

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'-AAAAA-GTAATTCCAATCACAATCCGAA-3', d1-1002-L; 5'-CC-TCTCCTGATGATGCAGTG-3', d1-1005-U; 5'-GTTGAGT-AACCACGTCTTTCGACGTCTGC-3', d1-1005-L; 5'-GTG-AAATGGTATTGTTGGAAGAC-3', STS-1-U; 5'-TATGCC-AAGTACAATCTAATAAC-3', STS-1-L; 5'-TTCCGACG-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'-TTAGTGTGGAGCGCGTGGTTTTAAATGCGG-3',

d1-17-L; 5'-ATTTAGGTCCGGCATAAAAA-3', D1-exon9-10U; 5'-TATGAGTCATTTTGCAGGAGG-3', D1-exon9-10L; 5'-ATTGTACTTACTCGCTAATGGC-3', d1-11-U; 5'-AAACAGGAGATATACTAAAACTAAACTC-GG-3', d1-11-L; 5'-AAATTTGACACTAGATCGA-3', d1-12-U; 5'-GATGTCTCATGCAAGTTTG-3', and d1-12-L; 5'-TTAATTTACCTCTTATACTTAGGGAGACT-3'. Repeat-probe-U; 5'-GTTTGTTCGAGAAGCACCAG-3', repeat-probe-L; 5'-GATTGAGGATTCACAACCGG-3', *D1*-probe-U; 5'-TATGAGTCATTTTGCAGGAGG-3', *D1*-probe-L; 5'-ATTGTACTTACTCGCTAATGGC-3', 5s-rRNA-probe-U; 5'-GGATTAGGCTCACCAACCA-3', 5s-rRNA-probe-L; 5'-TTATCCAAACGGCAGCTTCT-3', centromere-specific repeat probe-U; 5'-GAGTGTATTGGGTGCGTTTCG-3', centromere-specific repeat probe-L; 5'-GTGAGTTTTTC-CCACGAACG-3', D1-Chip-1-U; 5'-TATGTATAACAATGTGGGTCAGC-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'.



Empty vector in *d1* background Nipponbare *D1* in *d1* background *Epi-dwarf D1* in *d1* background *Epi-normal D1* in *d1* background Nipponbare *D1* in *Epi-dwarf* background *Epi-dwarf 33.5kb* in *d1* background

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	1	-----AAGTTCAGCTCAAGCCCAAGTAAAGTCAACGGTGCAGGTATGAAACAGCAAGCCCAATAGCCCAATAGTCAACCTAAA	88
Epi-d1-repeatA	1	-----AAGTTCAGCTCAAGCCCAAGTAAAGTCAACGGTGCAGGTATGAAACAGCAAGCCCAATAGCCCAATAGTCAACCTAAA	88
Nipponbare-repeatB	1	CAGCATATATGATATGTTAGGATGGTAAAGGATGCATATACACGATTACAAATACCAACTCCACTCGAAGATAATAAGCCCAATAGTCAACCTAAA	100
Epi-d1-repeatB	1	CAGCATATATGATATGTTAGGATGGTAAAGGATGCATATACACGATTACAAATACCAACTCCACTCGAAGATAATAAGCCCAATAGTCAACCTAAA	100
Nipponbare-repeatC	1	CAGCATATATGATATGTTAGGATGGTAAAGGATGCATATACACGATTACAAATACCAACTCCACTCGAAGATAATAAGCCCAATAGTCAACCTAAA	100
Epi-d1-repeatC	1	CAGCATATATGATATGTTAGGATGGTAAAGGATGCATATACACGATTACAAATACCAACTCCACTCGAAGATAATAAGCCCAATAGTCAACCTAAA	100
Nipponbare-repeatA	89	ATCCCTCCCTACCTGTCCTCTCTCAACGATCCAGAGAGCCCGCTTATCTCCAGCCGAGTGGCCGACAGCGCCCGCAGGATCGAGGAGTC	188
Epi-d1-repeatA	89	ATCCCTCCCTACCTGTCCTCTCTCAACGATCCAGAGAGCCCGCTTATCTCCAGCCGAGTGGCCGACAGCGCCCGCAGGATCGAGGAGTC	188
Nipponbare-repeatB	101	ATCCCTCCCTACCTGTCCTCTCTCAACGATCCAGAGAGCCCGCTTATCTCCAGCCGAGTGGCCGACAGCGCCCGCAGGATCGAGGAGTC	200
Epi-d1-repeatB	101	ATCCCTCCCTACCTGTCCTCTCTCAACGATCCAGAGAGCCCGCTTATCTCCAGCCGAGTGGCCGACAGCGCCCGCAGGATCGAGGAGTC	200
Nipponbare-repeatC	101	ATCCCTCCCTACCTGTCCTCTCTCAACGATCCAGAGAGCCCGCTTATCTCCAGCCGAGTGGCCGACAGCGCCCGCAGGATCGAGGAGTC	200
Epi-d1-repeatC	101	ATCCCTCCCTACCTGTCCTCTCTCAACGATCCAGAGAGCCCGCTTATCTCCAGCCGAGTGGCCGACAGCGCCCGCAGGATCGAGGAGTC	200
Nipponbare-repeatA	189	ATAGTCTGTAGTGCACCCCTTCTTGTGTCGCGCGCTTTCGCGCGCGGTCTCCCGCTTCCACTCGCATCTCAACGTCACACGCTGCCAT	288
Epi-d1-repeatA	189	ATAGTCTGTAGTGCACCCCTTCTTGTGTCGCGCGCTTTCGCGCGCGGTCTCCCGCTTCCACTCGCATCTCAACGTCACACGCTGCCAT	288
Nipponbare-repeatB	201	ATAGTCTGTAGTGCACCCCTTCTTGTGTCGCGCGCTTTCGCGCGCGGTCTCCCGCTTCCACTCGCATCTCAACGTCACACGCTGCCAT	300
Epi-d1-repeatB	201	ATAGTCTGTAGTGCACCCCTTCTTGTGTCGCGCGCTTTCGCGCGCGGTCTCCCGCTTCCACTCGCATCTCAACGTCACACGCTGCCAT	300
Nipponbare-repeatC	201	ATAGTCTGTAGTGCACCCCTTCTTGTGTCGCGCGCTTTCGCGCGCGGTCTCCCGCTTCCACTCGCATCTCAACGTCACACGCTGCCAT	300
Epi-d1-repeatC	201	ATAGTCTGTAGTGCACCCCTTCTTGTGTCGCGCGCTTTCGCGCGCGGTCTCCCGCTTCCACTCGCATCTCAACGTCACACGCTGCCAT	300
Nipponbare-repeatA	289	CGCTCTTCAAGTGTGATCGGGAAGTCAATAGGTCACGCGCTCTCTCCCTACTTGGCTCCGGCCACTAAGACCCCAACTCGCTCTTCTCTCG	388
Epi-d1-repeatA	289	CGCTCTTCAAGTGTGATCGGGAAGTCAATAGGTCACGCGCTCTCTCCCTACTTGGCTCCGGCCACTAAGACCCCAACTCGCTCTTCTCTCG	388
Nipponbare-repeatB	301	CGCTCTTCAAGTGTGATCGGGAAGTCAATAGGTCACGCGCTCTCTCCCTACTTGGCTCCGGCCACTAAGACCCCAACTCGCTCTTCTCTCG	400
Epi-d1-repeatB	301	CGCTCTTCAAGTGTGATCGGGAAGTCAATAGGTCACGCGCTCTCTCCCTACTTGGCTCCGGCCACTAAGACCCCAACTCGCTCTTCTCTCG	400
Nipponbare-repeatC	301	CGCTCTTCAAGTGTGATCGGGAAGTCAATAGGTCACGCGCTCTCTCCCTACTTGGCTCCGGCCACTAAGACCCCAACTCGCTCTTCTCTCG	400
Epi-d1-repeatC	301	CGCTCTTCAAGTGTGATCGGGAAGTCAATAGGTCACGCGCTCTCTCCCTACTTGGCTCCGGCCACTAAGACCCCAACTCGCTCTTCTCTCG	400
Nipponbare-repeatA	389	CGAATTCGCTAGTAAACCCGCGGGCAGACCCCTACTCCGCTGTGGCCGCGCTCTCTGCTCTTGGCTTTCCTTTGGCTCACGAGCCAAA	488
Epi-d1-repeatA	389	CGAATTCGCTAGTAAACCCGCGGGCAGACCCCTACTCCGCTGTGGCCGCGCTCTCTGCTCTTGGCTTTCCTTTGGCTCACGAGCCAAA	488
Nipponbare-repeatB	401	CGAATTCGCTAGTAAACCCGCGGGCAGACCCCTACTCCGCTGTGGCCGCGCTCTCTGCTCTTGGCTTTCCTTTGGCTCACGAGCCAAA	500
Epi-d1-repeatB	401	CGAATTCGCTAGTAAACCCGCGGGCAGACCCCTACTCCGCTGTGGCCGCGCTCTCTGCTCTTGGCTTTCCTTTGGCTCACGAGCCAAA	500
Nipponbare-repeatC	401	CGAATTCGCTAGTAAACCCGCGGGCAGACCCCTACTCCGCTGTGGCCGCGCTCTCTGCTCTTGGCTTTCCTTTGGCTCACGAGCCAAA	500
Epi-d1-repeatC	401	CGAATTCGCTAGTAAACCCGCGGGCAGACCCCTACTCCGCTGTGGCCGCGCTCTCTGCTCTTGGCTTTCCTTTGGCTCACGAGCCAAA	500
Nipponbare-repeatA	489	CGAGCCCACTCGAGTAGACAACCTAGCGAGCTAGTGGTTTTCTAGCTGTTAGGTAATAGCCGAGATAGCTAGACAGCCGAGCTGGCTCGA	588
Epi-d1-repeatA	489	CGAGCCCACTCGAGTAGACAACCTAGCGAGCTAGTGGTTTTCTAGCTGTTAGGTAATAGCCGAGATAGCTAGACAGCCGAGCTGGCTCGA	588
Nipponbare-repeatB	501	CGAGCCCACTCGAGTAGACAACCTAGCGAGCTAGTGGTTTTCTAGCTGTTAGGTAATAGCCGAGATAGCTAGACAGCCGAGCTGGCTCGA	600
Epi-d1-repeatB	501	CGAGCCCACTCGAGTAGACAACCTAGCGAGCTAGTGGTTTTCTAGCTGTTAGGTAATAGCCGAGATAGCTAGACAGCCGAGCTGGCTCGA	600
Nipponbare-repeatC	501	CGAGCCCACTCGAGTAGACAACCTAGCGAGCTAGTGGTTTTCTAGCTGTTAGGTAATAGCCGAGATAGCTAGACAGCCGAGCTGGCTCGA	600
Epi-d1-repeatC	501	CGAGCCCACTCGAGTAGACAACCTAGCGAGCTAGTGGTTTTCTAGCTGTTAGGTAATAGCCGAGATAGCTAGACAGCCGAGCTGGCTCGA	600
Nipponbare-repeatA	589	CATCCACCCGACACGCGTGTCTTTCGCAAAATCTTACTCTCCGAGGCTCACTTCCCTCCCGAGTGGCTGCAAGCTCCGACCTCGAGAGCAG	686
Epi-d1-repeatA	589	CATCCACCCGACACGCGTGTCTTTCGCAAAATCTTACTCTCCGAGGCTCACTTCCCTCCCGAGTGGCTGCAAGCTCCGACCTCGAGAGCAG	686
Nipponbare-repeatB	601	CATCCACCCGACACGCGTGTCTTTCGCAAAATCTTACTCTCCGAGGCTCACTTCCCTCCCGAGTGGCTGCAAGCTCCGACCTCGAGAGCAG	700
Epi-d1-repeatB	601	CATCCACCCGACACGCGTGTCTTTCGCAAAATCTTACTCTCCGAGGCTCACTTCCCTCCCGAGTGGCTGCAAGCTCCGACCTCGAGAGCAG	700
Nipponbare-repeatC	601	CATCCACCCGACACGCGTGTCTTTCGCAAAATCTTACTCTCCGAGGCTCACTTCCCTCCCGAGTGGCTGCAAGCTCCGACCTCGAGAGCAG	700
Epi-d1-repeatC	601	CATCCACCCGACACGCGTGTCTTTCGCAAAATCTTACTCTCCGAGGCTCACTTCCCTCCCGAGTGGCTGCAAGCTCCGACCTCGAGAGCAG	700
Nipponbare-repeatA	687	ATGCACTTCTTCTCTCTCTCCATCCCGCAATCTCCCTCTCTTCCCGTGTCCGCTGCTCCACAGCTCCCGGACCAAACTCCAGCCCTACTATTC	786
Epi-d1-repeatA	687	ATGCACTTCTTCTCTCTCTCCATCCCGCAATCTCCCTCTCTTCCCGTGTCCGCTGCTCCACAGCTCCCGGACCAAACTCCAGCCCTACTATTC	786
Nipponbare-repeatB	701	ATGCACTTCTTCTCTCTCTCCATCCCGCAATCTCCCTCTCTTCCCGTGTCCGCTGCTCCACAGCTCCCGGACCAAACTCCAGCCCTACTATTC	800
Epi-d1-repeatB	701	ATGCACTTCTTCTCTCTCTCCATCCCGCAATCTCCCTCTCTTCCCGTGTCCGCTGCTCCACAGCTCCCGGACCAAACTCCAGCCCTACTATTC	800
Nipponbare-repeatC	701	ATGCACTTCTTCTCTCTCTCCATCCCGCAATCTCCCTCTCTTCCCGTGTCCGCTGCTCCACAGCTCCCGGACCAAACTCCAGCCCTACTATTC	800
Epi-d1-repeatC	701	ATGCACTTCTTCTCTCTCTCCATCCCGCAATCTCCCTCTCTTCCCGTGTCCGCTGCTCCACAGCTCCCGGACCAAACTCCAGCCCTACTATTC	800
Nipponbare-repeatA	787	CGCGCCCGCCCTTCCCTCGCTGGTACGCGCCGACAGCCCGTGGCCCGCGCGCTTCTTGGCTTTCGAGAGCTTTTGTCTGAT	886
Epi-d1-repeatA	787	CGCGCCCGCCCTTCCCTCGCTGGTACGCGCCGACAGCCCGTGGCCCGCGCGCTTCTTGGCTTTCGAGAGCTTTTGTCTGAT	886
Nipponbare-repeatB	801	CGCGCCCGCCCTTCCCTCGCTGGTACGCGCCGACAGCCCGTGGCCCGCGCGCTTCTTGGCTTTCGAGAGCTTTTGTCTGAT	900
Epi-d1-repeatB	801	CGCGCCCGCCCTTCCCTCGCTGGTACGCGCCGACAGCCCGTGGCCCGCGCGCTTCTTGGCTTTCGAGAGCTTTTGTCTGAT	900
Nipponbare-repeatC	801	CGCGCCCGCCCTTCCCTCGCTGGTACGCGCCGACAGCCCGTGGCCCGCGCGCTTCTTGGCTTTCGAGAGCTTTTGTCTGAT	900
Epi-d1-repeatC	801	CGCGCCCGCCCTTCCCTCGCTGGTACGCGCCGACAGCCCGTGGCCCGCGCGCTTCTTGGCTTTCGAGAGCTTTTGTCTGAT	900
Nipponbare-repeatA	887	TTGCTCAGCCCGTAGTATATATATATTTTTGTGGTGGTAAATTCGCGAGCAAAAAGAAAAAATAAATACCGAATGTTATAAACCCGAGCATCT	985
Epi-d1-repeatA	887	TTGCTCAGCCCGTAGTATATATATATTTTTGTGGTGGTAAATTCGCGAGCAAAAAGAAAAAATAAATACCGAATGTTATAAACCCGAGCATCT	986
Nipponbare-repeatB	901	TTGCTCAGCCCGTAGTATATATATATTTTTGTGGTGGTAAATTCGCGAGCAAAAAGAAAAAATAAATACCGAATGTTATAAACCCGAGCATCT	999
Epi-d1-repeatB	901	TTGCTCAGCCCGTAGTATATATATATTTTTGTGGTGGTAAATTCGCGAGCAAAAAGAAAAAATAAATACCGAATGTTATAAACCCGAGCATCT	999
Nipponbare-repeatC	901	TTGCTCAGCCCGTAGTATATATATATTTTTGTGGTGGTAAATTCGCGAGCAAAAAGAAAAAATAAATACCGAATGTTATAAACCCGAGCATCT	999
Epi-d1-repeatC	901	TTGCTCAGCCCGTAGTATATATATATTTTTGTGGTGGTAAATTCGCGAGCAAAAAGAAAAAATAAATACCGAATGTTATAAACCCGAGCATCT	999
Nipponbare-repeatA	986	CATGTTGTCATGATATAGCATATATGATATGTTAGGATCGTAAAGGATGCATAGCACAGATTACCAACCAACTCCACTCGAAGATAAATAGCGT	1085
Epi-d1-repeatA	987	CATGTTGTCATGATATAGCATATATGATATGTTAGGATCGTAAAGGATGCATAGCACAGATTACCAACCAACTCCACTCGAAGATAAATAGCGT	1086
Nipponbare-repeatB	1000	CATGTTGTCATGATATAGCATATATGATATGTTAGGATCGTAAAGGATGCATAGCACAGATTACCAACCAACTCCACTCGAAGATAAATAGCGT	1099
Epi-d1-repeatB	1000	CATGTTGTCATGATATAGCATATATGATATGTTAGGATCGTAAAGGATGCATAGCACAGATTACCAACCAACTCCACTCGAAGATAAATAGCGT	1099
Nipponbare-repeatC	1000	CATGTTGTCATGATATAGCATATATGATATGTTAGGATCGTAAAGGATGCATAGCACAGATTACCAACCAACTCCACTCGAAGATAAATAGCGT	1099
Epi-d1-repeatC	1000	CATGTTGTCATGATATAGCATATATGATATGTTAGGATCGTAAAGGATGCATAGCACAGATTACCAACCAACTCCACTCGAAGATAAATAGCGT	1099
Nipponbare-repeatA	1086	AGTGTGTTGCCAGCTTCGACGTTATGGCCGAATCTTATGATAACAATAATACCATGGTATGTAAGCTCAAAAATGCAAAAATAAATATCTCGAAGCT	1185
Epi-d1-repeatA	1087	AGTGTGTTGCCAGCTTCGACGTTATGGCCGAATCTTATGATAACAATAATACCATGGTATGTAAGCTCAAAAATGCAAAAATAAATATCTCGAAGCT	1186
Nipponbare-repeatB	1100	AGTGTGTTGCCAGCTTCGACGTTATGGCCGAATCTTATGATAACAATAATACCATGGTATGTAAGCTCAAAAATGCAAAAATAAATATCTCGAAGCT	1199
Epi-d1-repeatB	1100	AGTGTGTTGCCAGCTTCGACGTTATGGCCGAATCTTATGATAACAATAATACCATGGTATGTAAGCTCAAAAATGCAAAAATAAATATCTCGAAGCT	1199
Nipponbare-repeatC	1100	AGTGTGTTGCCAGCTTCGACGTTATGGCCGAATCTTATGATAACAATAATACCATGGTATGTAAGCTCAAAAATGCAAAAATAAATATCTCGAAGCT	1199
Epi-d1-repeatC	1100	AGTGTGTTGCCAGCTTCGACGTTATGGCCGAATCTTATGATAACAATAATACCATGGTATGTAAGCTCAAAAATGCAAAAATAAATATCTCGAAGCT	1199
Nipponbare-repeatA	1186	AAAAAAGTATATACATGCAAGAGATGATCAATCCACATATAAATACATGCAAAATAATACAGCCCTGCTCGACAGCCACTGCTCAGCTGTACTAAGC	1285
Epi-d1-repeatA	1187	AAAAAAGTATATACATGCAAGAGATGATCAATCCACATATAAATACATGCAAAATAATACAGCCCTGCTCGACAGCCACTGCTCAGCTGTACTAAGC	1286
Nipponbare-repeatB	1200	AAAAAAGTATATACATGCAAGAGATGATCAATCCACATATAAATACATGCAAAATAATACAGCCCTGCTCGACAGCCACTGCTCAGCTGTACTAAGC	1299
Epi-d1-repeatB	1200	AAAAAAGTATATACATGCAAGAGATGATCAATCCACATATAAATACATGCAAAATAATACAGCCCTGCTCGACAGCCACTGCTCAGCTGTACTAAGC	1299
Nipponbare-repeatC	1200	AAAAAAGTATATACATGCAAGAGATGATCAATCCACATATAAATACATGCAAAATAATACAGCCCTGCTCGACAGCCACTGCTCAGCTGTACTAAGC	1299
Epi-d1-repeatC	1200	AAAAAAGTATATACATGCAAGAGATGATCAATCCACATATAAATACATGCAAAATAATACAGCCCTGCTCGACAGCCACTGCTCAGCTGTACTAAGC	1299
Nipponbare-repeatA	1286	TACTAGCTGTGGCCGCGTGTGTCATCCCAACCGTAGCAATGGCTGCTCAGCAGGCGATGATCTGAAAAAAGTCTCTGCAAGCAGTACATATGATG	1385
Epi-d1-repeatA	1287	TACTAGCTGTGGCCGCGTGTGTCATCCCAACCGTAGCAATGGCTGCTCAGCAGGCGATGATCTGAAAAAAGTCTCTGCAAGCAGTACATATGATG	1386
Nipponbare-repeatB	1300	TACTAGCTGTGGCCGCGTGTGTCATCCCAACCGTAGCAATGGCTGCTCAGCAGGCGATGATCTGAAAAAAGTCTCTGCAAGCAGTACATATGATG	1399
Epi-d1-repeatB	1300	TACTAGCTGTGGCCGCGTGTGTCATCCCAACCGTAGCAATGGCTGCTCAGCAGGCGATGATCTGAAAAAAGTCTCTGCAAGCAGTACATATGATG	1399
Nipponbare-repeatC	1300	TACTAGCTGTGGCCGCGTGTGTCATCCCAACCGTAGCAATGGCTGCTCAGCAGGCGATGATCTGAAAAAAGTCTCTGCAAGCAGTACATATGATG	1399
Epi-d1-repeatC	1300	TACTAGCTGTGGCCGCGTGTGTCATCCCAACCGTAGCAATGGCTGCTCAGCAGGCGATGATCTGAAAAAAGTCTCTGCAAGCAGTACATATGATG	1399

Fig. S2. Comparison of upstream repeat sequences. Comparison of repeat A, B, C between Nipponbare and *Epi-d1*.

Nipponbare-repeatA	1386	ACAGTTGTACACACCCCTCCCCCTTATCATCCCTTAAAGGAGTAAGGAGTAATGACAGTCGATATGTGTGGTGGATAAAAATTTAGAAGAGAACGTTT	1485
Epi-d1-repeatA	1387	ACAGTTGTACACACCCCTCCCCCTTATCATCCCTTAAAGGAGTAAGGAGTAATGACAGTCGATATGTGTGGTGGATAAAAATTTAGAAGAGAACGTTT	1486
Nipponbare-repeatB	1400	ACAGTTGTACACACCCCTCCCCCTTATCATCCCTTAAAGGAGTAAGGAGTAATGACAGTCGATATGTGTGGTGGATAAAAATTTAGAAGAGAACGTTT	1499
Epi-d1-repeatB	1400	ACAGTTGTACACACCCCTCCCCCTTATCATCCCTTAAAGGAGTAAGGAGTAATGACAGTCGATATGTGTGGTGGATAAAAATTTAGAAGAGAACGTTT	1499
Nipponbare-repeatC	1400	ACAGTTGTACACACCCCTCCCCCTTATCATCCCTTAAAGGAGTAAGGAGTAATGACAGTCGATATGTGTGGTGGATAAAAATTTAGAAGAGAACGTTT	1499
Epi-d1-repeatC	1400	ACAGTTGTACACACCCCTCCCCCTTATCATCCCTTAAAGGAGTAAGGAGTAATGACAGTCGATATGTGTGGTGGATAAAAATTTAGAAGAGAACGTTT	1499
Nipponbare-repeatA	1486	TTGAATAGAAATTTGAACTTACTCGAATATCGTCTTTTGTGTATTCCTTTTGTATGCTTCACTGACTATCTCTGTGAAATGGCAGCTAGTATATT	1585
Epi-d1-repeatA	1487	TTGAATAGAAATTTGAACTTACTCGAATATCGTCTTTTGTGTATTCCTTTTGTATGCTTCACTGACTATCTCTGTGAAATGGCAGCTAGTATATT	1586
Nipponbare-repeatB	1500	TTGAATAGAAATTTGAACTTACTCGAATATCGTCTTTTGTGTATTCCTTTTGTATGCTTCACTGACTATCTCTGTGAAATGGCAGCTAGTATATT	1599
Epi-d1-repeatB	1500	TTGAATAGAAATTTGAACTTACTCGAATATCGTCTTTTGTGTATTCCTTTTGTATGCTTCACTGACTATCTCTGTGAAATGGCAGCTAGTATATT	1599
Nipponbare-repeatC	1500	TTGAATAGAAATTTGAACTTACTCGAATATCGTCTTTTGTGTATTCCTTTTGTATGCTTCACTGACTATCTCTGTGAAATGGCAGCTAGTATATT	1599
Epi-d1-repeatC	1500	TTGAATAGAAATTTGAACTTACTCGAATATCGTCTTTTGTGTATTCCTTTTGTATGCTTCACTGACTATCTCTGTGAAATGGCAGCTAGTATATT	1599
Nipponbare-repeatA	1586	BAAGGTTGAAGCTTTTGTGGGTATCCAGCAAGTATTTCAATGGCTTGTACAGTTTGGAGGTACCTTGGCCCCAACTTGGGAAAAAACCCTCAGCTGTT	1685
Epi-d1-repeatA	1587	BAAGGTTGAAGCTTTTGTGGGTATCCAGCAAGTATTTCAATGGCTTGTACAGTTTGGAGGTACCTTGGCCCCAACTTGGGAAAAAACCCTCAGCTGTT	1686
Nipponbare-repeatB	1600	BAAGGTTGAAGCTTTTGTGGGTATCCAGCAAGTATTTCAATGGCTTGTACAGTTTGGAGGTACCTTGGCCCCAACTTGGGAAAAAACCCTCAGCTGTT	1699
Epi-d1-repeatB	1600	BAAGGTTGAAGCTTTTGTGGGTATCCAGCAAGTATTTCAATGGCTTGTACAGTTTGGAGGTACCTTGGCCCCAACTTGGGAAAAAACCCTCAGCTGTT	1699
Nipponbare-repeatC	1600	BAAGGTTGAAGCTTTTGTGGGTATCCAGCAAGTATTTCAATGGCTTGTACAGTTTGGAGGTACCTTGGCCCCAACTTGGGAAAAAACCCTCAGCTGTT	1699
Epi-d1-repeatC	1600	BAAGGTTGAAGCTTTTGTGGGTATCCAGCAAGTATTTCAATGGCTTGTACAGTTTGGAGGTACCTTGGCCCCAACTTGGGAAAAAACCCTCAGCTGTT	1699
Nipponbare-repeatA	1686	BCCAGGTCACTGCACCTTACAGAGTATTTATGCTGTATCCAGGATTTCTGCTGTGCAAAAATGGGTATGTGAAATGTGTTCTGATCACTGAGATGTACT	1785
Epi-d1-repeatA	1687	BCCAGGTCACTGCACCTTACAGAGTATTTATGCTGTATCCAGGATTTCTGCTGTGCAAAAATGGGTATGTGAAATGTGTTCTGATCACTGAGATGTACT	1786
Nipponbare-repeatB	1700	BCCAGGTCACTGCACCTTACAGAGTATTTATGCTGTATCCAGGATTTCTGCTGTGCAAAAATGGGTATGTGAAATGTGTTCTGATCACTGAGATGTACT	1799
Epi-d1-repeatB	1700	BCCAGGTCACTGCACCTTACAGAGTATTTATGCTGTATCCAGGATTTCTGCTGTGCAAAAATGGGTATGTGAAATGTGTTCTGATCACTGAGATGTACT	1799
Nipponbare-repeatC	1700	BCCAGGTCACTGCACCTTACAGAGTATTTATGCTGTATCCAGGATTTCTGCTGTGCAAAAATGGGTATGTGAAATGTGTTCTGATCACTGAGATGTACT	1799
Epi-d1-repeatC	1700	BCCAGGTCACTGCACCTTACAGAGTATTTATGCTGTATCCAGGATTTCTGCTGTGCAAAAATGGGTATGTGAAATGTGTTCTGATCACTGAGATGTACT	1799
Nipponbare-repeatA	1786	AGGAATCTAAAAATAAGGACACATTTGATATTTAAAAAAGCAAGATTTCTGAGTAAATCGAAGATGATATATCTCTTTTTGTGCAATGTGGAGGAGG	1885
Epi-d1-repeatA	1787	AGGAATCTAAAAATAAGGACACATTTGATATTTAAAAAAGCAAGATTTCTGAGTAAATCGAAGATGATATATCTCTTTTTGTGCAATGTGGAGGAGG	1886
Nipponbare-repeatB	1800	AGGAATCTAAAAATAAGGACACATTTGATATTTAAAAAAGCAAGATTTCTGAGTAAATCGAAGATGATATATCTCTTTTTGTGCAATGTGGAGGAGG	1899
Epi-d1-repeatB	1800	AGGAATCTAAAAATAAGGACACATTTGATATTTAAAAAAGCAAGATTTCTGAGTAAATCGAAGATGATATATCTCTTTTTGTGCAATGTGGAGGAGG	1899
Nipponbare-repeatC	1800	AGGAATCTAAAAATAAGGACACATTTGATATTTAAAAAAGCAAGATTTCTGAGTAAATCGAAGATGATATATCTCTTTTTGTGCAATGTGGAGGAGG	1899
Epi-d1-repeatC	1800	AGGAATCTAAAAATAAGGACACATTTGATATTTAAAAAAGCAAGATTTCTGAGTAAATCGAAGATGATATATCTCTTTTTGTGCAATGTGGAGGAGG	1899
Nipponbare-repeatA	1886	CTTAAACACCTTGTATCACTACTGTAGTTTACAAATCAGGACATCTTCTCGACTATTTAAACATGCACCATCACCGAGATTTCCGCATCGAAGGAGTT	1985
Epi-d1-repeatA	1887	CTTAAACACCTTGTATCACTACTGTAGTTTACAAATCAGGACATCTTCTCGACTATTTAAACATGCACCATCACCGAGATTTCCGCATCGAAGGAGTT	1986
Nipponbare-repeatB	1900	CTTAAACACCTTGTATCACTACTGTAGTTTACAAATCAGGACATCTTCTCGACTATTTAAACATGCACCATCACCGAGATTTCCGCATCGAAGGAGTT	1999
Epi-d1-repeatB	1900	CTTAAACACCTTGTATCACTACTGTAGTTTACAAATCAGGACATCTTCTCGACTATTTAAACATGCACCATCACCGAGATTTCCGCATCGAAGGAGTT	1999
Nipponbare-repeatC	1900	CTTAAACACCTTGTATCACTACTGTAGTTTACAAATCAGGACATCTTCTCGACTATTTAAACATGCACCATCACCGAGATTTCCGCATCGAAGGAGTT	1999
Epi-d1-repeatC	1900	CTTAAACACCTTGTATCACTACTGTAGTTTACAAATCAGGACATCTTCTCGACTATTTAAACATGCACCATCACCGAGATTTCCGCATCGAAGGAGTT	1999
Nipponbare-repeatA	1986	CAAGGTTCAATGTCCAGCTGATGCTGTAGGTTACTTCATTTGCTTTTTCTCTTTGCTGTGATATTAGAAAATCAAGTTTCTGCAATGGATTGATAT	2085
Epi-d1-repeatA	1987	CAAGGTTCAATGTCCAGCTGATGCTGTAGGTTACTTCATTTGCTTTTTCTCTTTGCTGTGATATTAGAAAATCAAGTTTCTGCAATGGATTGATAT	2086
Nipponbare-repeatB	2000	CAAGGTTCAATGTCCAGCTGATGCTGTAGGTTACTTCATTTGCTTTTTCTCTTTGCTGTGATATTAGAAAATCAAGTTTCTGCAATGGATTGATAT	2099
Epi-d1-repeatB	2000	CAAGGTTCAATGTCCAGCTGATGCTGTAGGTTACTTCATTTGCTTTTTCTCTTTGCTGTGATATTAGAAAATCAAGTTTCTGCAATGGATTGATAT	2099
Nipponbare-repeatC	2000	CAAGGTTCAATGTCCAGCTGATGCTGTAGGTTACTTCATTTGCTTTTTCTCTTTGCTGTGATATTAGAAAATCAAGTTTCTGCAATGGATTGATAT	2099
Epi-d1-repeatC	2000	CAAGGTTCAATGTCCAGCTGATGCTGTAGGTTACTTCATTTGCTTTTTCTCTTTGCTGTGATATTAGAAAATCAAGTTTCTGCAATGGATTGATAT	2099
Nipponbare-repeatA	2086	TTTAATTTACAGGATTTCTATTCCACACTTGTGTTTTCAAGAAATGCTAGTAAATCGAAAATCAAGAGTGGTGGTGGTTTTATTTGTCACTTTAGGG	2185
Epi-d1-repeatA	2087	TTTAATTTACAGGATTTCTATTCCACACTTGTGTTTTCAAGAAATGCTAGTAAATCGAAAATCAAGAGTGGTGGTGGTTTTATTTGTCACTTTAGGG	2186
Nipponbare-repeatB	2100	TTTAATTTACAGGATTTCTATTCCACACTTGTGTTTTCAAGAAATGCTAGTAAATCGAAAATCAAGAGTGGTGGTGGTTTTATTTGTCACTTTAGGG	2199
Epi-d1-repeatB	2100	TTTAATTTACAGGATTTCTATTCCACACTTGTGTTTTCAAGAAATGCTAGTAAATCGAAAATCAAGAGTGGTGGTGGTTTTATTTGTCACTTTAGGG	2199
Nipponbare-repeatC	2100	TTTAATTTACAGGATTTCTATTCCACACTTGTGTTTTCAAGAAATGCTAGTAAATCGAAAATCAAGAGTGGTGGTGGTTTTATTTGTCACTTTAGGG	2199
Epi-d1-repeatC	2100	TTTAATTTACAGGATTTCTATTCCACACTTGTGTTTTCAAGAAATGCTAGTAAATCGAAAATCAAGAGTGGTGGTGGTTTTATTTGTCACTTTAGGG	2199
Nipponbare-repeatA	2186	CATGCAATGATTTGGTCTCCGTAACAATCGTAGGAGTATTTCCACAGCTTTGCTTCTTCTAGTTTGGAGCTGGTGTAGGTTTGTAGGTAACCTATAATT	2285
Epi-d1-repeatA	2187	CATGCAATGATTTGGTCTCCGTAACAATCGTAGGAGTATTTCCACAGCTTTGCTTCTTCTAGTTTGGAGCTGGTGTAGGTTTGTAGGTAACCTATAATT	2286
Nipponbare-repeatB	2200	CATGCAATGATTTGGTCTCCGTAACAATCGTAGGAGTATTTCCACAGCTTTGCTTCTTCTAGTTTGGAGCTGGTGTAGGTTTGTAGGTAACCTATAATT	2299
Epi-d1-repeatB	2200	CATGCAATGATTTGGTCTCCGTAACAATCGTAGGAGTATTTCCACAGCTTTGCTTCTTCTAGTTTGGAGCTGGTGTAGGTTTGTAGGTAACCTATAATT	2299
Nipponbare-repeatC	2200	CATGCAATGATTTGGTCTCCGTAACAATCGTAGGAGTATTTCCACAGCTTTGCTTCTTCTAGTTTGGAGCTGGTGTAGGTTTGTAGGTAACCTATAATT	2299
Epi-d1-repeatC	2200	CATGCAATGATTTGGTCTCCGTAACAATCGTAGGAGTATTTCCACAGCTTTGCTTCTTCTAGTTTGGAGCTGGTGTAGGTTTGTAGGTAACCTATAATT	2299
Nipponbare-repeatA	2286	TACCAAAACAAACAGAGCTGCTTTTATGCTGTGCTATTTAGTCTGATAGTACTAGTTTAAATCATACTGTTTCACTGTGAAACAAAATATATGTACACAGAA	2385
Epi-d1-repeatA	2287	TACCAAAACAAACAGAGCTGCTTTTATGCTGTGCTATTTAGTCTGATAGTACTAGTTTAAATCATACTGTTTCACTGTGAAACAAAATATATGTACACAGAA	2386
Nipponbare-repeatB	2300	TACCAAAACAAACAGAGCTGCTTTTATGCTGTGCTATTTAGTCTGATAGTACTAGTTTAAATCATACTGTTTCACTGTGAAACAAAATATATGTACACAGAA	2399
Epi-d1-repeatB	2300	TACCAAAACAAACAGAGCTGCTTTTATGCTGTGCTATTTAGTCTGATAGTACTAGTTTAAATCATACTGTTTCACTGTGAAACAAAATATATGTACACAGAA	2399
Nipponbare-repeatC	2300	TACCAAAACAAACAGAGCTGCTTTTATGCTGTGCTATTTAGTCTGATAGTACTAGTTTAAATCATACTGTTTCACTGTGAAACAAAATATATGTACACAGAA	2399
Epi-d1-repeatC	2300	TACCAAAACAAACAGAGCTGCTTTTATGCTGTGCTATTTAGTCTGATAGTACTAGTTTAAATCATACTGTTTCACTGTGAAACAAAATATATGTACACAGAA	2399
Nipponbare-repeatA	2386	ACTGTTAAGCTTCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAAGCTTTATG6CCACTGTTTGTCTCGAAAAGCTT	2485
Epi-d1-repeatA	2387	ACTGTTAAGCTTCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAAGCTTTATG6CCACTGTTTGTCTCGAAAAGCTT	2486
Nipponbare-repeatB	2400	ACTGTTAAGCTTCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAAGCTTTATG6CCACTGTTTGTCTCGAAAAGCTT	2499
Epi-d1-repeatB	2400	ACTGTTAAGCTTCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAAGCTTTATG6CCACTGTTTGTCTCGAAAAGCTT	2499
Nipponbare-repeatC	2400	ACTGTTAAGCTTCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAAGCTTTATG6CCACTGTTTGTCTCGAAAAGCTT	2499
Epi-d1-repeatC	2400	ACTGTTAAGCTTCCAGGGAAGATATGAAATATATAACTAGTCTTTTTCAAACTTGGCCATAGTGAAGCTTTATG6CCACTGTTTGTCTCGAAAAGCTT	2499
Nipponbare-repeatA	2486	TACTATTCTACTAGTAACCTAAATATTTGCTATTTCACTAATTTGAAGGCTATCTCAGCAAAAACCCCTTGAATATTCTAAGCAAGCCTATGCTGTCT	2585
Epi-d1-repeatA	2487	TACTATTCTACTAGTAACCTAAATATTTGCTATTTCACTAATTTGAAGGCTATCTCAGCAAAAACCCCTTGAATATTCTAAGCAAGCCTATGCTGTCT	2586
Nipponbare-repeatB	2500	TACTATTCTACTAGTAACCTAAATATTTGCTATTTCACTAATTTGAAGGCTATCTCAGCAAAAACCCCTTGAATATTCTAAGCAAGCCTATGCTGTCT	2599
Epi-d1-repeatB	2500	TACTATTCTACTAGTAACCTAAATATTTGCTATTTCACTAATTTGAAGGCTATCTCAGCAAAAACCCCTTGAATATTCTAAGCAAGCCTATGCTGTCT	2599
Nipponbare-repeatC	2500	TACTATTCTACTAGTAACCTAAATATTTGCTATTTCACTAATTTGAAGGCTATCTCAGCAAAAACCCCTTGAATATTCTAAGCAAGCCTATGCTGTCT	2599
Epi-d1-repeatC	2500	TACTATTCTACTAGTAACCTAAATATTTGCTATTTCACTAATTTGAAGGCTATCTCAGCAAAAACCCCTTGAATATTCTAAGCAAGCCTATGCTGTCT	2599
Nipponbare-repeatA	2586	TTCAATATCATTTTCTGCAACTGATCATCTTGGCTTTAGACTCGATAGTGTATATTTCTGAAAATCTATTGTGGCAACTTCTCAITGATGCAITGT	2685
Epi-d1-repeatA	2587	TTCAATATCATTTTCTGCAACTGATCATCTTGGCTTTAGACTCGATAGTGTATATTTCTGAAAATCTATTGTGGCAACTTCTCAITGATGCAITGT	2686
Nipponbare-repeatB	2600	TTCAATATCATTTTCTGCAACTGATCATCTTGGCTTTAGACTCGATAGTGTATATTTCTGAAAATCTATTGTGGCAACTTCTCAITGATGCAITGT	2699
Epi-d1-repeatB	2600	TTCAATATCATTTTCTGCAACTGATCATCTTGGCTTTAGACTCGATAGTGTATATTTCTGAAAATCTATTGTGGCAACTTCTCAITGATGCAITGT	2699
Nipponbare-repeatC	2600	TTCAATATCATTTTCTGCAACTGATCATCTTGGCTTTAGACTCGATAGTGTATATTTCTGAAAATCTATTGTGGCAACTTCTCAITGATGCAITGT	2699
Epi-d1-repeatC	2600	TTCAATATCATTTTCTGCAACTGATCATCTTGGCTTTAGACTCGATAGTGTATATTTCTGAAAATCTATTGTGGCAACTTCTCAITGATGCAITGT	2699
Nipponbare-repeatA	2686	TTTATG6CCCTCAATCCCTG6CCCTCCAGCTGTGTTG6G6CAGAAATTTTGAACAAAATCCCAACCCACCCGCTAGATATCTAGGATTTGTCTTATCCA	2785
Epi-d1-repeatA	2687	TTTATG6CCCTCAATCCCTG6CCCTCCAGCTGTGTTG6G6CAGAAATTTTGAACAAAATCCCAACCCACCCGCTAGATATCTAGGATTTGTCTTATCCA	2786
Nipponbare-repeatB	2700	TTTATG6CCCTCAATCCCTG6CCCTCCAGCTGTGTTG6G6CAGAAATTTTGAACAAAATCCCAACCCACCCGCTAGATATCTAGGATTTGTCTTATCCA	2799
Epi-d1-repeatB	2700	TTTATG6CCCTCAATCCCTG6CCCTCCAGCTGTGTTG6G6CAGAAATTTTGAACAAAATCCCAACCCACCCGCTAGATATCTAGGATTTGTCTTATCCA	2799
Nipponbare-repeatC	2700	TTTATG6CCCTCAATCCCTG6CCCTCCAGCTGTGTTG6G6CAGAAATTTTGAACAAAATCCCAACCCACCCGCTAGATATCTAGGATTTGTCTTATCCA	2799
Epi-d1-repeatC	2700	TTTATG6CCCTCAATCCCTG6CCCTCCAGCTGTGTTG6G6CAGAAATTTTGAACAAAATCCCAACCCACCCGCTAGATATCTAGGATTTGTCTTATCCA	2799

Fig. S2 continued.

Mipponbare-repeatA	2786	AATAATGCTTAAGGGGATATTATGTAGAAATCCTCAGAGTCAATTTTGGATCAAAATATGTGTAGTAAATGTCCTTTCTATTGTAGTCTCAAAA	2885
Epi-d1-repeatA	2787	AATAATGCTTAAGGGGATATTATGTAGAAATCCTCAGAGTCAATTTTGGATCAAAATATGTGTAGTAAATGTCCTTTCTATTGTAGTCTCAAAA	2886
Mipponbare-repeatB	2800	AATAATGCTTAAGGGGATATTATGTAGAAATCCTCAGAGTCAATTTTGGATCAAAATATGTGTAGTAAATGTCCTTTCTATTGTAGTCTCAAAA	2899
Epi-d1-repeatB	2800	AATAATGCTTAAGGGGATATTATGTAGAAATCCTCAGAGTCAATTTTGGATCAAAATATGTGTAGTAAATGTCCTTTCTATTGTAGTCTCAAAA	2899
Mipponbare-repeatC	2800	AATAATGCTTAAGGGGATATTATGTAGAAATCCTCAGAGTCAATTTTGGATCAAAATATGTGTAGTAAATGTCCTTTCTATTGTAGTCTCAAAA	2899
Epi-d1-repeatC	2800	AATAATGCTTAAGGGGATATTATGTAGAAATCCTCAGAGTCAATTTTGGATCAAAATATGTGTAGTAAATGTCCTTTCTATTGTAGTCTCAAAA	2899
Mipponbare-repeatA	2886	TGGTCTCTTTTCCAGCCTATAGGAAGCTTGTAGGAGCTACACCTCGATGTGAACAAGTAAGTACTAACCATATATAGGGAATTTGTTTCAGCTAC	2985
Epi-d1-repeatA	2887	TGGTCTCTTTTCCAGCCTATAGGAAGCTTGTAGGAGCTACACCTCGATGTGAACAAGTAAGTACTAACCATATATAGGGAATTTGTTTCAGCTAC	2986
Mipponbare-repeatB	2900	TGGTCTCTTTTCCAGCCTATAGGAAGCTTGTAGGAGCTACACCTCGATGTGAACAAGTAAGTACTAACCATATATAGGGAATTTGTTTCAGCTAC	2999
Epi-d1-repeatB	2900	TGGTCTCTTTTCCAGCCTATAGGAAGCTTGTAGGAGCTACACCTCGATGTGAACAAGTAAGTACTAACCATATATAGGGAATTTGTTTCAGCTAC	2999
Mipponbare-repeatC	2900	TGGTCTCTTTTCCAGCCTATAGGAAGCTTGTAGGAGCTACACCTCGATGTGAACAAGTAAGTACTAACCATATATAGGGAATTTGTTTCAGCTAC	2999
Epi-d1-repeatC	2900	TGGTCTCTTTTCCAGCCTATAGGAAGCTTGTAGGAGCTACACCTCGATGTGAACAAGTAAGTACTAACCATATATAGGGAATTTGTTTCAGCTAC	2999
Mipponbare-repeatA	2986	ACTCGATATATTTGCTCTTTTCTCCTTTGATGCCATTATAAACCTGAGTACTAGTGTGTCATTACCTTTTTCATAACACATAAACAATTAAGCAATT	3085
Epi-d1-repeatA	2987	ACTCGATATATTTGCTCTTTTCTCCTTTGATGCCATTATAAACCTGAGTACTAGTGTGTCATTACCTTTTTCATAACACATAAACAATTAAGCAATT	3086
Mipponbare-repeatB	3000	ACTCGATATATTTGCTCTTTTCTCCTTTGATGCCATTATAAACCTGAGTACTAGTGTGTCATTACCTTTTTCATAACACATAAACAATTAAGCAATT	3099
Epi-d1-repeatB	3000	ACTCGATATATTTGCTCTTTTCTCCTTTGATGCCATTATAAACCTGAGTACTAGTGTGTCATTACCTTTTTCATAACACATAAACAATTAAGCAATT	3099
Mipponbare-repeatC	3000	ACTCGATATATTTGCTCTTTTCTCCTTTGATGCCATTATAAACCTGAGTACTAGTGTGTCATTACCTTTTTCATAACACATAAACAATTAAGCAATT	3099
Epi-d1-repeatC	3000	ACTCGATATATTTGCTCTTTTCTCCTTTGATGCCATTATAAACCTGAGTACTAGTGTGTCATTACCTTTTTCATAACACATAAACAATTAAGCAATT	3099
Mipponbare-repeatA	3086	PTTATGCTTGTGTATTTTCTTTAGAGATCCTGTTGTGAACAAAAGPTCAAGGATATTAGCAATGCTTTATGAGGTTAGTCCAGCTAACCTAACCAAAAT	3185
Epi-d1-repeatA	3087	PTTATGCTTGTGTATTTTCTTTAGAGATCCTGTTGTGAACAAAAGPTCAAGGATATTAGCAATGCTTTATGAGGTTAGTCCAGCTAACCTAACCAAAAT	3186
Mipponbare-repeatB	3100	PTTATGCTTGTGTATTTTCTTTAGAGATCCTGTTGTGAACAAAAGPTCAAGGATATTAGCAATGCTTTATGAGGTTAGTCCAGCTAACCTAACCAAAAT	3199
Epi-d1-repeatB	3100	PTTATGCTTGTGTATTTTCTTTAGAGATCCTGTTGTGAACAAAAGPTCAAGGATATTAGCAATGCTTTATGAGGTTAGTCCAGCTAACCTAACCAAAAT	3199
Mipponbare-repeatC	3100	PTTATGCTTGTGTATTTTCTTTAGAGATCCTGTTGTGAACAAAAGPTCAAGGATATTAGCAATGCTTTATGAGGTTAGTCCAGCTAACCTAACCAAAAT	3199
Epi-d1-repeatC	3100	PTTATGCTTGTGTATTTTCTTTAGAGATCCTGTTGTGAACAAAAGPTCAAGGATATTAGCAATGCTTTATGAGGTTAGTCCAGCTAACCTAACCAAAAT	3199
Mipponbare-repeatA	3186	CCCATTTGTTCTTTATGACTATGTTGTTTGAAGGTTACAGGTGCTTGCAGCTAACATAAATAGGATTCAGGTTTGTCTGATGATGAGAAGCGATCAAT	3285
Epi-d1-repeatA	3187	CCCATTTGTTCTTTATGACTATGTTGTTTGAAGGTTACAGGTGCTTGCAGCTAACATAAATAGGATTCAGGTTTGTCTGATGATGAGAAGCGATCAAT	3286
Mipponbare-repeatB	3200	CCCATTTGTTCTTTATGACTATGTTGTTTGAAGGTTACAGGTGCTTGCAGCTAACATAAATAGGATTCAGGTTTGTCTGATGATGAGAAGCGATCAAT	3299
Epi-d1-repeatB	3200	CCCATTTGTTCTTTATGACTATGTTGTTTGAAGGTTACAGGTGCTTGCAGCTAACATAAATAGGATTCAGGTTTGTCTGATGATGAGAAGCGATCAAT	3299
Mipponbare-repeatC	3200	CCCATTTGTTCTTTATGACTATGTTGTTTGAAGGTTACAGGTGCTTGCAGCTAACATAAATAGGATTCAGGTTTGTCTGATGATGAGAAGCGATCAAT	3299
Epi-d1-repeatC	3200	CCCATTTGTTCTTTATGACTATGTTGTTTGAAGGTTACAGGTGCTTGCAGCTAACATAAATAGGATTCAGGTTTGTCTGATGATGAGAAGCGATCAAT	3299
Mipponbare-repeatA	3286	CTATGATAAATATGGAGAAGCTGTTTGAAGGTTGCTGGAATGGGAACAGGATGAGTGTCTAGAAATGTTGCCAATTCTGAAGTATGATCAGCATGA	3385
Epi-d1-repeatA	3287	CTATGATAAATATGGAGAAGCTGTTTGAAGGTTGCTGGAATGGGAACAGGATGAGTGTCTAGAAATGTTGCCAATTCTGAAGTATGATCAGCATGA	3386
Mipponbare-repeatB	3300	CTATGATAAATATGGAGAAGCTGTTTGAAGGTTGCTGGAATGGGAACAGGATGAGTGTCTAGAAATGTTGCCAATTCTGAAGTATGATCAGCATGA	3399
Epi-d1-repeatB	3300	CTATGATAAATATGGAGAAGCTGTTTGAAGGTTGCTGGAATGGGAACAGGATGAGTGTCTAGAAATGTTGCCAATTCTGAAGTATGATCAGCATGA	3399
Mipponbare-repeatC	3300	CTATGATAAATATGGAGAAGCTGTTTGAAGGTTGCTGGAATGGGAACAGGATGAGTGTCTAGAAATGTTGCCAATTCTGAAGTATGATCAGCATGA	3399
Epi-d1-repeatC	3300	CTATGATAAATATGGAGAAGCTGTTTGAAGGTTGCTGGAATGGGAACAGGATGAGTGTCTAGAAATGTTGCCAATTCTGAAGTATGATCAGCATGA	3399
Mipponbare-repeatA	3386	CTTTATATGATATTGATTGTATGAAATTTGGAATCTCAGAGTACTCAAAACCCATTGATCTTTGAAATCAATTTGAAAGCTTTGGTGGAAATG	3485
Epi-d1-repeatA	3387	CTTTATATGATATTGATTGTATGAAATTTGGAATCTCAGAGTACTCAAAACCCATTGATCTTTGAAATCAATTTGAAAGCTTTGGTGGAAATG	3486
Mipponbare-repeatB	3400	CTTTATATGATATTGATTGTATGAAATTTGGAATCTCAGAGTACTCAAAACCCATTGATCTTTGAAATCAATTTGAAAGCTTTGGTGGAAATG	3499
Epi-d1-repeatB	3400	CTTTATATGATATTGATTGTATGAAATTTGGAATCTCAGAGTACTCAAAACCCATTGATCTTTGAAATCAATTTGAAAGCTTTGGTGGAAATG	3499
Mipponbare-repeatC	3400	CTTTATATGATATTGATTGTATGAAATTTGGAATCTCAGAGTACTCAAAACCCATTGATCTTTGAAATCAATTTGAAAGCTTTGGTGGAAATG	3499
Epi-d1-repeatC	3400	CTTTATATGATATTGATTGTATGAAATTTGGAATCTCAGAGTACTCAAAACCCATTGATCTTTGAAATCAATTTGAAAGCTTTGGTGGAAATG	3499
Mipponbare-repeatA	3486	GGGGAATGGGAGGCGCTGCTCGGAACAGACCAATGCAAGGATGATGATGAGGCTACAATCTGGTACTCAATTTCAAGGAAGCGTGTGGTGGTGA	3585
Epi-d1-repeatA	3487	GGGGAATGGGAGGCGCTGCTCGGAACAGACCAATGCAAGGATGATGATGAGGCTACAATCTGGTACTCAATTTCAAGGAAGCGTGTGGTGGTGA	3586
Mipponbare-repeatB	3500	GGGGAATGGGAGGCGCTGCTCGGAACAGACCAATGCAAGGATGATGATGAGGCTACAATCTGGTACTCAATTTCAAGGAAGCGTGTGGTGGTGA	3599
Epi-d1-repeatB	3500	GGGGAATGGGAGGCGCTGCTCGGAACAGACCAATGCAAGGATGATGATGAGGCTACAATCTGGTACTCAATTTCAAGGAAGCGTGTGGTGGTGA	3599
Mipponbare-repeatC	3500	GGGGAATGGGAGGCGCTGCTCGGAACAGACCAATGCAAGGATGATGATGAGGCTACAATCTGGTACTCAATTTCAAGGAAGCGTGTGGTGGTGA	3599
Epi-d1-repeatC	3500	GGGGAATGGGAGGCGCTGCTCGGAACAGACCAATGCAAGGATGATGATGAGGCTACAATCTGGTACTCAATTTCAAGGAAGCGTGTGGTGGTGA	3599
Mipponbare-repeatA	3586	GAAGAATAATGAGATCACCAGACTGGAAGCTGTAATAATGATGATGGAATCTGTCGAAGCTGTCGAAGCTGGAAGCTGGAAGCTGGAAGCTGGAAG	3685
Epi-d1-repeatA	3587	GAAGAATAATGAGATCACCAGACTGGAAGCTGTAATAATGATGATGGAATCTGTCGAAGCTGTCGAAGCTGGAAGCTGGAAGCTGGAAG	3686
Mipponbare-repeatB	3600	GAAGAATAATGAGATCACCAGACTGGAAGCTGTAATAATGATGATGGAATCTGTCGAAGCTGTCGAAGCTGGAAGCTGGAAGCTGGAAG	3699
Epi-d1-repeatB	3600	GAAGAATAATGAGATCACCAGACTGGAAGCTGTAATAATGATGATGGAATCTGTCGAAGCTGTCGAAGCTGGAAGCTGGAAGCTGGAAG	3699
Mipponbare-repeatC	3600	GAAGAATAATGAGATCACCAGACTGGAAGCTGTAATAATGATGATGGAATCTGTCGAAGCTGTCGAAGCTGGAAGCTGGAAGCTGGAAG	3699
Epi-d1-repeatC	3600	GAAGAATAATGAGATCACCAGACTGGAAGCTGTAATAATGATGATGGAATCTGTCGAAGCTGTCGAAGCTGGAAGCTGGAAGCTGGAAG	3699
Mipponbare-repeatA	3686	CAGGACCAAGTGTCTCTCAACAAGAACCGCACTTGGAAATTTCCAGAGCTCTCAACTGCAATCTTGCAGGACACTGTTGAAATCTCTACCCCGT	3785
Epi-d1-repeatA	3687	CAGGACCAAGTGTCTCTCAACAAGAACCGCACTTGGAAATTTCCAGAGCTCTCAACTGCAATCTTGCAGGACACTGTTGAAATCTCTACCCCGT	3786
Mipponbare-repeatB	3700	CAGGACCAAGTGTCTCTCAACAAGAACCGCACTTGGAAATTTCCAGAGCTCTCAACTGCAATCTTGCAGGACACTGTTGAAATCTCTACCCCGT	3799
Epi-d1-repeatB	3700	CAGGACCAAGTGTCTCTCAACAAGAACCGCACTTGGAAATTTCCAGAGCTCTCAACTGCAATCTTGCAGGACACTGTTGAAATCTCTACCCCGT	3799
Mipponbare-repeatC	3700	CAGGACCAAGTGTCTCTCAACAAGAACCGCACTTGGAAATTTCCAGAGCTCTCAACTGCAATCTTGCAGGACACTGTTGAAATCTCTACCCCGT	3799
Epi-d1-repeatC	3700	CAGGACCAAGTGTCTCTCAACAAGAACCGCACTTGGAAATTTCCAGAGCTCTCAACTGCAATCTTGCAGGACACTGTTGAAATCTCTACCCCGT	3799
Mipponbare-repeatA	3786	CAACAACCTGTGGGGGTGATGCGAGTGCAGGAGCAAAAAGGATCACTTAAAGGTTCTGCTGTTGATTTGGAAGCAGATGAGGGTCCGGCT	3885
Epi-d1-repeatA	3787	CAACAACCTGTGGGGGTGATGCGAGTGCAGGAGCAAAAAGGATCACTTAAAGGTTCTGCTGTTGATTTGGAAGCAGATGAGGGTCCGGCT	3886
Mipponbare-repeatB	3800	CAACAACCTGTGGGGGTGATGCGAGTGCAGGAGCAAAAAGGATCACTTAAAGGTTCTGCTGTTGATTTGGAAGCAGATGAGGGTCCGGCT	3899
Epi-d1-repeatB	3800	CAACAACCTGTGGGGGTGATGCGAGTGCAGGAGCAAAAAGGATCACTTAAAGGTTCTGCTGTTGATTTGGAAGCAGATGAGGGTCCGGCT	3899
Mipponbare-repeatC	3800	CAACAACCTGTGGGGGTGATGCGAGTGCAGGAGCAAAAAGGATCACTTAAAGGTTCTGCTGTTGATTTGGAAGCAGATGAGGGTCCGGCT	3899
Epi-d1-repeatC	3800	CAACAACCTGTGGGGGTGATGCGAGTGCAGGAGCAAAAAGGATCACTTAAAGGTTCTGCTGTTGATTTGGAAGCAGATGAGGGTCCGGCT	3899
Mipponbare-repeatA	3886	TGAGGGGAATGCTGGCGGAGAGGAGGCCCTCTGGAGATCTTTATGTTTATGATGTTCTCTGATCTGTTCTTAAGCAGATGGGCAAAACATT	3985
Epi-d1-repeatA	3887	TGAGGGGAATGCTGGCGGAGAGGAGGCCCTCTGGAGATCTTTATGTTTATGATGTTCTCTGATCTGTTCTTAAGCAGATGGGCAAAACATT	3986
Mipponbare-repeatB	3900	TGAGGGGAATGCTGGCGGAGAGGAGGCCCTCTGGAGATCTTTATGTTTATGATGTTCTCTGATCTGTTCTTAAGCAGATGGGCAAAACATT	3999
Epi-d1-repeatB	3900	TGAGGGGAATGCTGGCGGAGAGGAGGCCCTCTGGAGATCTTTATGTTTATGATGTTCTCTGATCTGTTCTTAAGCAGATGGGCAAAACATT	3999
Mipponbare-repeatC	3900	TGAGGGGAATGCTGGCGGAGAGGAGGCCCTCTGGAGATCTTTATGTTTATGATGTTCTCTGATCTGTTCTTAAGCAGATGGGCAAAACATT	3999
Epi-d1-repeatC	3900	TGAGGGGAATGCTGGCGGAGAGGAGGCCCTCTGGAGATCTTTATGTTTATGATGTTCTCTGATCTGTTCTTAAGCAGATGGGCAAAACATT	3999
Mipponbare-repeatA	3986	CTATACACATGCAAAATTTTATATATTTGACGCAATTTTGGGCAACCCCTCAAGGTTCCCACTGTTGATGGATGTTGACCTGAAGATCCCTCCGGTA	4085
Epi-d1-repeatA	3987	CTATACACATGCAAAATTTTATATATTTGACGCAATTTTGGGCAACCCCTCAAGGTTCCCACTGTTGATGGATGTTGACCTGAAGATCCCTCCGGTA	4086
Mipponbare-repeatB	4000	CTATACACATGCAAAATTTTATATATTTGACGCAATTTTGGGCAACCCCTCAAGGTTCCCACTGTTGATGGATGTTGACCTGAAGATCCCTCCGGTA	4099
Epi-d1-repeatB	4000	CTATACACATGCAAAATTTTATATATTTGACGCAATTTTGGGCAACCCCTCAAGGTTCCCACTGTTGATGGATGTTGACCTGAAGATCCCTCCGGTA	4099
Mipponbare-repeatC	4000	CTATACACATGCAAAATTTTATATATTTGACGCAATTTTGGGCAACCCCTCAAGGTTCCCACTGTTGATGGATGTTGACCTGAAGATCCCTCCGGTA	4099
Epi-d1-repeatC	4000	CTATACACATGCAAAATTTTATATATTTGACGCAATTTTGGGCAACCCCTCAAGGTTCCCACTGTTGATGGATGTTGACCTGAAGATCCCTCCGGTA	4099
Mipponbare-repeatA	4086	CCAGCCAGGACCAACCTTATGATGTCCAGAAAGAGTGTCCCACTCTCGGAGAGTCAAAATGCTGTTGGAAGCAGCTAGTGCCTGTGACGTTGAGAT	4185
Epi-d1-repeatA	4087	CCAGCCAGGACCAACCTTATGATGTCCAGAAAGAGTGTCCCACTCTCGGAGAGTCAAAATGCTGTTGGAAGCAGCTAGTGCCTGTGACGTTGAGAT	4186
Mipponbare-repeatB	4100	CCAGCCAGGACCAACCTTATGATGTCCAGAAAGAGTGTCCCACTCTCGGAGAGTCAAAATGCTGTTGGAAGCAGCTAGTGCCTGTGACGTTGAGAT	4199
Epi-d1-repeatB	4100	CCAGCCAGGACCAACCTTATGATGTCCAGAAAGAGTGTCCCACTCTCGGAGAGTCAAAATGCTGTTGGAAGCAGCTAGTGCCTGTGACGTTGAGAT	4199
Mipponbare-repeatC	4100	CCAGCCAGGACCAACCTTATGATGTCCAGAAAGAGTGTCCCACTCTCGGAGAGTCAAAATGCTGTTGGAAGCAGCTAGTGCCTGTGACGTTGAGAT	4199
Epi-d1-repeatC	4100	CCAGCCAGGACCAACCTTATGATGTCCAGAAAGAGTGTCCCACTCTCGGAGAGTCAAAATGCTGTTGGAAGCAGCTAGTGCCTGTGACGTTGAGAT	4199

Fig. S2. Contingency.

Mipponbare-repeatA	6973	5AAAGCAATACTACCTTGGGATAAAAAGTGGACCGTTTTGCAAGATTAGGGGTCAGGGCCGTTTAAAACTCAACGACAGATAAGGGACCTTAGATGAA	7072
Epi-d1-repeatA	6974	5AAAGCAATACTACCTTGGGATAAAAAGTGGACCGTTTTGCAAGATTAGGGGTCAGGGCCGTTTAAAACTCAACGACAGATAAGGGACCTTAGATGAA	7073
Mipponbare-repeatB	6906	5AAAGCAATACTACCTTGGGATAAAAAGTGGACCGTTTTGCAAGATTAGGGGTCAGGGCCGTTTAAAACTCAACGACAGATAAGGGACCTTAGATGAA	7005
Epi-d1-repeatB	6904	5AAAGCAATACTACCTTGGGATAAAAAGTGGACCGTTTTGCAAGATTAGGGGTCAGGGCCGTTTAAAACTCAACGACAGATAAGGGACCTTAGATGAA	7003
Mipponbare-repeatC	6984	5AAAGCAATACTACCTTGGGATAAAAAGTGGACCGTTTTGCAAGATTAGGGGTCAGGGCCGTTTAAAACTCAACGACAGATAAGGGACCTTAGATGAA	7083
Epi-d1-repeatC	6984	5AAAGCAATACTACCTTGGGATAAAAAGTGGACCGTTTTGCAAGATTAGGGGTCAGGGCCGTTTAAAACTCAACGACAGATAAGGGACCTTAGATGAA	7083
Mipponbare-repeatA	7073	CTTTTTGGGAGATGAGGCGCTGTGCATATGACCCATAGCAGCGGACAAACGCGCAGCAGAGCGCTGCACGACTCCGCGCTCCCAATCCGTCCCGTC	7172
Epi-d1-repeatA	7074	CTTTTTGGGAGATGAGGCGCTGTGCATATGACCCATAGCAGCGGACAAACGCGCAGCAGAGCGCTGCACGACTCCGCGCTCCCAATCCGTCCCGTC	7173
Mipponbare-repeatB	7006	CTTTTTGGGAGATGAGGCGCTGTGCATATGACCCATAGCAGCGGACAAACGCGCAGCAGAGCGCTGCACGACTCCGCGCTCCCAATCCGTCCCGTC	7105
Epi-d1-repeatB	7004	CTTTTTGGGAGATGAGGCGCTGTGCATATGACCCATAGCAGCGGACAAACGCGCAGCAGAGCGCTGCACGACTCCGCGCTCCCAATCCGTCCCGTC	7103
Mipponbare-repeatC	7084	CTTTTTGGGAGATGAGGCGCTGTGCATATGACCCATAGCAGCGGACAAACGCGCAGCAGAGCGCTGCACGACTCCGCGCTCCCAATCCGTCCCGTC	7183
Epi-d1-repeatC	7084	CTTTTTGGGAGATGAGGCGCTGTGCATATGACCCATAGCAGCGGACAAACGCGCAGCAGAGCGCTGCACGACTCCGCGCTCCCAATCCGTCCCGTC	7183
Mipponbare-repeatA	7173	RCTGCGCGCGCCCTCGACTCCGCTCTGCTGCGCTGCGCGCGGATCTCCATCTGCTAGCAGAGGTGGCGCGCGCTCTCTGCTCCGCGCG	7272
Epi-d1-repeatA	7174	RCTGCGCGCGCCCTCGACTCCGCTCTGCTGCGCTGCGCGCGGATCTCCATCTGCTAGCAGAGGTGGCGCGCGCTCTCTGCTCCGCGCG	7273
Mipponbare-repeatB	7106	RCTGCGCGCGCCCTCGACTCCGCTCTGCTGCGCTGCGCGCGGATCTCCATCTGCTAGCAGAGGTGGCGCGCGCTCTCTGCTCCGCGCG	7205
Epi-d1-repeatB	7104	RCTGCGCGCGCCCTCGACTCCGCTCTGCTGCGCTGCGCGCGGATCTCCATCTGCTAGCAGAGGTGGCGCGCGCTCTCTGCTCCGCGCG	7203
Mipponbare-repeatC	7184	RCTGCGCGCGCCCTCGACTCCGCTCTGCTGCGCTGCGCGCGGATCTCCATCTGCTAGCAGAGGTGGCGCGCGCTCTCTGCTCCGCGCG	7283
Epi-d1-repeatC	7184	RCTGCGCGCGCCCTCGACTCCGCTCTGCTGCGCTGCGCGCGGATCTCCATCTGCTAGCAGAGGTGGCGCGCGCTCTCTGCTCCGCGCG	7283
Mipponbare-repeatA	7273	CATTGCGATCCTAATCCATCCATCGGCGCTGCGCGCTGCAATTCGCTCTGCGCGCGCGCTGCGCGGATCCCATCTGCGAGCAGAGGTGGCGCGCG	7372
Epi-d1-repeatA	7274	CATTGCGATCCTAATCCATCCATCGGCGCTGCGCGCTGCAATTCGCTCTGCGCGCGCGCTGCGCGGATCCCATCTGCGAGCAGAGGTGGCGCGCG	7373
Mipponbare-repeatB	7206	CATTGCGATCCTAATCCATCCATCGGCGCTGCGCGCTGCAATTCGCTCTGCGCGCGCGCTGCGCGGATCCCATCTGCGAGCAGAGGTGGCGCGCG	7305
Epi-d1-repeatB	7204	CATTGCGATCCTAATCCATCCATCGGCGCTGCGCGCTGCAATTCGCTCTGCGCGCGCGCTGCGCGGATCCCATCTGCGAGCAGAGGTGGCGCGCG	7303
Mipponbare-repeatC	7284	CATTGCGATCCTAATCCATCCATCGGCGCTGCGCGCTGCAATTCGCTCTGCGCGCGCGCTGCGCGGATCCCATCTGCGAGCAGAGGTGGCGCGCG	7383
Epi-d1-repeatC	7284	CATTGCGATCCTAATCCATCCATCGGCGCTGCGCGCTGCAATTCGCTCTGCGCGCGCGCTGCGCGGATCCCATCTGCGAGCAGAGGTGGCGCGCG	7383
Mipponbare-repeatA	7373	GGCGTCCCTCTTCCACCGCATCGTGTGCGCGGTGAGCATCCCTCCCTACCCACACTCATCAGGTATTCGCGTATCCCTCAAAAAGTTGGGG	7472
Epi-d1-repeatA	7374	GGCGTCCCTCTTCCACCGCATCGTGTGCGCGGTGAGCATCCCTCCCTACCCACACTCATCAGGTATTCGCGTATCCCTCAAAAAGTTGGGG	7473
Mipponbare-repeatB	7306	GGCGTCCCTCTTCCACCGCATCGTGTGCGCGGTGAGCATCCCTCCCTACCCACACTCATCAGGTATTCGCGTATCCCTCAAAAAGTTGGGG	7405
Epi-d1-repeatB	7304	GGCGTCCCTCTTCCACCGCATCGTGTGCGCGGTGAGCATCCCTCCCTACCCACACTCATCAGGTATTCGCGTATCCCTCAAAAAGTTGGGG	7403
Mipponbare-repeatC	7384	GGCGTCCCTCTTCCACCGCATCGTGTGCGCGGTGAGCATCCCTCCCTACCCACACTCATCAGGTATTCGCGTATCCCTCAAAAAGTTGGGG	7483
Epi-d1-repeatC	7384	GGCGTCCCTCTTCCACCGCATCGTGTGCGCGGTGAGCATCCCTCCCTACCCACACTCATCAGGTATTCGCGTATCCCTCAAAAAGTTGGGG	7483
Mipponbare-repeatA	7473	PTTCAACGAAACAGGGTTAGATCTGCTCTGCGCCAGCTCCCACTTTTCAAGTTGTAATTTTGATTTCCGTTTTAGCAGATGTAATTTGGTTATG	7572
Epi-d1-repeatA	7474	PTTCAACGAAACAGGGTTAGATCTGCTCTGCGCCAGCTCCCACTTTTCAAGTTGTAATTTTGATTTCCGTTTTAGCAGATGTAATTTGGTTATG	7573
Mipponbare-repeatB	7406	PTTCAACGAAACAGGGTTAGATCTGCTCTGCGCCAGCTCCCACTTTTCAAGTTGTAATTTTGATTTCCGTTTTAGCAGATGTAATTTGGTTATG	7505
Epi-d1-repeatB	7404	PTTCAACGAAACAGGGTTAGATCTGCTCTGCGCCAGCTCCCACTTTTCAAGTTGTAATTTTGATTTCCGTTTTAGCAGATGTAATTTGGTTATG	7503
Mipponbare-repeatC	7484	PTTCAACGAAACAGGGTTAGATCTGCTCTGCGCCAGCTCCCACTTTTCAAGTTGTAATTTTGATTTCCGTTTTAGCAGATGTAATTTGGTTATG	7583
Epi-d1-repeatC	7484	PTTCAACGAAACAGGGTTAGATCTGCTCTGCGCCAGCTCCCACTTTTCAAGTTGTAATTTTGATTTCCGTTTTAGCAGATGTAATTTGGTTATG	7583
Mipponbare-repeatA	7573	AATCTCATCGAAACCCCTTAGAACGAAATAATGAACTCAGATATTTGTAAGTATCTCATCAAACCTCAGATATTTCTTAGAAGATATAGACCCAAAC	7672
Epi-d1-repeatA	7574	AATCTCATCGAAACCCCTTAGAACGAAATAATGAACTCAGATATTTGTAAGTATCTCATCAAACCTCAGATATTTCTTAGAAGATATAGACCCAAAC	7673
Mipponbare-repeatB	7506	AATCTCATCGAAACCCCTTAGAACGAAATAATGAACTCAGATATTTGTAAGTATCTCATCAAACCTCAGATATTTCTTAGAAGATATAGACCCAAAC	7605
Epi-d1-repeatB	7504	AATCTCATCGAAACCCCTTAGAACGAAATAATGAACTCAGATATTTGTAAGTATCTCATCAAACCTCAGATATTTCTTAGAAGATATAGACCCAAAC	7603
Mipponbare-repeatC	7584	AATCTCATCGAAACCCCTTAGAACGAAATAATGAACTCAGATATTTGTAAGTATCTCATCAAACCTCAGATATTTCTTAGAAGATATAGACCCAAAC	7683
Epi-d1-repeatC	7584	AATCTCATCGAAACCCCTTAGAACGAAATAATGAACTCAGATATTTGTAAGTATCTCATCAAACCTCAGATATTTCTTAGAAGATATAGACCCAAAC	7683
Mipponbare-repeatA	7673	TACCATAGTCACACAAAATATCTTTTTCAAGGTATATCTTATAAGTAAATTTTTATCCAAAAATTTCTAAAGGACATACGTGACACTTGGCAT	7772
Epi-d1-repeatA	7674	TACCATAGTCACACAAAATATCTTTTTCAAGGTATATCTTATAAGTAAATTTTTATCCAAAAATTTCTAAAGGACATACGTGACACTTGGCAT	7773
Mipponbare-repeatB	7606	TACCATAGTCACACAAAATATCTTTTTCAAGGTATATCTTATAAGTAAATTTTTATCCAAAAATTTCTAAAGGACATACGTGACACTTGGCAT	7705
Epi-d1-repeatB	7604	TACCATAGTCACACAAAATATCTTTTTCAAGGTATATCTTATAAGTAAATTTTTATCCAAAAATTTCTAAAGGACATACGTGACACTTGGCAT	7703
Mipponbare-repeatC	7684	TACCATAGTCACACAAAATATCTTTTTCAAGGTATATCTTATAAGTAAATTTTTATCCAAAAATTTCTAAAGGACATACGTGACACTTGGCAT	7783
Epi-d1-repeatC	7684	TACCATAGTCACACAAAATATCTTTTTCAAGGTATATCTTATAAGTAAATTTTTATCCAAAAATTTCTAAAGGACATACGTGACACTTGGCAT	7783
Mipponbare-repeatA	7773	GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTTGAAACCATGAAAGTACTTTGCTCTCCCGTCCCTAAAAACATTTGATATATCTGTAATAT	7872
Epi-d1-repeatA	7774	GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTTGAAACCATGAAAGTACTTTGCTCTCCCGTCCCTAAAAACATTTGATATATCTGTAATAT	7873
Mipponbare-repeatB	7706	GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTTGAAACCATGAAAGTACTTTGCTCTCCCGTCCCTAAAAACATTTGATATATCTGTAATAT	7805
Epi-d1-repeatB	7704	GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTTGAAACCATGAAAGTACTTTGCTCTCCCGTCCCTAAAAACATTTGATATATCTGTAATAT	7803
Mipponbare-repeatC	7784	GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTTGAAACCATGAAAGTACTTTGCTCTCCCGTCCCTAAAAACATTTGATATATCTGTAATAT	7883
Epi-d1-repeatC	7784	GAATCTAATTTAACATTCTTTCTTTATCAGGTTATAAATTTGAAACCATGAAAGTACTTTGCTCTCCCGTCCCTAAAAACATTTGATATATCTGTAATAT	7883
Mipponbare-repeatA	7873	TTTATATTTTTAATTTTAAAAATAATTTAGACTAATAATATAGATATTTAAATAGTAAATAGTAAATTTCAATCAACTATAGTTGGAAATAAAAAAA	7972
Epi-d1-repeatA	7874	TTTATATTTTTAATTTTAAAAATAATTTAGACTAATAATATAGATATTTAAATAGTAAATAGTAAATTTCAATCAACTATAGTTGGAAATAAAAAAA	7973
Mipponbare-repeatB	7806	TTTATATTTTTAATTTTAAAAATAATTTAGACTAATAATATAGATATTTAAATAGTAAATAGTAAATTTCAATCAACTATAGTTGGAAATAAAAAAA	7905
Epi-d1-repeatB	7804	TTTATATTTTTAATTTTAAAAATAATTTAGACTAATAATATAGATATTTAAATAGTAAATAGTAAATTTCAATCAACTATAGTTGGAAATAAAAAAA	7903
Mipponbare-repeatC	7884	TTTATATTTTTAATTTTAAAAATAATTTAGACTAATAATATAGATATTTAAATAGTAAATAGTAAATTTCAATCAACTATAGTTGGAAATAAAAAAA	7983
Epi-d1-repeatC	7884	TTTATATTTTTAATTTTAAAAATAATTTAGACTAATAATATAGATATTTAAATAGTAAATAGTAAATTTCAATCAACTATAGTTGGAAATAAAAAAA	7983
Mipponbare-repeatA	7973	CAAAATGATATATGCCAAGTACAATCTAATAACAATAGAAATGCACTTTGGTAAATGTTACTCCTAATTTCTAATTTCTAGTTTGGCTCCCCCGACG	8072
Epi-d1-repeatA	7974	CAAAATGATATATGCCAAGTACAATCTAATAACAATAGAAATGCACTTTGGTAAATGTTACTCCTAATTTCTAATTTCTAGTTTGGCTCCCCCGACG	8073
Mipponbare-repeatB	7906	CAAAATGATATATGCCAAGTACAATCTAATAACAATAGAAATGCACTTTGGTAAATGTTACTCCTAATTTCTAATTTCTAGTTTGGCTCCCCCGACG	8005
Epi-d1-repeatB	7904	CAAAATGATATATGCCAAGTACAATCTAATAACAATAGAAATGCACTTTGGTAAATGTTACTCCTAATTTCTAATTTCTAGTTTGGCTCCCCCGACG	8003
Mipponbare-repeatC	7984	CAAAATGATATATGCCAAGTACAATCTAATAACAATAGAAATGCACTTTGGTAAATGTTACTCCTAATTTCTAATTTCTAGTTTGGCTCCCCCGACG	8083
Epi-d1-repeatC	7984	CAAAATGATATATGCCAAGTACAATCTAATAACAATAGAAATGCACTTTGGTAAATGTTACTCCTAATTTCTAATTTCTAGTTTGGCTCCCCCGACG	8083
Mipponbare-repeatA	8073	TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATTTATGTAACATATGTTCTTTATTACCAATCAAAAATAGACACCTT	8172
Epi-d1-repeatA	8074	TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATTTATGTAACATATGTTCTTTATTACCAATCAAAAATAGACACCTT	8173
Mipponbare-repeatB	8006	TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATTTATGTAACATATGTTCTTTATTACCAATCAAAAATAGACACCTT	8105
Epi-d1-repeatB	8004	TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATTTATGTAACATATGTTCTTTATTACCAATCAAAAATAGACACCTT	8103
Mipponbare-repeatC	8084	TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATTTATGTAACATATGTTCTTTATTACCAATCAAAAATAGACACCTT	8183
Epi-d1-repeatC	8084	TTATGGTAAAAAATCGTTATGTTTTAACTATTTATCTGCTAGAGCATATGTAATTTATGTAACATATGTTCTTTATTACCAATCAAAAATAGACACCTT	8183
Mipponbare-repeatA	8173	ACTACTTTTCATCAAAAAGAAATAAAAAA-----TGTAAGTATGTTATTTCTGGAATACTCCTCGTGGAAACA	8240
Epi-d1-repeatA	8174	ACTACTTTTCATCAAAAAGAAATAAAAAA-----TGTAAGTATGTTATTTCTGGAATACTCCTCGTGGAAACA	8241
Mipponbare-repeatB	8106	ACTACTTTTCATCAAAAAGAAATAAAAAACAACACTAATAAATAATGAACATGATTTAGATGTAAGTATGTTATTTCTGGAATACTCCTCGTGGAAACA	8205
Epi-d1-repeatB	8104	ACTACTTTTCATCAAAAAGAAATAAAAAACAACACTAATAAATAATGAACATGATTTAGATGTAAGTATGTTATTTCTGGAATACTCCTCGTGGAAACA	8171
Mipponbare-repeatC	8184	ACTACTTTTCATCAAAAAGAAATAAAAAA-----TGTAAGTATGTTATTTCTGGAATACTCCTCGTGGAAACA	8251
Epi-d1-repeatC	8184	ACTACTTTTCATCAAAAAGAAATAAAAAA-----TGTAAGTATGTTATTTCTGGAATACTCCTCGTGGAAACA	8251
Mipponbare-repeatA	8241	TATGGACGCAATTCCTCAAAAAGCAAAAACCGGGGCGCGAGCCCTCGACACCAACCCCGTCCGATGTAAGCAGCAGCCCGAGATGGAGGCCAGCG	8340
Epi-d1-repeatA	8242	TATGGACGCAATTCCTCAAAAAGCAAAAACCGGGGCGCGAGCCCTCGACACCAACCCCGTCCGATGTAAGCAGCAGCCCGAGATGGAGGCCAGCG	8341
Mipponbare-repeatB	8206	TATGGACGCAATTCCTCAAAAAGCAAAAACCGGGGCGCGAGCCCTCGACACCAACCCCGTCCGATGTAAGCAGCAGCCCGAGATGGAGGCCAGCG	8305
Epi-d1-repeatB	8172	TATGGACGCAATTCCTCAAAAAGCAAAAACCGGGGCGCGAGCCCTCGACACCAACCCCGTCCGATGTAAGCAGCAGCCCGAGATGGAGGCCAGCG	8271
Mipponbare-repeatC	8252	TATGGACGCAATTCCTCAAAAAGCAAAAACCGGGGCGCGAGCCCTCGACACCAACCCCGTCCGATGTAAGCAGCAGCCCGAGATGGAGGCCAGCG	8351
Epi-d1-repeatC	8252	TATGGACGCAATTCCTCAAAAAGCAAAAACCGGGGCGCGAGCCCTCGACACCAACCCCGTCCGATGTAAGCAGCAGCCCGAGATGGAGGCCAGCG	8351

Fig. S2. Continued.

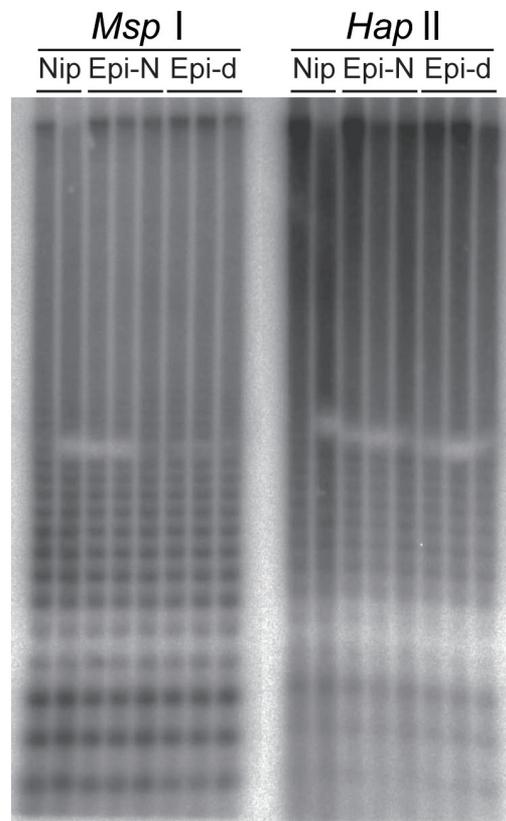


Fig. S4. DNA methylation analysis of 168-bp centromere specific repeat. The genomic DNA extracted from Nipponbare (Nip), *Epi-normal* (Epi-N), and *Epi-dwarf* (Epi-d) were digested by DNA methylation insensitive restriction enzyme, *Msp*I or DNA methylation-sensitive restriction enzyme *Hap*II. Digested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

Table S1. Segregation of chimeric plant

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

Table S3. Crossing experiment for allelic interaction

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

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

Seed source	Phenotype of F ₁ plants			Total
	Normal	Chimera	Dwarf	
<i>Epi-dwarf / d1</i>	0 (0%)	6 (4%)	144 (96%)	150 (100%)