## b а H3K27ac H3K36me3 L stage mZ stage L stage mZ stage Spo11-Control Spo11-Dmc1-Control Dmc1-Control Spo11+ Dmc1-Control Spo11-+-Dmc1+ SPO11-oligo defined DSB hotspots (autosome) SPO11-oligo defined DSB hotspots (autosome) -5-kb -0 3 6 0 18 36 Center +5-kb -5-kb Center +5-kb H3K27ac on DSB hotspots (L) H3K27ac on DSB hotspots (mZ) H3K36me3 on DSB hotspots (L) H3K36me3 on DSB hotspots (mZ) 2.2 Control Spo114 Dmc14 Control Spo11-Dmc1-Control Spo114 Dmc14 Contro Spo11 Dmc1 H3K36me3 tag density 10. 10. H3K27ac tag density 1.6 1.7 1.7 5 1.0 +5-kb -5-kb Center +5-kb -5-kb Center +5-kb -5-kb Center +5-kb -5-kb Center С H3K9me2 mZ stage L stage Control Spo11-Control Spo11+ Dmc1-SPO11-oligo defined DSB hotspots (autosome) -5-kb õ +5-kb -Center H3K9me2 on DSB hotspots (L) H3K9me2 on DSB hotspots (mZ) H3K9me2 tag density Contro Spo11-Dmc1-

## Supplementary information, Figure S12



+5-kb

Center

-5-kb

+5-kb

-5-kb

Center

and profiles (bottom) of H3K27ac tag density on the SPO11-oligo defined DSB hotspots in control, Spo11-/- and Dmc1-/- leptotene (left) or mid-zygotene (right) spermatocytes. Each row in heatmaps represents a DSB hotspot of  $\pm$  5 kb around the center and ranked by SPO11-oligo density from highest and lowest. Color indicates ChIP-seq tag density. Average ChIP-seq tag density was calculated using ChIP-seq reads coverage with 50-bp resolution. b Heatmaps (top) and profiles (bottom) of H3K36me3 tag density on the SPO11-oligo defined DSB hotspots in control, Spo11-/and  $Dmc1^{-/-}$  leptotene (left) or mid-zygotene (right) spermatocytes. Each row in heatmaps represents a DSB hotspot of  $\pm$  5 kb around the center and ranked by SPO11oligo density from highest and lowest. Color indicates ChIP-seq tag density. Average ChIP-seq tag density was calculated using ChIP-seq reads coverage with 50-bp resolution. c Heatmaps (top) and profiles (bottom) of H3K9me2 tag density on the SPO11-oligo defined DSB hotspots in control, Spo11-/- and Dmc1-/- leptotene (left) or mid-zygotene (right) spermatocytes. Each row in heatmaps represents a DSB hotspot region of  $\pm$  5 kb around the center and ranked by SPO11-oligo density from highest and lowest. Color indicates ChIP-seq tag density. Average ChIP-seq tag density was calculated using ChIP-seq reads coverage with 50-bp resolution.