## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1 Description: Strains used in the study

File Name: Supplementary Data 2 Description: Sporulation efficiency of the strains used in the 5-FOA assay

File Name: Supplementary Data 3 Description: Spore viability of the diploids hybrids and derived RTG samples

File Name: Supplementary Data 4 Description: Average growth percentage on 5-FOA and Canavanine for the diploid hybrids used in this work

File Name: Supplementary Data 5 Description: Environments used for phenotyping

File Name: Supplementary Data 6 Description: Summary statistics of LOHs

File Name: Supplementary Data 7 Description: Breakpoints heterozygosity statistics

File Name: Supplementary Data 8 Description: Mutfunc analysis of aminoacid mutations in the ScMA CDS

File Name: Supplementary Data 9 Description: List of samples sequenced

File Name: Supplementary Data 10 Description: LOH breakpoints association with meiotic hotspot on chrII-R

File Name: Supplementary Data 11 Description: Genome-wide LOH breakpoints association with meiotic hotspots

File Name: Supplementary Data 12 Description: Primers used in the study

File Name: Supplementary Data 13 Description: RTG analysis of reciprocal non-reciprocal markers in LOH

File Name: Supplementary Data 14 Description: Environments with BPH and WPH

File Name: Supplementary Data 15 Description: Mean number of LOHs (per sample per Mbp) detected in ScMA/ScNA hybrids