

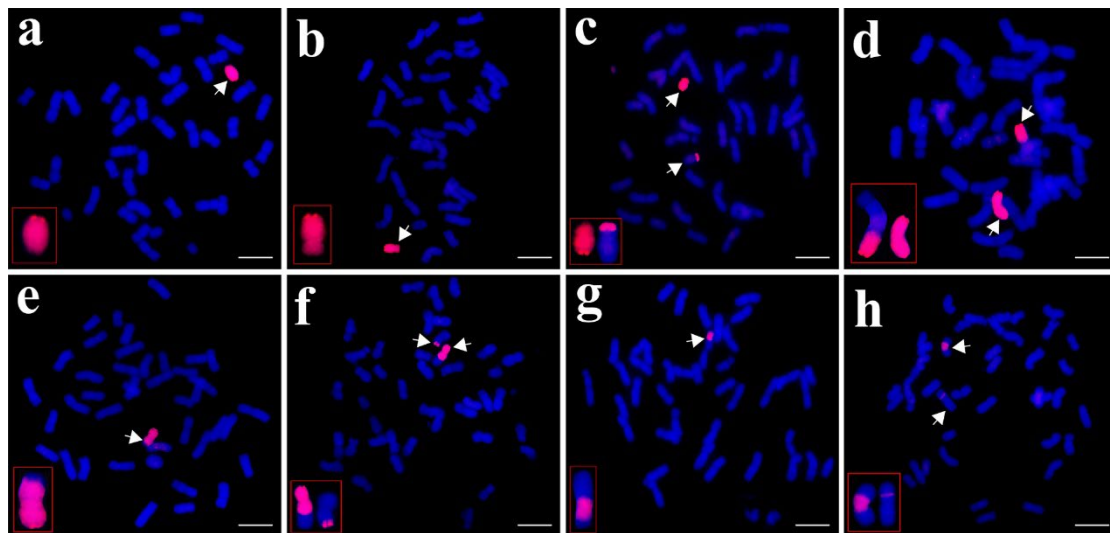


Fig. S1. GISH identification of irradiation progeny M₁. Tetraploid *Th. elongatum* genome labeled in red as a GISH probe; a, M-1-1; b, M-1-9; c, M-4-8; d, M-1-12; e, M-9-6; f, M-5-2; g, M-10-2; h, M-5-8. Arrows indicate recombinant chromosome 4E. Scale bar: 10 μ m.

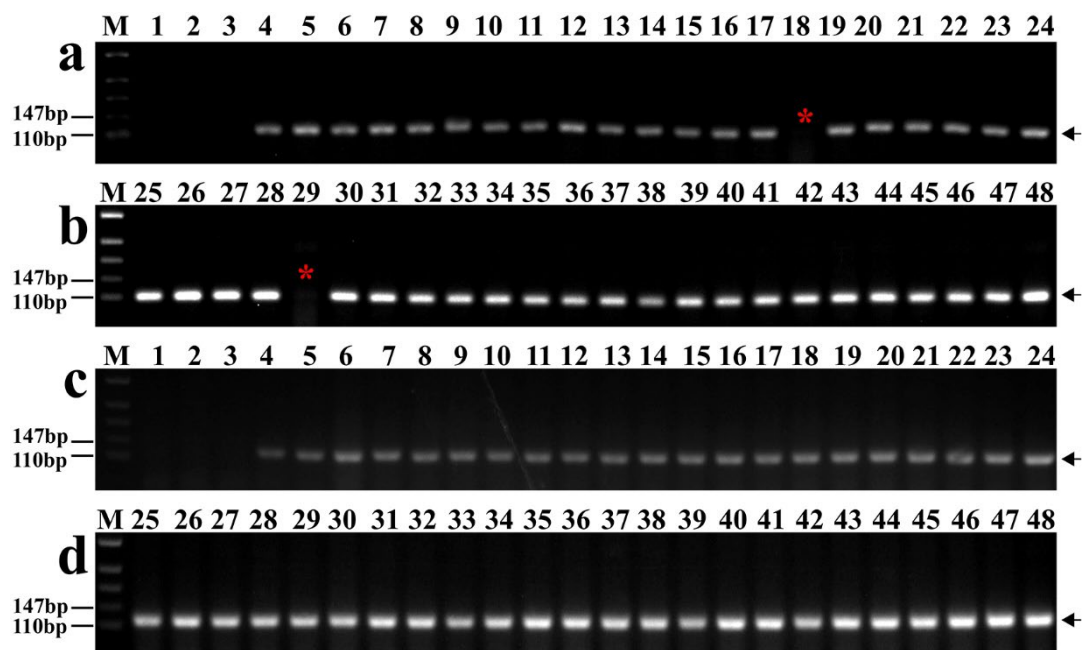


Fig. S2. Amplification of markers *TTE4E-77* (4ES) and *TTE4E-112* (4EL) in K16-730-3 $\times$ SM482 F₂ stripe rust-resistant plants. a, b, *TTE4E-77* (4ES); c, d, *TTE4E-112* (4EL). M, Maker; 1, CS; 2, SM482; 3, SM51; 4, 8801; 5, K16-730-3; 6-48, F₂ stripe rust-resistant plants.

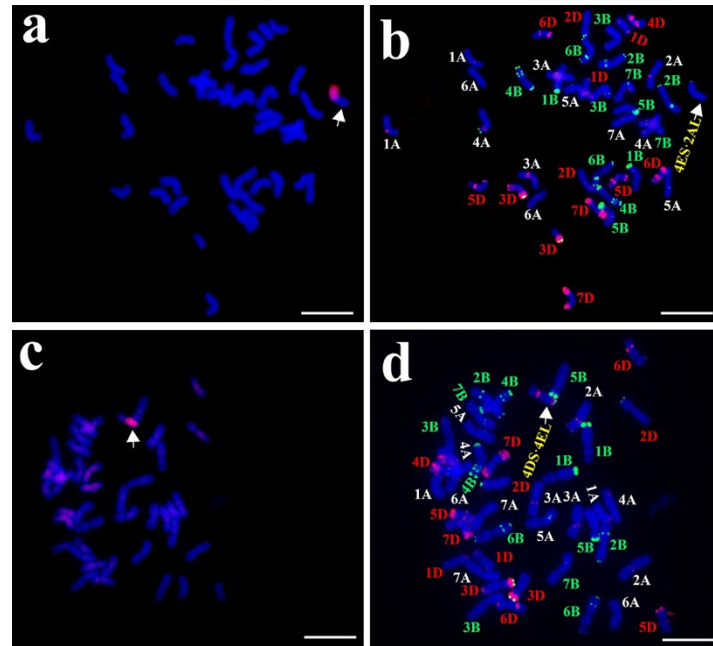


Fig. S3. GISH and FISH identification of KW-7-2-5 and T4ES-2AL. Tetraploid *Th. elongatum* genome labeled in red as a GISH probe (a, c). Oligo-pSc119.2 (green) and Oligo-pTa535 (red) as FISH probes (b, d).