGAATGGGACAAACATT TGAGGGGAATGCTGGGCGGAGAGGAGGCCCTCCTGGAGATCTTTATGTGTTTATTGATGTTCTCTCTGATCCTTTAAGCGAGAGGGACAAACATT TGAGGGGAATGCTGGGCGGAGAGGAGGCCCTCCTGGAGATCTTTATGTGTTTATTGATGTTCTCTCTGATCTTTCTATGAGCGACAAACATT TGAGGGGAATGCTGGGCGGAGAGGAGGCCCTCCTGGAGATCTTTATGTGTTTATTGATGTTCTCTCTGATCCTGTTCTAGCGAGAGGACAAACATT TGAGGGGAATGCTGGGCGGAGAGGAGGCCCTCCTGGAGATCTTTATGTGTTTATTGATGTTCTCTCTGATCCTGTTCTAGGGAGAATGGGACAAACATT TGAGGGGAATGCTGGGCGGAGAGGAGGCCCTCCTGGAGATCTTTATGTGTTTATTGATGTTCTCTCTGATCCTGTTCTATAGCGAGAATGGGACAAACATT	3985 3986 3999 3999 3999 3999
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	3986 3987 4000 4000 4000 4000	CTATACACATGCAAABTTTCATATATTGACGCAATTCTTGGGACAACCGTCAAGGTTCCCACTGTTGATGGGATGGTTGACCTGAAGATCCCCTCCGG7A CTATACACATGCAAABTTTCATATATTGACGCAATTCTTGGGACAACCGTCAAGGTTCCCACTGTTGATGGGATGGTTGACCTGAAGATCCCCTCCGG7A CTATACACATGCAAAGTTTCATATTGACGCAATTCTTGGGACGACCGTCAAGGTTCCCACTGTTGATGGGATGGTTGACCTGAAGATCCCCTCCGG7A CTATACACATGCAAAGTTTCATATTGACGCAATTCTTGGGACGACCGTCAAGGTTCCCACTGTTGATGGGATGGTTGACCTGAAGATCCCCTCCGG7A CTATACACATGCAAAGTTTCATATATTGACGCAATTCTTGGGACGACCGTCAAGGTTCCCACTGTTGATGGGATGGTTGACCTGAAGATCCCCTCCGG7A CTATACACATGCAAAGTTTCATATTGACGCAATTCTTGGGACGACCGTCAAGGTTCCCACTGTTGATGGGATGGTTGACCTGAAGATCCCCTCCGG7A CTATACACATGCAAAGTTTCATATTGACGCAATTCTTGGGACGACCGTCAAGGTTCCCACTGTTGATGGGATGGTTGACCTGAAGATCCCCTCCGG7A	4085 4086 4099 4099 4099 4099
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4086 4087 4100 4100 4100 4100	CCCASCCASSCALACGTTASTGATGTCCAASGALAGSTGTCCCACTCCTCSGGAASTCAAATSCTCSTGGASACCASCTASTSCSTGTGCASGTCGASGT CCCASCCASSCACAACGTTASTGATGTCCAASGALASSTSCCCACTCCTCSGGSAASTCALATSCTCSTGGASACCASCTASTSCSTGTGCASGT CCCASCCASSCACAACGTTASTGATGTCCAASGALASSTSTCCCACTCCTCSGGAASTCALATSCTCSTGSASACCASCTASTSCSTGTGCASGT CCCASCCASSCACAACGTTASTGATGTCCAASGALASSTSTCCCACTCCTCSGGAASTCALATSCTCSTGSASACCASCTASTSCSTGTGCASGTCSASGT CCCASCCASSCACAACGTTASTGATGTCCAASGALASSTSTCCCACTCCTCSGGAASTCALATSCTCSTGSASACCASCTASTSCSTGTGCASGTCGASGTCGASGT CCCASCCASSCACAACGTTASTGATGTCCAASGALASSTSTCCCACTCCTCSGGAASTCAATSCTCSTGSGASCCASCTASTSCSTGCSTGTGCASGTCGASGTCGAGAT CCCASCCASSCAACGTTASTGATGTCCAASGALASSTSTCCCACTCCTCSGGAASTCAATSCTCSTGSGASACCASCTASTSCSTGCSTGGCSTG	4185 4186 4199 4199 4199 4199

Fig. S2 continued.

Nipponbare-repeatà Epi-d1-repeatà Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4186 4187 4200 4200 4200 4200	TCCAAAGCGTCTGAGCAGCGACGAGAGGAAGCTGATTGAAGAACTTGCAAACCTAAACAAGGCTCAAACAGCAAACAGCAGGAGAAAATTCCATGAGGCT TCCAAAGCGTCTGAGCAGCGACGAGAGGAAGCTGATTGAAGAACTTGCAAACCAGGCTCAAACAGCAAACAGCAGGAGAATAATTCCATGAGGCT TCCAAAGCGTCTGAGCAGCGACGAGAGGAAGCTGATTGAAGAACTTGCAAACCAGGAGGCTCAAACAGCAACAGCAGGAGAATAATTCCATGAGGCT TCCAAAGCGTCTGAGCAGCGACGAGAGGAGGCTGATTGAAGACTTGCAAACCAGGAGGCTCAAACAGCAACAGCAGAGAATAATTCCATGAGGCT TCCAAAGCGTCTGAGCAGCGAGGAGGGAGCTGATTGAAGACTTGCAAACCAGGAGGCTCAAACAGCAAACAGCGAGAGAATAATTCCATGAGGCT TCCAAAGCGTCTGAGCAGCGAGGAGGGAGGCTGATTGAAGAACTTGCAAGCCTAAACAAGGCTCAAACAGCAGAGAGAG	4285 4286 4299 4299 4299 4299
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4286 4287 4300 4300 4300 4300	TCATTGGACAAAATGCTTTGGCAATATGCAATTTTAACGCAAATTGCAGTGACTAAGTGAGCATGAACTGGTAAATCACTTCACAAATGCTTAGCAAATGGCTTAGCAATTGAACGCAAATTGCAATGGACTAAGTGACCGCTGATGACGGTAAATCACTTCACAAACTGTACGCAATTGCAATTGCAATTGCAGTGACGATGAACTGGTAAATCACTTCACAAACTGTACGCTCATG TCATTGGACAAAATGCTTTGGCAATATGCAATTTTTAACGCAAATTGCAGTGACTAAGTGAGCATGAACTGGTAAATCACTTCACAAACTGTACGCTCATG TCATTGGACAAAATGCTTTGGCAATATGCAATTTTTAACGCAAATTGCAGTGACTAAGTGAGCATGAACTGGTAAATCACTTCACAAACTGTACGCTCATG TCATTGGACAAAATGCTTTGGCAATATGCAATTTTTAACGCAAATTGCAGTGACTAAGTGAGCATGAACTGGTAAATCACTTCACAAACTGTACGCTCATG TCATTGGACAAAATGCTTTGGCAATATGCAATTTTTAACGCAAATTGCAGTGACTAAGTGAGCATGAACTGGTAAATCACTTCACAAACTGTACGCTCATG TCATTGGACAAAATGCTTTGGCAATATGCAATTTTAACGCAAATTGCAGTGACTAAGTGAGCATGAACTGGTAAATCACTTCACAAACTGTACGCTCATG	4385 4386 4399 4399 4399 4399
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4386 4387 4400 4400 4400 4400	CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TAACTTCATTTTAAGCCATA6AATCTA6TTCCATCCAAAACACCAAAAC66AT66T CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TAACTTCATTTTTAAGCCATA6AAATCTA6TTCCATCCAAAACACAAAAC66AT66T CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TAACTTCATTTTTAAGCCATA6AAATCTA6TTCCATCCAAAACACAAAAC66AT66T CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TAACTTCATTTTTAAGCCATA6AAATCTA6TTCCATCCAAAACACCAAAAC66AT66T CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TAACTTCATTTTTAAGCCATA6AATCTA6TTCCATCCAAAACACCAAAAC66AT66T CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TAACTTCATTTTTAAGCCATA6AATCTA6TTCCATCCAAAACACCAAAAC66AT66T CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TAACTTCATTTTAAGCCATA6AATCTA6TTCCATCCAAAACACCAAAAC66AT66T CT6C6CC6TACCATC66T66GAACT6T6AATTCTCAT6TCT6TACTTCCATTTTTAAGCCATA6AATCTA6TTCCATCCAAAACACCAAAAC66AT66T	4485 4486 4499 4499 4499 4499
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4486 4487 4500 4500 4500 4500	STTTTACASTASCTTGTCATATSCTTTTASGCSASCTTATTASTCTATTTTTCATAATACTTTTTCACAATTTGAAAGSCCTASGSAGAAATATTTAAT STTTTACASTASCTTGTCATATSCTTTTASGCSASCTTATTASTCTAATTTTTCATAATACTTTTTCACAATTTTGAAAGSCCTASGSAGAAATATTTAAT STTTTACASTASCTTGTCATATSCTTTTASGCGASCTTATTASTCTTATTTCATAATACTTTTTCACAATTTTGAAASSCCTASGSAGAAATATTTAAT STTTTACASTASCTTGTCATATSCTTTTASGCGASCTTATTASTCTATTTTCATAATACTTTTTCACAATTTTGAAASSCCTASGSAGAATAATTTAAT STTTTACASTASCTTGTCATATSCTTTTASGCGASCTTATTASTCTATTTTCATAATACTTTTTCACAATTTTGAAASSCCTASGSAGAAATATTTAAT STTTTACASTASCTTGTCATATSCTTTTASGCGASCTTATTASTCTATTTTCATAATACTTTTTCACAATTTGAAASSCCTASGSAGAAATATTTAAT STTTTACASTASCTTGTCATATSCTTTTASGCGASCTTATTASTCTATTTTCATAATACTTTTTCACAATTTGAAASSCCTASGSAGAAATATTTAAT STTTTACASTASCTTGTCATATSCTTTTASGCGASCTTATTASTCTATTTTCACAATTTTCACAATTTGAAASSCCTASGSAGAAATATTTAAT	4585 4586 4599 4599 4599 4599
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4586 4587 4600 4600 4600 4600	96TGCAAAA66GACGA6TTTGAAACATTGTTGTCGCGCAGAAGCACCAGACCATTCTGATTGTTATTGTAAGCTGTAACATCAAA6TTTGGCAGCAGG 96TGCAAAA6GGACGA6TTTGAAACATTGGTTGGTCGCAGAAGCACCAGCCATTCTGATTGTTATTGTAAGCTGTAACATCAAA6TTTGGCAGCAGC 96TGCAAAA6GGACGA6TTTGAAACATTGGTTGTCGCCGGAGAAGCACCAGACCATTCTGATTGTTATGTAAGCTGTAACATCAAA6TTTGGCAGCAGG 96TGCAAAA6GGACGA6TTTGAAACATTGGTTGTTGTCGCAGAAGCACCAGACCATTCTGATTGTTATGTAAGCTGTAACATCAAA6TTTGGCAGCAGG 96TGCAAAA6GGACGA6TTTGAAACATTGTTTGTCGCAGAAGCACCAGACCATTCTGATTGTTATTGTAAGCTGTAACATCAAA6TTTGGCAGCAGG 96TGCAAAA6GGACGA6TTTGAAACATTTGTTGTCGCAGAAGCACCAGACCATTCTGATTGTTATTGTAAGCTGTAACATCAAA6TTTTGCAGCAGCAGG 96TGCAAAA6GGACGAGTTTGAACATTTGTTGTCGCCAGAACCAGCCCAGACCATTCTGATTGTTATGTAAGCTGTAACATCAAAGTTTTGGCAGCAGG 96TGCAAAA6GGACGAGTTTGAACATTTGTTGTCGCCAGAACCAGCCCAGACCATTCTGATTGTTATGTAAGCTGTAACATCAAAGTTTTGGCAGCAGCAGG 96TGCAAAA6GGACGAGTTTGAACATTTGTTGTCGCCAGAACCAGACCCATTCTGATTGTTATGTAAGCTGTAACATCAAAGTTTGGCAGCAGCAGG	4685 4686 4699 4699 4699 4699
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4686 4687 4700 4700 4700 4700	TTTTCATGTGCTCTTAAGCGTTGGGGGTTTGTTCCGTTTGGTTTTCAACTGTATGCTAGCTA	4785 4786 4799 4799 4799 4799
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4786 4787 4800 4800 4800 4800	ТӨТАӨТБСАВӨСӨТӨСАВСТАААЛБСАВТАТАВСТӨАСТӨТТААСТТТААВСТӨАТТӨТТССАТБСАТӨТВССАВТААААВӨССАВТСАВБААТӨАӨТСТ ТӨГАРЛБСАВӨСӨТӨСАВСТАААЛБСАВТАТАВСТӨАСТӨТТААСТТТТААВСТӨАТТӨТТССАТБСАТӨГБССАВТААААВӨССАВТСАВБААТӨАӨТСТ ТӨГАРЛБСАВӨСӨТӨСАВСТАААЛБСАВТАТАВСТӨАСТӨТТААСТТТААВСТӨАТТӨТТССАТБСАТӨГБССАВТААААВӨССАВТСАВБААТӨАӨТСТ ТӨГАРЛБСАВӨСӨТВСАВСТАААЛБСАВТАТАВСТӨАСТӨТТААСТТТААВСТӨАТТӨРТССАТВСАТӨГБССАВТААААВӨССАВТСАВБААТӨАӨТСТ ТӨГАРЛБСАВБСӨТВСАВСТАААЛБСАВТАТАВСТӨАСТӨТТААСТТТААВСТӨАТТӨРТССАТВСАТӨЛБССАВТААВАӨССАВТСАВБСАВТАВЭ ТӨГАРЛБСАВБСӨТВСАВСТАААЛБСАВТАТАВСТӨАСТӨТТААСТТТААВСТӨАТТӨРТССАТВСАТӨЛБССАВТААААВӨССАВТСАВБААТӨАӨТСТ ТӨГАРЛБСАВБСӨТВСАВСТАААЛБСАВТАТАВСТӨАСТӨТТААСТТТАВСТӨАТТӨРТССАТВСАТӨЛБССАВТААААВӨССАВТСАВБААТӨАӨТСТ	4885 4886 4899 4899 4899 4899
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4886 4887 4900 4900 4900 4900	CATGGATCAATATATGGTGCAGACATGTCAGTAGGATATAGGAGTATTACATTATAGGTTTTTTCAGCTTCAATAACGTTCATGTTAGCTTGTACATTGTA CATGGATCAATATATGGTGCAGACATGTCAGTAGGATATAGGAGTATTACATTATAGTTTTTTCAGCTTCAATAACGTTCATGTAGCTTGTACATTGTA CATGGATCAATATATGGTGCAGACATGTCAGTAGGAGATATAGGAGTATTACATTATAGTTTTTTCAGCTTCAATGACGTTCATGTAGCTTGTACATTGTA CATGGATCAATATATGGTGCAGACATGTCAGTAGGAGATATAGGAGTATTACATTATAGTTTTTTCAGCTTCAATGACGTTCATGTAGCTTGACATTGTA CATGGATCAATATATGGTGCAGACATGTGAGTAGGAGGAGTATACATTATAGTTTTTTCAGCTTCAATGACGTTCATGTAGCTTGACATTGTA CATGGATCAATATATGGTGCAGACATGTAGGTAGGAGAATATAGGAGTATTACATTATAGTTTTTCCAGCTTCAATAACGTTCAAGTAGCTTGTAGCTTGTACATTGTA CATGGATCAATATATGGTGCAGACATGTCAGTAGGAGTATAGGAGTATTACAATTATAGTTTTTCAGCTTCAATAACGTTCAATGTAGCTTGACATTGTA	4985 4986 4999 4999 4999 4999
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	4986 4987 5000 5000 5000 5000	TGGCAACCCTTCCATACTTGCGTTAGCCACAAAAGTTCACCATGTTAGCTTGGCTTTAGATCAGTTTAAACTGTCCTTTAATAGCAAATTAATAATCCAT TGGCAACCCTTCCATACTTGCGTTAGCCACAAAAGTTCACCATGTTAGCTTGGCTTTAGATCAGTTTAAACTGTCCTTTAATAGCAAATTAATAATCAT TGGCAACCCTTCCATACTTGCGTTAGCCACAAAAGTTCACCATGTTAGCTTGGCTTTAGATCAGTTTAAAACTGTCCTTTAATAGCAAATTAATAATCAAT TGGCAACCCTTCCATACTTGCGTTAGCCAAAAAGTTCACCATGTTAGCTTGGCTTTAGATCAGTTTAAAACTGTCCTTTAATAGCAAATTAATAATCAAT TGGCAACCCTTCCATACTTGCGTTAGCCAAAAAGTTCACCATGTTAGCTTGGCTTTAGATCAGTTTAAACTGTCCTTTAATAGCAAATTAATAATCAAT TGGCAACCCTTCCATACTTGCGTTAGCCACAAAAGTTCACCATGTTAGCTTGGCTTTAGATCAGTTTAAACTGTCCTTTAATAGCAAATTAATAATCAAT TGGCAACCCTTCCATACTTGCGTTAGCCACAAAAGTTCACCATGTTAGCTTGGCTTTAGATCAGTTTAAACTGTCCTTTAATAGCAAATTAATAATCAAT	5085 5086 5099 5099 5099 5099
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5086 5087 5100 5100 5100 5100	AAATGAAATTTTACTTCCACTGTTTACCAGTGCTACTACTGTTCTACCTCCAGCGTTCAACAGCTGAGAAACGTGAGGAGTCCAGCAGCAGCAGCACCAT AAATGAAATTTTACTTCCACTGTTTACCAGTGCTACTACTGTTCTACCTCCAGCGTTCAACAGCTGAGAAACGTGAGGAGTCCAGCAGCAGCAGCAGCAG AAATGAAATTTTACTTCCACTGTTTACCAGTGCTACTACTGTTCTACCTCCAGCGTTCAACAGCTGAGAAACGTGAGGAGTCCAGCAGCAGCAGCAGCAGCAGCAGCAGCA AAATGAAATTTTACTTCCACTGTTTACCAGTGCTACTGTCTACGAGCGGTCCAGCGAGCAGCAGGAGAGCGAGGAGGAGGAGGAGGAGGA	5185 5186 5199 5199 5199 5199
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5186 5187 5200 5200 5200 5200	TTACTGCAATGCGAGAGAGATGTTCTCCGTTTCCTCCTTCACTGAGGCTTAGGAGTAGGAGTAGTAGTGGTGTTTTTCGTGTCGACTTGTTTAACATTATC TTACTGCAATGCGAGAGAGATGTTCTCCGTTTCCTCCTCACTGAGGCTTAGGAGTAGGAGTAGTGTGTTTTTCGTGTCGACTGGTTTAACATTATC TTACTGCAATGCGAGAGAGAGATGTTCCCCTTCCTCCTCCCTC	5285 5286 5299 5299 5299 5299 5299
Nipponbare-repeatà Epi-d1-repeatà Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5286 5287 5300 5300 5300 5300	STTAACACCATCAASTSTCAATSCCASTASCCTSCTSCTSCTSTCTSATCATTCTTCCTTC	5385 5386 5399 5399 5399 5399
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5386 5387 5400 5400 5400 5400	TGTTCAAGTGACCATGGTTCTTGACAGAAGCAGCCCTTGTTCTTTCCTGTCCCTTTGTTGTTCAGTACGCTATTATTCTCTTGGGTACTAGACCTTGTA TGTTCAAGTGACCATGGTTCTTGACAGAAGCAGCCCTTGTTCTTTCCTGTCCCTTTGTTGTTCGTAGGCACTATATTCTCTTGGGTACTAGACCTTGTA TGTTCAAGTGACCATGGTTCTTGACAGAGCAGCCCTTGTTCTTTCCTGTCCCTTTGTTGTTCAGTACGCTATTATTCTCTTGGGTACTAGACCTTGTA TGTTCAAGTGACCATGGTTCTTGACAGAGCAGCCCTTGTTCTTTCCTGTCCCTTTGTTGTTCAGTACGCTATTATTCTCTTGGGTACTAGACCTTGTA TGTTCAAGTGACCATGGTTCTTGACAGAGCAGCCCTTGTTCTTTCCTGTCCCTTTGTTGTTCAGTACGCTATTATTCTCTTGGGGTACTAGACCTTGTA TGTTCAAGTGACCATGGTTCTTGACAGAGAGCCGCTTGTTCTTTCCTGTCCCTTTGTTGTTCAGTACGCTATTATTCTCTTGGGTACTAGACCTTGTA TGTTCAAGTGACCATGGTTCTTGACAGAGCAGCCCTTGTTCTTTCCTGTCCCTTTGTTGTCAGTACGCTATTATTCTCTTGGGTACTAGACCTTGTA	5485 5486 5499 5499 5499 5499
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5486 5487 5500 5500 5500 5500	TAAACCGGTTGTGAAATCCTCAATCAAATAAAAGTTAACTCGAAATTTGTGGCCTGTTCCAAGTGTTTGGCAAACCAATATGTATATTATCCACCCCGAT TAAACCGGTTGTGAAATCCTCAATCAAATAAAAGTTAACTCGAAATTTGTGGCCTGTTCCAAGTGTTTGGCAAACCAATATGTATATTATCCACCCCGATT TAAACCGGTTGTGAAATCCTCAATCAAATAAAAGTTAACTCGAAATTTGTGGCCTGTTCCAAGTGTTTGGCAAACCAATATGTATATTATCCACCCGATT TAAACCGGTTGTGAAATCCTCAATCAAATAAAAGTTAACTCGAAATTTGTGGCCTGTTCCAAGTGTTTGGCAAACCAATAGTATATTATCCACCCGATT TAAACCGGTTGTGAAATCCTCAATCAAATAAAAGTTAACTCGAAATTTGTGGCCTGTTCCAAGTGTTTGGCAAACCAATAGTATATTATCCACCGGATT TAAACCGGTTGTGAAATCCTCAATCAAATAAAAGTTAACTCGAAATTTGTGGCCTGTTCCAAGTGTTTGGCAAACCAATAGTATATTATCCACCCGAAT TAAACCGGTTGTGAAATCCTCAATCAAATAAAGTTAACTCGAAATTTGTGGCCTGTTCCAAGTGTTTGGCAAACCAATAGTATATTATCCACCCGGATT	5585 5586 5599 5599 5599 5599

Fig. S2 continued.

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5586 5587 5600 5600 5600 5600	ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTCCGGAGTCTTAAACTTTACCCGAATCCAATCTGGAAACCGAAAAGACAGCTGCTTGGGCTGATGGC ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTCCGGAGTCTTAAACTTTACCCGAATCCGAATCGGAAACCGAAAAGACAGCTGCTTGGCTGATGGC ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTCCGGAGTCTTAAACTTTACCCGAATCGGAAACCGAAAAGACAGCTGCTTGGCTGATGGC ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTGCTGCGGAGTCTTAAACTTTACCCGAATCGGAAACGGAAAAGACAGCTGCTGGTGGCTGATGGC ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTCCGGAGTCTTAAACTTTACCCGAATCGGAAACGAAAAGACAGCAGCGCTGGTGGCTGATGGC ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTCCGGAGTCTTAACCTTTACCCGAATCGGAAACGAAAAGACAGCAGCAGCTGCTTGGCTGATGGC ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTCCGGAGTCTTAAACTTTACCCGAATCGGAAACCGAAAAGACAGCAGCTGCTTGGCTGATGGC ATCTAATGGCAATACABTGCCTAAAATTCCTGCTTCCGGGAGTCTTAAACTTTACCCGAATCCGGAAACCGAAAAGACAGCTGCTTGGCTGATGGG	5685 5699 5699 5699 5699
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5686 5687 5700 5700 5700 5700	AAGTCACTGGG7ACATTGATTTGTGTTAATTTTCAGTCCAATAAAACAGCGCAAAAATTGTAAGGGTGATCCCTCTTTAGTAAAGCCATGCATTCTGCAA AAGTCACTGGG7ACATTGATTGTGTGTTAATTTTCAGTCCAATAAAACAGCGCAAAAATTGTAAGGGGTGATCCCTCTTTAGTAAAGCCATGCATTCTGCAA AAGTCACTGGG7ACATTGATTTGTGTTAATTTTCAGTCCAATAAAACAGCGCAAAAATTGTAAGGGTGATCCCTCTTTAGTAAAGCCATGCATTCTGCAA AAGTCACTGGG7ACATTGATTTGTGTTAATTTTCAGTCCAATAAAACAGCGAAAAATTGTAAGGGTGATCCCTCTTTAGTAAAGCCATGCATTCTGCAA AAGTCACTGGG7ACATTGATTTGGTGTTAATTTTCAGTCCAATAAAACAGCGAAAAATTGTAAGGGTGATCCCTCTTTAGTAAAGCCATGCATG	5785 5786 5799 5799 5799 5799
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5786 5787 5800 5800 5800 5800	ACTCT0TTGCAATGCAAGCT0TATCCTATATCCA0TGCCGATGAACCAATTCT0TTTGCAGACCT0TACCCTATCTCTACTACCAAGCCAAG	5885 5886 5899 5899 5899 5899
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5886 5887 5900 5900 5900 5900	AGTGTTTGATCTGCAGTGGAATACTAGCAGGTATTCCACCATTTCAGGGTTGGGAGTGTGATTGAT	5985 5986 5999 5999 5999 5999
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	5986 5987 6000 6000 6000 6000	ercagecteccerceccerceccercecererererereseabaageccceereergergerterecceecegcgageabreectecaacageategectetter ercagecteccerteccerceccerceccererererergergergergergergerterecceecegcgageabreectecaacageategecterter ercagecteccerteccerteccerefgergergergergergergergergergerterterecceecegcgageabreectecaacageategecterter ercagecteccerteccerteccergergergergergergergergergergergergerterterecceecegcgageabreectecaacageategecterterter ercagecteccerteccerteccergergergergergergergergergergergergertertecceecegcgageabreecteccaacageategecterterter ercagecteccerteccerteccergergergergergergergergergergergertertecceecegcgageabreectecaacageategecterterter ercagecteccerteccerteccergergergergergergergergergertertecceecegcgageabreectecaacageategecterterter ercagecteccerteccerteccergergergergergergergergergertertecceecegcgageabreectecaacageategecterterter	6085 6086 6099 6099 6099
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	6086 6087 6100 6100 6100 6100	SCATGGECEGATCAGCGGGTGGCTTATGGCGGTGGCCACGCTGTTCGCCGGCGACGGACCGGCCGG	6185 6186 6199 6199 6199 6199
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	6186 6187 6200 6200 6200 6200	CTGGATAATTTCGAGACTTCGGGCCGGCGTGCGTGCAAAGCCCATACATA	6285 6299 6299 6299 6299
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	6286 6287 6300 6300 6300 6300	AAAATCTATEACGACTGACACCGGCATAAAAGACGACGCGCTCGCATCGCTCCTGGCGAGCTCGGTGGGCTTGATACCCCAGCTGGGGGGGG	6383 6384 6399 6399 6397 6397
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Epi-d1-repeatC Epi-d1-repeatC	6286 6287 6300 6300 6300 6384 6385 6400 6400 6398 6398	AAAATCTATEACEACTEACACCEGCATAAAAEACEACEGCETCECATCECTCCTEGCEAECTGETEGCETEAECTTETTACCCCAECTEGEEGEGE AAAATCTATEACEACTEACACCEGCATAAAAEACEACEGCETCECATCECTCCTEGCEAECTCEFEEGCETEAECTTETTACCCCAECTEGEEGEGE AAAATCTATEACEACTEACACCEGCATAAAAEACEACCECTCECATCCTCCTEGCEAECTCEFEEGCETEAECTTETTACCCCAECTEGEEGEGE AAAATCTATEACEACTEACACCEECATAAAAEACEACCECTCECT	6383 6384 6399 6397 6397 6472 6473 6499 6497 6486 6486
Nipponbare-repeatA Epi-d1-repeatB Nipponbare-repeatB Nipponbare-repeatC Epi-d1-repeatC Nipponbare-repeatA Nipponbare-repeatB Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Epi-d1-repeatB Epi-d1-repeatB Epi-d1-repeatB Epi-d1-repeatC Epi-d1-repeatC	6286 6300 6300 6300 6384 6385 6400 6398 6398 6473 6474 6500 6498 6487 6487	AAAATCTATGACGACTGACACCGGCATAAAAGACGACGCGCTCCCATCGCTCCGGCGGGCG	6383 6399 6399 6397 6397 6472 6479 6479 6499 6497 6486 6486 6572 6579 6599 6597 6586 6586
Nipponbare-repeatA Epi-d1-repeatB Nipponbare-repeatB Dipponbare-repeatC Epi-d1-repeatC Nipponbare-repeatA Nipponbare-repeatB Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatC Epi-d1-repeatC Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Sipt-10-repeatB Epi-d1-repeatC Sipponbare-repeatB Epi-d1-repeatB	6286 6287 6300 6300 6300 6300 6384 6385 6400 6398 6473 6500 6473 6500 6487 6487 6573 6574 6573 6574 6587 6587	AAAATCTATEAGAGTEACACCEGGCATAAAAGAGGGGGCTCECATCECTCCTEGGGGGGGGGG	6383 6395 6397 6397 6472 6499 6499 6499 6499 6499 6499 6499 649
Nipponbare-repeatA Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatC Nipponbare-repeatC Epi-d1-repeatC Nipponbare-repeatB Nipponbare-repeatB Nipponbare-repeatC Epi-d1-repeatA Nipponbare-repeatC Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatC Epi-d1-repeatC Nipponbare-repeatC Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatA Epi-d1-repeatA Sipponbare-repeatB Epi-d1-repeatB Epi-d1-repeatB Epi-d1-repeatB Epi-d1-repeatB Epi-d1-repeatC	6286 6287 6300 6300 6300 6385 6400 6408 6398 6398 6473 6474 6598 6487 6573 6574 6598 6598 6598 6598 6598 6598 6598 6598	AAAATCTATEA GACTEACACCEGCATAAAAGA GACGGCT CECATCGCT OCTEGCBAGCT CEPTGGCTTACCCCAGCTEGGGGGGGG AAAATCTATEACGACTEACACCGGCATAAAAGACGACGGCT CECATCGCT OCTEGGGAGCT CEPTGGCGTGAGCTTETTACCCCAGCTEGGGGGGGGG AAATCTATEACGACTEACACCGGCATAAAAGACGACGGCT CECATCGCT OCTEGGGAGCT CEPTGGCGTGAGCTTETTACCCCAGCTEGGGGGGGGG AAATCTATEACGACTEACACCGGCATAAAAGACGACGGCT CECATCGCT OCTEGGGAGCT CEPTGGCGTGAGCTTETTACCCCAGCTEGGGGGGGGG AAATCTATEACGACTEACACCGGCATAAAAGACGACGGCT CECATCGCT OCTEGGGAGCT CEPTGGCGTGAGCTTETTACCCCAGCTEGGGGGGGGG CAAATCTATEACGACTEACACCGGCATAAAAGACGACGCGCT CECATCGCT OCTGGCGGAGCT CEPTGGCGTGAGCTTETTACCCCAGCTEGGGGGGGGG CAAATCTATEACGACTEACACCGGCATAAAAGACGACGCGCT CECATCGCT OCTGGCGAGCTCGFTGGCGTGAGCTTGTTACCCCAGCTEGGGGGGGGG CAAATCTATEACGACTEACACCGGCATAAAAGACGACGCCT CECATCGCT OCTGCGAACTATGGATGCAAACTCCTC CCGACTTTEGGCCCAC CGGGAGGGGG CGGGCGGGGG CGGGAGGGGC CGGGAGTTEGCATGTTTCGGCTECTGGGGAAAATGAGGTTTCT CCCTCGATCGAATATGGATGCAAACATCCTC CCGACTTTEGCCCAC CGGGGGGGGG CGGGGGGGG CGGGAGGGGC CGGGAGTGGCATGTTTCGGCTECTGGGGAAAATGAGGTTTCT CCCTCGATCGAATATGGATGCAAACATCCTC CCGACTTTEGCCCAC CGGGGGGGGGG CGGGGGGGGC CGGGAGTTGGCATGTTTCGGCTGCTGGAGGAAAATGAGGTTTCT CCCTCGATCGAATATGGATGCAAACATCCTC CCGACTTTGGCCCAC CGGGGGGGGG CGGGGGGGGG CGGGGGGGGC CGGGAGTTGGCATGTTTCGGCTGCTGGAGGAAAATGAGGTTTCTCCCCCGCGATATGGATGCAAACATCCTCCCGGCTTTGGCCCCC CGGGAGGGGACGAGGTTGGCTGTGGGGCGCGCGCTCATGGAGCGAAAGGGCCTGAATCGGGGGGAGGATGGTGGGGGGGG	6383 6394 6395 6397 6497 6496 6497 6496 6497 6496 6572 6572 6576 6599 6599 6597 6586 6599 6586 6672 6673 6643 6643 6644 6686 6772 6673 6643 6643 6672 6673 6672 6676 6676 6676 6676 667
Nipponbare-repeatA Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatC Nipponbare-repeatC Epi-d1-repeatC Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC Nipponbare-repeatC Epi-d1-repeatA Nipponbare-repeatA Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatC Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatB Epi-d1-repeatC	6286 6287 6300 6300 6300 6300 6398 6400 6398 6498 6498 6498 6498 6498 6498 6498 64	AAAAT CTATGACGACTGACA COGGCATAAAAGACGACGGCGTCGCATCGCTCCTGGCGAGCTCGGTGGCGTGAGCTTGTTACCCCAGCTGCGGGGGGGG	6383 6394 6395 6397 6472 6497 6497 6496 6496 6496 6496 6572 6573 6586 6586 6586 6572 6586 6586 6641 6686 6641 6686 6641 6686 6672 2673 6783 6773 6783 6773 6783 6783 6783 6

Fig. S2 continued.

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Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	6973 6974 6906 6904 6984 6984	9AAAGCAATACTACCTTGGGATTAAAAGTGGACCGTTTTGCAAGATTAGGGGTTCAGGGCCGTTTAAAACTCAACGACAAGATAAGGGACCTTAGATGAA 9AAAGCAATACTACCTTGGGATTAAAAGTGGACCGTTTTGCAAGATTAGGGGTTCAGGGCCGTTTAAAACTCAACGACAAGATAAGGGACCTTAGATGAA 9AAAGCAATACTACCTTGGGATTAAAAGTGGACCGTTTTGCAAGATTAGGGGTTCAGGGCCGTTTAAAACTCAACGACAAGATAAGGGACCTTAGATGAA 9AAAGCAATACTACCTTGGGATTAAAAGTGGACCGTTTTGCAAGATTAGGGGTTCAGGGCCGTTTAAAACCAACGACAAGATAAGGGACCTTAGATGAA 9AAAGCAATACTACCTTGGGATTAAAAGTGGACCGTTTTGCAAGATTAGGGGTTCAGGGCCGTTTAAAACTCAACGACAAGATAAGGGACCTTAGATGAA 9AAAGCAATACTACCTTGGGATTAAAAGTGGACCGTTTTGCAAGATTAGGGGTTCAGGGCCGTTTAAAACTCAACGACAAGATAAGGGACCTTAGATGAA	7072 7073 7005 7003 7083 7083
Nipponbare-repeatA Epi-di-repeatA Nipponbare-repeatB Epi-di-repeatB Nipponbare-repeatC Epi-di-repeatC	7073 7074 7006 7004 7084 7084	CTTTTTTGGGAGATGAGGCGCCT0TGCATATGACCCATAGGCAGGGCAACGCGGCAGCAGAGGCGCGCACGACGACCTCCGCCCCCAATCCGTCCG	7172 7173 7105 7103 7183 7183
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7173 7174 7106 7104 7184 7184	TCCTCGCCCGCCGCCCCCGACTCCCCGTCCCCGCCGCCGCCGCGCGCCCCGCCGCCGCCCCCGCGCGC	7272 7273 7205 7203 7283 7283
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7273 7274 7206 7204 7284 7284	CATTOGCATCCTAATCCATCCCATCCGGCCTCGGCCTCGAATTTCGTCTCCTCGCCCGCC	7372 7373 7305 7303 7383 7383 7383
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7373 7374 7306 7304 7384 7384	BGC0TCCTCCTTCTTCCACCGCATC0TCGCTCGCCG0T6A6CATCCCTCCCTACCCACACCTCATCAG0TATTCTGC0TTATCCCTCAAAAA5TTT6G6G BGC0TCCTCCTTCTTCCACCGCATC0TCGCCGGTCGCCG0T6A6CATCCCTCCCCCCCCCCCCCCCCCCCCCCCCCCCC	7472 7473 7405 7403 7483 7483
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7473 7474 7406 7404 7484 7484	BTTCAACCGAAACAGGGTTAGATCTGCCTGGCCCAGGTCCACCTACTTTCAAGTTGTTAATTTGGATTTCCGTTTTAGCAGATGTAATTTGGTTATTG BTTCAACCGAAACAGGGTTAGATCTGCCTGGCCCAGGTCCACCTACTTTCAAGTTGTTAATTTGATTTCCGTTTTTAGCAGATGTAATTTGGTTATTG BTTCAACGAAACAGGGTTAGATCTGCCTGGCCAGGTCCACCTACAGTTGTGTAATTTGATTTCGTTTTTAGCAGATGTAATTTGGTTATTG BTTCAACGAAACAGGGTTAGATCTGCCTGGCCAGGTCCACCTACAGTTGTCAATTTGATTTCGTTTTTAGCAGATGTAATTTGGTTATT BTTCAACGAAACAGGGTTAGATCTGGCCTGGCCCAGCTCCACCTACTTTCAAGTTGTTAATTTGATTTCGGTTTTTAGCAGATGTAATTTGGTTATT BTTCAACGAAACAGGGTTAGATCTGGCCTGGCCCGCCCCCCCC	7572 7573 7505 7503 7583 7583
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7573 7574 7506 7504 7584 7584	ААТСТСАТССАЛАСАСССТТАБААСБАААЛАТБТААБСТСАСАТААТТТБТАСТСАТССАЛАСТСАСАТАААТТТСТТААБААБААТСТАБАССАСАААС ААТСТСАТССАЛАСАСССТТАБААСБАААААТБТААБСТСАСАТААТТТБТАСТСАТССАЛАСТСАСАТАААТТТСТТААБААБААТСТАБАССАСАААС ААТСТСАТССАЛАСАСССТТАБААСБААААТБТААБСТСАСАТААТТТБТАСТСАТССАЛАСТСАСТАААТТТСТТААБААБААТСТАБССАСАААС ААТСТСАТССАЛАСАССТТАБААСБААЛАЛБТААБСТСАСАТААТТТБТАСТСАТССАЛАСТСАСТАААТТТСТТААБААБААТСАССАССАЛАС ААТСТСАТССАЛАСАССТТАБААСБААЛАЛБТААБСТСАСАТААТТТБТАСТСАТССАЛАСТСАСАТАААТТТСТТААБААБААТСТАБССАССАЛАС ААТСТСАТССАЛАСАССТТАБААСБААЛАЛБТАБСТСАССАТААТТТБТАСТСАТССАЛАСТСАСАТАААТТТСТТАБААБААБААТСТАБСАССАСАААС ААТСТСАТССАЛАСАСССТТАБААСБААЛАЛБТАБСТСАСАТААТТТБТАСТСАТССАЛАСТСАСАТАААТТТСТТАБАБАБААТСТАБСАССАСАААС ААТСТСАТССАЛАСАСССТТАБААСБААЛААТБТАВСТСАСАТААТТТБТАСТСАТССАЛАСТСАСАТАААТТТСТТАБАБАВБААТСТАБАССАСАААС	7672 7673 7605 7603 7683 7683
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7673 7674 7606 7604 7684 7684	TACCCATAGTCACAAAAATATCTTTTTTTATCAAGGTATATTCTTATAAGTAATTTTTATTCCACAAAATTTTCTAAAGGACATACTGTGACACTTGGCAT TACCCATAGTCACAAAAATATCTTTTTTATCAAGGTATATTCTTATAAGTAATTTTTTTT	7772 7773 7705 7703 7783 7783
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7773 7774 7706 7704 7784 7784	BAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTGAAACCATTGAACGTACTTTGTCTTCCCGTCCCTAAAACATTGTGATATATCTGTAATAT BAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTGAAACCATTGAACGTACTTTGTCTTCCCGTCCCTAAAACATTGTGATATATCTGTAATAT BAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTGAAACCATTGAACGTACTTTGTCTTCCCGTCCCTAAAACATTGTGATATATCTGTAATAT GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTGAAACATGAACGATCTTGTCTTCCCGTCCCTAAAACATTGTGATATATCTGTAATAT GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTGAAACCATTGAACGTACTTTGTCTTCCCGTCCCTAAAACATTGTGATATATCTGTAATAT GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTGAAACCATTGAACGTACTTTGTCTTCCCGTCCCTAAAACATTGTGATATATCTGTAATAT GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTGAAACCATTGAACGTACTTTGTCTTCCCGTCCCTAAAACATTGTGATATATCTGTAATAT	7872 7873 7805 7803 7883 7883
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7873 7874 7806 7804 7884 7884	TTTAATATTTTAATTTTAAAAATAATTTAGACTAATAATATAGATATTAAATTAGGTAATTAGGTAAATTCAAATCAAATAGGTATGGAATAAAAAAAA	7972 7973 7905 7903 7983 7983
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	7973 7974 7906 7904 7984 7984	CAAAATGATATATGCCAAGTACAATCTAATAACAATAGAATGCACTTTTGGTTAATGTTTACTCCTAATTTCTTAATTTCTAGTTTGGCCCCCCCC	8072 8073 8005 8003 8083 8083
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	8073 8074 8006 8004 8084 8084	TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATATTTATGTAAACTATGTTCTTTATTACCAATCAAAATAGACACCTT TTATGGTAAAAAATCGTTATGTTTTAACTATTATCTGCTAGAGCATATGTAATATTTATGTAAACTATGTTCTTTATTACCAATCAAAATAGACACCTT TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATATTTATGTAAACTATGTTCTTTATTACCAATCAAAATAGACACCTT TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATATTATGTAAACTATGTTCTTTATTACCAATCAAAATAGACACCTT TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATATTATGTAAACTATGTTCTTTATTACCAATCAAAATAGACCACTT TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATATTATGTAAACTATGTTCTTTATTACCAATCAAAATAGACCACTT TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATTATGTAAACTATGTTCTTTATTATCAAATCAAAATAGACCACTT TTATGGTAAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAAATTATGTAAACTATGTTCTTTATTATCAAATCAAAATAGACCACTT	8172 8173 8105 8103 8183 8183
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	8173 8174 8106 8104 8184 8184	ACCTACTTTCATCAAAGAAATAAAAAAA ACCTACTTTCATCAAAAGAAATAAAAAAA ACCTACTTTCATCAAAAGAAATAAAAAAAAAA	8240 8241 8205 8171 8251 8251
Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC	8241 8242 8206 8172 8252 8252	TATGGAACGCATTTCOCTCAAAACGCAAAAACCGGGGCCCCGAGCCCTCGACACCCACC	8340 8341 8305 8271 8351 8351

Fig. S2 continued.

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB 8341 8342 8306 8272 Nipponbare-repeatC Epi-d1-repeatC 8352 8352
 Nipponbare-repeatA
 8441

 Epi-d1-repeatA
 8442

 Nipponbare-repeatB
 8406

 Epi-d1-repeatA
 8372

 Nipponbare-repeatC
 8401

 Epi-d1-repeatC
 8401
 8442 ACCTT 8406 ACCTT 8372 ACCTT CATT CTTCTCTCTCTCACTCTCGTCT ATT CTCTT Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC 8641 8642 8606 8572 ACTATT TAG 8401 8401

Nipponbare-repeatA 8741 Epi-di-repeatA 8742 Nipponbare-repeatB 8706 Epi-di-repeatB 8672 Nipponbare-repeatC 8401 Epi-di-repeatC 8401

PNAS PNAS

Nipponbare-repeatA Epi-d1-repeatA Nipponbare-repeatB Epi-d1-repeatB Nipponbare-repeatC Epi-d1-repeatC



8401 8401

8540

8541 8505 8471

8401 8401

GAGTCACTCAAACCATCCAAT GAGTCACTCAAACCATCCAAT GAGTCACTCAAACCATCCAAT GAGTCACTCAAACCATCCAAT

CACAC

Fig. S2 continued.



Fig. S3. Construction and gross morphologies of nearly isogenic line (NIL) of *Epi-d1*. The chromosomes of *Epi-d1* and Kasalath are shown as blue and yellow bars, respectively. (a) NIL carries *D1* locus from *Epi-d1* in Kasalath genome background. (b) NIL-*Epi-d1* shows dwarf (*Left*), chimeric (*Center*), and normal (*Right*) phenotypes.



Fig. S4. DNA methylation analysis of 168-bp centromere specific repeat. The genomic DNA extracted from Nipponbare (Nip), *Epi-normal* (Epi-N), and *Epi-dwarf* (Epi-d) were digested by DNA methylation insensitive restriction enzyme, Mspl or DNA methylation-sensitive restriction enzyme HapII. Digested DNAs were hybridized with 168-bp centromere-specific repeat probe.

Table S1. Segregation of chimeric plant

			Phenotype of progenies		
Four independent chimeric plants	Seed source	Normal, <i>n</i> (%)	Chimera, <i>n</i> (%)	Dwarf, <i>n</i> (%)	Total
Plant 1	Normal tillers	44 (23.5)	127 (67.9)	16 (8.5)	187
	Dwarf tillers	3 (2.8)	44 (41.5)	59 (55.7)	106
Plant 2	Normal tillers	59 (22.9)	149 (57.6)	50 (19.4)	258
	Dwarf tillers	21 (23.1)	60 (65.9)	10 (11.0)	91
Plant 3	Normal tillers	86 (43.0)	66 (33.0)	48 (24.0)	200
	Dwarf tillers	2 (1.1)	93 (51.7)	85 (47.2)	180
Plant 4	Normal tillers	47 (31.3)	55 (36.7)	48 (32.0)	150
	Dwarf tillers	0 (0.0)	69 (53.1)	61 (46.9)	130

Table S2. Phenotypic inversion in progenies of normal or dwarf plants of Epi-d1

Seed source	Normal	Chimera	Dwarf	Total
Epi-normal plant 1	2,480	220	175	2,875
Epi-normal plant 2	2,631	315	26	2,972
Epi-normal plant 3	2,064	501	143	2,708
Epi-normal plant 4	2,831	49	174	3,054
Total	10,006	1,085	518	11,609
	(86.2%)	(9.3%)	(4.5%)	(100%)
<i>Epi-dwarf</i> plant 5	12	713	2,033	2,758
Epi-dwarf plant 6	43	809	2,042	2,894
Epi-dwarf plant 7	31	672	2,229	2,932
Epi-dwarf plant 8	4	744	1,708	2,456
Total	90	2,938	8,012	11,040
	(0.8%)	(26.6%)	(72.6%)	(100%)

Table S3. Crossing experiment for allelic interaction

	Segregation in F ₂					
Combination	Normal	Dwarf	Chimera	Total	χ² 3:1(N:D)	Р
Epi-dwarf/Epi-normal	383	134	3	520	0.233	0.50–0.70
Epi-normal/Epi-dwarf	259	102	0	361	2.040	0.10-0.30
Epi-dwarf/IR24	47	15	0	62	0.022	0.70-0.90
IR24/Epi-dwarf	224	71	3	298	0.137	0.70-0.90
Epi-dwarf/Taichung 65	260	88	0	348	0.015	0.90-0.99
Taichung 65/Epi-dwarf	318	94	5	417	1.049	0.30-0.50

Table S4. Allelism test between Epi-d1 and d1 mutant

Seed source	Normal	Chimera	Dwarf	Total
Epi-dwarf / d1	0	6	144	150
	(0%)	(4%)	(96%)	(100%)