

**Table S5 Meiotic analysis of coupling<sup>1</sup>**

| Derivatives of<br>EY7 | Markers examined           | # tetrads<br>analyzed | # PD-1 or<br>PD-2 | # NPD-1 or<br>NPD-2 | # TT | Association with<br>crossover |
|-----------------------|----------------------------|-----------------------|-------------------|---------------------|------|-------------------------------|
| 1                     | <i>hphMX4</i> ; IV 1028509 | 5                     | 2 PD-1            | 0                   | 3    | NCO                           |
| 2                     | <i>hphMX4</i> ; IV 1058335 | 3                     | 2 PD-1            | 0                   | 1    | NCO                           |
| 4                     | <i>hphMX4</i> ; IV 1028509 | 5                     | 2 PD-1            | 0                   | 3    | NCO                           |
| 5                     | IV 1002467; IV 1028509     | 3                     | 2 PD-1            | 0                   | 1    | NCO                           |
| 6                     | <i>hphMX4</i> ; IV 1044571 | 6                     | 3 PD-1            | 0                   | 3    | NCO                           |
| 7                     | <i>hphMX4</i> ; IV 1028509 | 4                     | 4 PD-1            | 0                   | 0    | NCO                           |
| 8                     | <i>hphMX4</i> ; IV 1028509 | 4                     | 3 PD-1            | 0                   | 1    | NCO                           |
| 10                    | <i>hphMX4</i> ; IV 1037347 | 3                     | 3 PD-2            | 0                   | 0    | CO                            |
| 13                    | <i>hphMX4</i> ; IV 1028509 | 4                     | 3 PD-1            | 0                   | 1    | NCO                           |
| 14                    | <i>hphMX4</i> ; IV 1028509 | 4                     | 4 PD-1            | 0                   | 0    | NCO                           |
| 16                    | <i>hphMX4</i> ; IV 1028509 | 5                     | 3 PD-1            | 0                   | 2    | NCO                           |
| 17                    | <i>hphMX4</i> ; IV 1028509 | 3                     | 3 PD-1            | 0                   | 0    | NCO                           |
| 18                    | <i>hphMX4</i> ; IV 1028509 | 5                     | 4 PD-1            | 0                   | 1    | NCO                           |
| 26                    | <i>hphMX4</i> ; IV 1037347 | 2                     | 2 PD-2            | 0                   | 0    | CO                            |
| 27                    | <i>hphMX4</i> ; IV 1044571 | 5                     | 2 PD-1            | 0                   | 3    | NCO                           |
| 29                    | <i>hphMX4</i> ; IV 1028509 | 5                     | 4 PD-1            | 0                   | 1    | NCO                           |
| 30                    | <i>hphMX4</i> ; IV 1028509 | 4                     | 2 PD-2            | 0                   | 2    | CO                            |
| 31                    | <i>hphMX4</i> ; IV 1028509 | 3                     | 2 PD-1            | 0                   | 1    | NCO                           |
| 33                    | <i>hphMX4</i> ; IV 1097831 | 6                     | 2 PD-1            | 0                   | 4    | NCO                           |
| 35                    | <i>hphMX4</i> ; IV 1044571 | 3                     | 3 PD-1            | 0                   | 0    | NCO                           |
| 36                    | <i>hphMX4</i> ; IV 1028509 | 4                     | 4 PD-1            | 0                   | 0    | NCO                           |
| 37                    | <i>hphMX4</i> ; IV 1028509 | 7                     | 3 PD-1            | 0                   | 4    | NCO                           |
| 38                    | <i>hphMX4</i> ; IV 1028509 | 5                     | 3 PD-2            | 0                   | 2    | CO                            |
| 39                    | <i>hphMX4</i> ; IV 1037347 | 3                     | 2 PD-2            | 0                   | 1    | CO                            |
| 40                    | <i>hphMX4</i> ; IV 1028509 | 5                     | 5 PD-2            | 0                   | 0    | CO                            |
| 41                    | <i>hphMX4</i> ; IV 1028509 | 6                     | 3 PD-2            | 0                   | 3    | CO                            |
| 42                    | <i>hphMX4</i> ; IV 1028509 | 5                     | 3 PD-2            | 0                   | 2    | CO                            |
| 43                    | <i>hphMX4</i> ; IV 1028509 | 4                     | 4 PD-1            | 0                   | 0    | NCO                           |
| 44                    | <i>hphMX4</i> ; IV 1028509 | 2                     | 2 PD-2            | 0                   | 0    | CO                            |
| 45                    | <i>hphMX4</i> ; IV 1028509 | 2                     | 2 PD-1            | 0                   | 0    | NCO                           |
| 46                    | <i>hphMX4</i> ; IV 1028509 | 3                     | 3 PD-1            | 0                   | 0    | NCO                           |
| 47                    | <i>hphMX4</i> ; IV 1028509 | 3                     | 3 PD-1            | 0                   | 0    | NCO                           |
| 48                    | <i>hphMX4</i> ; IV 1028509 | 3                     | 3 PD-2            | 0                   | 0    | CO                            |
| 49                    | <i>hphMX4</i> ; IV 1028509 | 2                     | 2 PD-1            | 0                   | 0    | NCO                           |

|    |                            |   |        |   |   |     |
|----|----------------------------|---|--------|---|---|-----|
| 50 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-1 | 0 | 1 | NCO |
| 51 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-1 | 0 | 1 | NCO |
| 52 | <i>hphMX4</i> ; IV 1051452 | 4 | 3 PD-1 | 0 | 1 | NCO |
| 53 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-2 | 0 | 1 | CO  |
| 54 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-2 | 0 | 1 | CO  |
| 55 | <i>hphMX4</i> ; IV 1028509 | 4 | 2 PD-1 | 0 | 2 | NCO |
| 56 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-1 | 0 | 1 | NCO |
| 57 | <i>hphMX4</i> ; IV 1028509 | 3 | 3 PD-1 | 0 | 0 | NCO |
| 58 | <i>hphMX4</i> ; IV 1028509 | 3 | 3 PD-1 | 0 | 0 | NCO |
| 59 | <i>hphMX4</i> ; IV 1028509 | 4 | 4 PD-2 | 0 | 0 | CO  |
| 60 | <i>hphMX4</i> ; IV 1028509 | 2 | 2 PD-1 | 0 | 0 | NCO |
| 61 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-2 | 0 | 1 | CO  |
| 62 | <i>hphMX4</i> ; IV 1028509 | 6 | 3 PD-1 | 0 | 3 | NCO |
| 63 | <i>hphMX4</i> ; IV 1028509 | 4 | 2 PD-1 | 0 | 2 | NCO |
| 64 | <i>hphMX4</i> ; IV 1037347 | 3 | 2 PD-1 | 0 | 1 | NCO |
| 65 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-1 | 0 | 1 | NCO |
| 66 | <i>hphMX4</i> ; IV 1028509 | 3 | 2 PD-1 | 0 | 1 | NCO |
| 69 | <i>hphMX4</i> ; IV 1044571 | 8 | 4 PD-2 | 0 | 4 | CO  |
| 70 | <i>hphMX4</i> ; IV 1028509 | 6 | 4 PD-1 | 0 | 2 | NCO |
| 71 | <i>hphMX4</i> ; IV 1028509 | 4 | 3 PD-1 | 0 | 1 | NCO |

<sup>1</sup>Tetrads were dissected and examined for markers flanking the conversion event. For most events, the *hphMX4* marker was the centromere-proximal marker. The centromere-distal marker was examined by SPA (described in text). The primers and restriction enzymes used for this analysis are given in Table S3. PD-1 tetrads are those with two Hyg<sup>R</sup> SNP<sup>W</sup> to two Hyg<sup>S</sup> SNP<sup>Y</sup> spores; SNP<sup>W</sup> and SNP<sup>Y</sup> are defined as in Figure 6. PD-2 tetrads are those with two Hyg<sup>R</sup> SNP<sup>Y</sup> to two Hyg<sup>S</sup> SNP<sup>W</sup> spores. Based on this analysis, we classified the events as crossover-associated (CO) or unassociated (NCO).