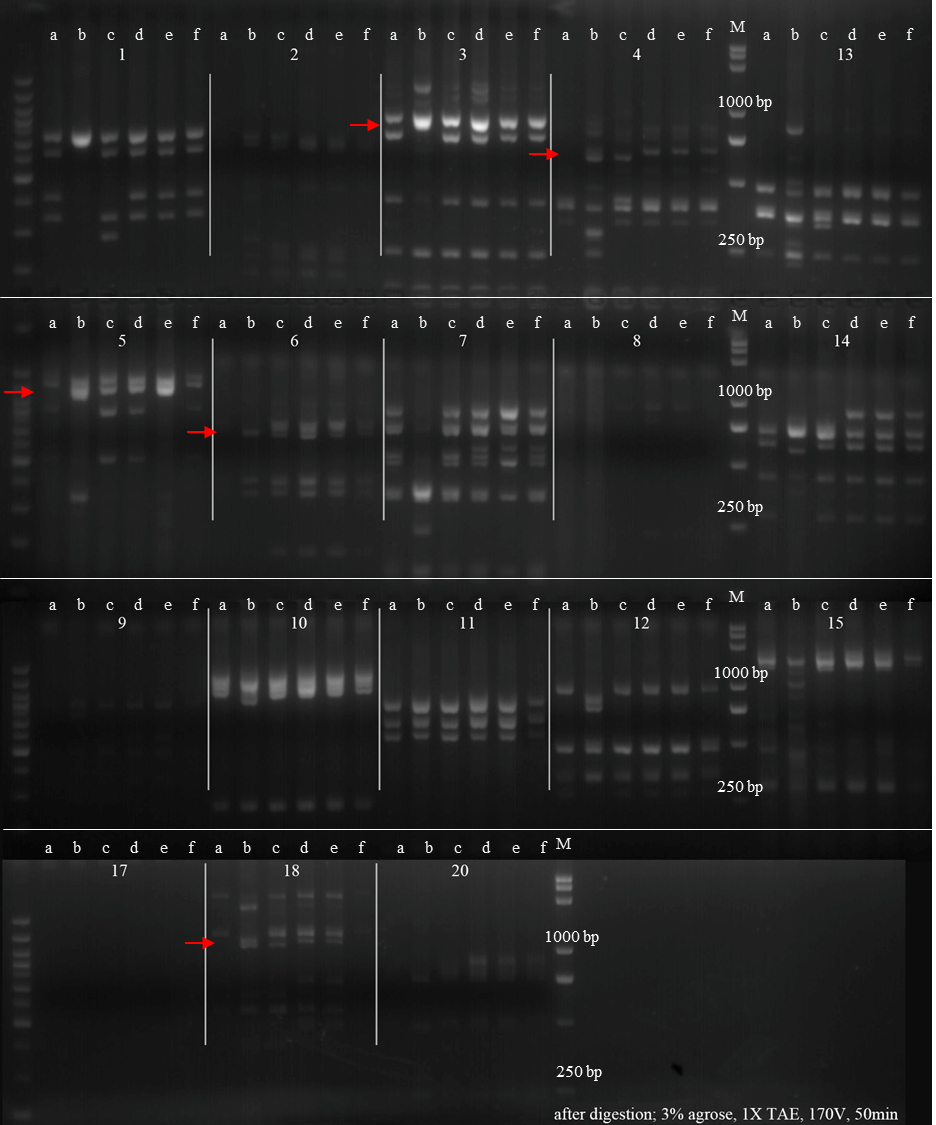
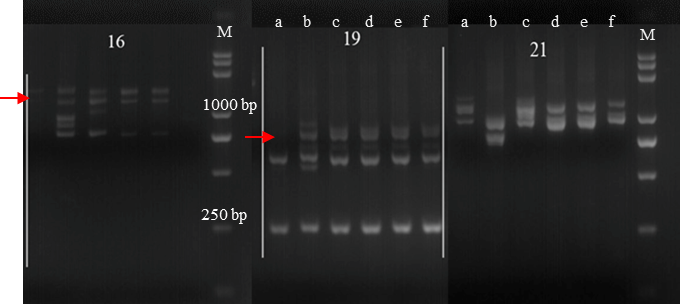


Supplemental Fig. 1. Chromosome configuration of PMC MI in TE261-1 (A1), TE266-1 (B1) and TE346-1 (C1), chromosomes were dyed red by carbol fuchsin, Based on investigating 40 cells every material, the chromosome configuration of TE261-1, TE266-1, TE346-1 is 2n=28II=56. GISH of PMC MI in TE261-1 (A2), TE266-1 (B2) and TE346-1 (C2), St (Ps. Strigosa) genome DNA labeled with Texas-Red-5-dCTP were used as probe and YN15 genome DNA were used as block, 14 alien chromosomes matched 7II.

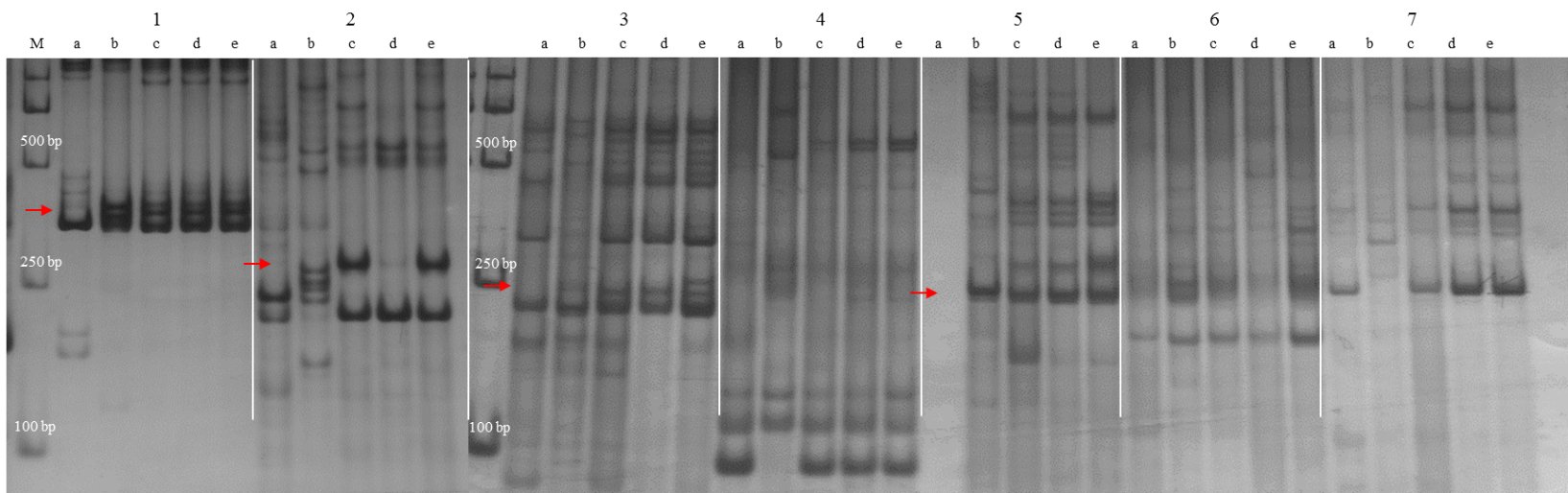




Supplemental Fig. 2. PCR patterns of amplification with the St-chromosome-specific molecular markers

a. YN15, b. *Th*. *intermedium,* c. *Ps*. *strigosa*, d. TE261-1, e. TE266-1, f. TE346-1, M. DL5000

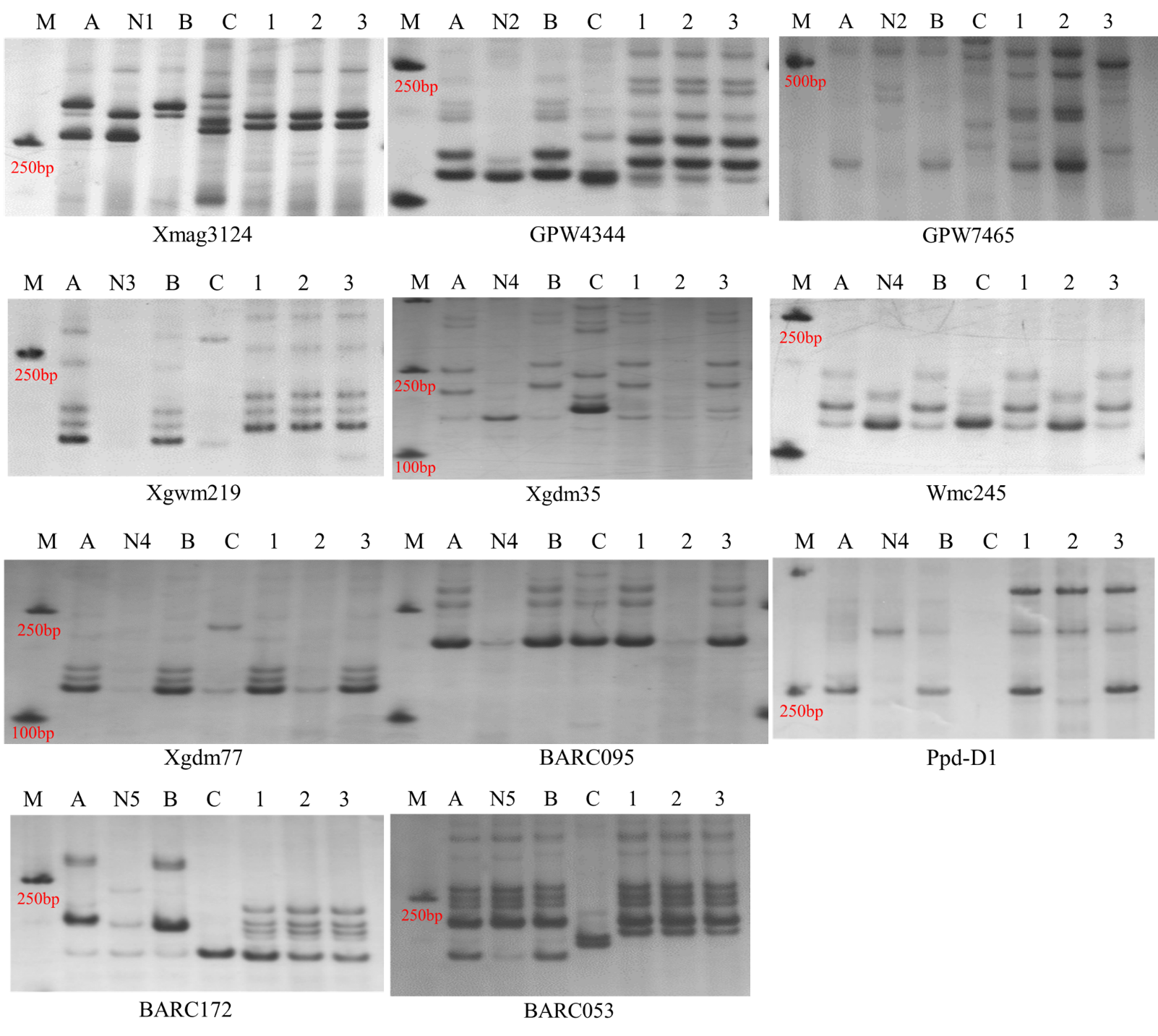
The information of makers were shown in Supplemental Table 2.



Supplemental Fig. 3. PCR patterns of amplification with the E-chromosome-specific molecular markers

a. YN15, b. *Th*. *intermedium,* c. TE261-1, d. TE266-1, e. TE346-1, M. DL2000

The information of makers were shown in Supplemental Table 3.



Supplemental Fig. 4. Amplified results of wheat chromosome-specific markers Xmag3124 (1A), GPW4344, GPW7465 (6A), Xgwm219 (6B), Xgdm35, Wmc245, Xgdm77, BARC095, Ppd-D1 (2D) and BARC172, BARC053 (7D).

M. Maker, A. Chinese spring, N1. N1AT1D, N2. N6AT6D, N3. N6BT6D, N4. N2DT2B,

N5. N7DT7B, B. Yannong15, C. *Th*. *intermedium*, 1. TE261-1, 2. TE266, 3. TE346

Supplemental Table 1. Chromosome configurations of TE261-1, TE266 and TE346-1 at PMC MI

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Material | Plants observed | Cells scored | Average chromosome configuration | | | | Relative chaotic coefficient |
| Ⅰ | Ⅱ | Ⅲ | IV |
| TE261-1 | 6 | 45 | 0.089 | 27.778 | 0.044 | - | 0.005 |
| TE266-1 | 5 | 40 | 0.150 | 27.85 | 0.050 | - | 0.007 |
| TE346-1 | 5 | 42 | 0.095 | 27.905 | - | 0.024 | 0.004 |

Relative chaotic coefficient (RCC) = (number of univalents + number of multivalents)/number of bivalents.

Supplemental Table 2. The St-chromosome-specific molecular markers used in the study(Hu et al., 2014)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Maker | Homologous relationship | Enzyme | No. | Maker | Homologous relationship | Enzyme |
| 1 | TNAC1001 | 1StS | *Taq*Ⅰ | 12 | TNAC1540 | 5StL | *Hae*Ⅲ |
| 2 | TNAC1010 | 1StS | *Taq*Ⅰ | 13 | TNAC1554 | 5StL | *Hae*Ⅲ |
| 3 | TNAC1021 | 1StL | *Taq*Ⅰ | 14 | TNAC1674 | 6StS | *Taq*Ⅰ |
| 4 | TNAC1026 | 1StL | *Taq*Ⅰ | 15 | TNAC1685 | 6StS | *Taq*Ⅰ |
| 5 | TNAC1102 | 2StS | *Taq*Ⅰ | 16 | TNAC1702 | 6StL | - |
| 6 | TNAC1176 | 2StS | *Taq*Ⅰ | 17 | TNAC1752 | 6StL | *Taq*Ⅰ |
| 7 | TNAC1204 | 2StL | *Hae*Ⅲ | 18 | TNAC1806 | 7StS | *Taq*Ⅰ |
| 8 | TNAC1248 | 3StS | *Taq*Ⅰ | 19 | TNAC1926 | 7StS | - |
| 9 | TNAC1263 | 3StL | *Taq*Ⅰ | 20 | TNAC1903 | 7StL | *Taq*Ⅰ |
| 10 | TNAC1485 | 5StS | *Taq*Ⅰ | 21 | TNAC1957 | 7StL | *-* |
| 11 | TNAC1497 | 5StS | *Taq*Ⅰ |  |  |  |  |

Supplemental Table 3. The E-chromosome-specific molecular markers used in the study(Hu et al., 2012)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | Maker | Homologous relationship | No. | Maker | Homologous relationship |
| 1 | Xmag3253 | 2E | 5 | Xmag2276 | 6E |
| 2 | Xmag905 | 3E | 6 | Xmag2134 | 7E |
| 3 | Xmag532 | 5E | 7 | Xmag3284 | 7E |
| 4 | Xmag1579 | 5E |  |  |  |

Note：Results showed that TE261-1 has 1St, 2St, 6St, 7St, 2E, 3E, 5E, 6E, 7E; TE266-1 has 1St, 2St, 6St, 7St, 2E, 5E, 6E, 7E; and TE346-1 has 1St, 2St, 7St, 2E, 3E, 5E, 6E, 7E.