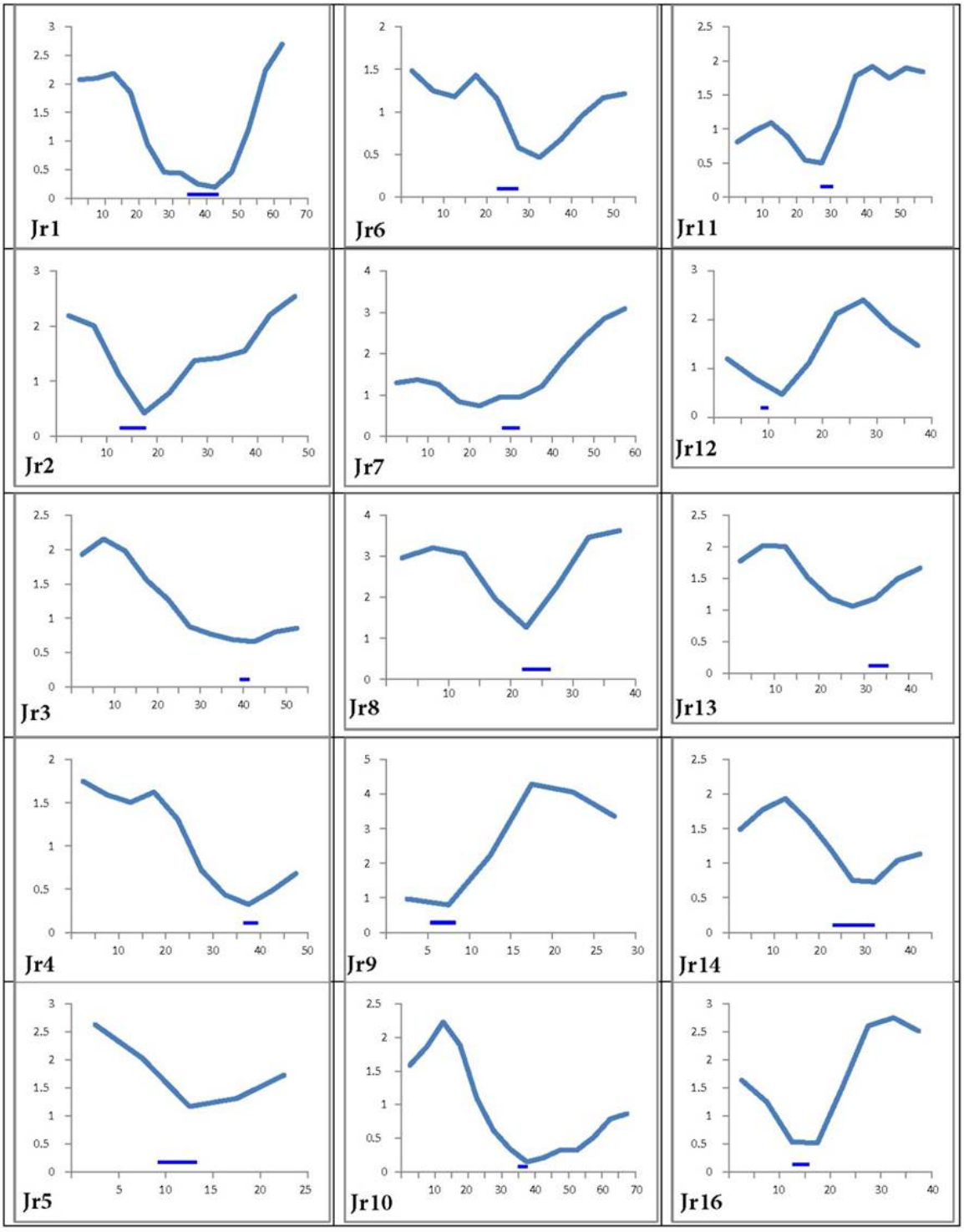

Recombination rate (cM/Mb)

Physical map of walnut chromosomes (Mb)

Figure S2. Recombination rates expressed as cM/Mb across the physical maps of 15 of the 16 walnut chromosomes. The bar in each figures indicates the synteny gap across all genome comparisons. The coincidence of the synteny gap and recombination rate global minimum marks the centromerics region of the walnut chromosomes.

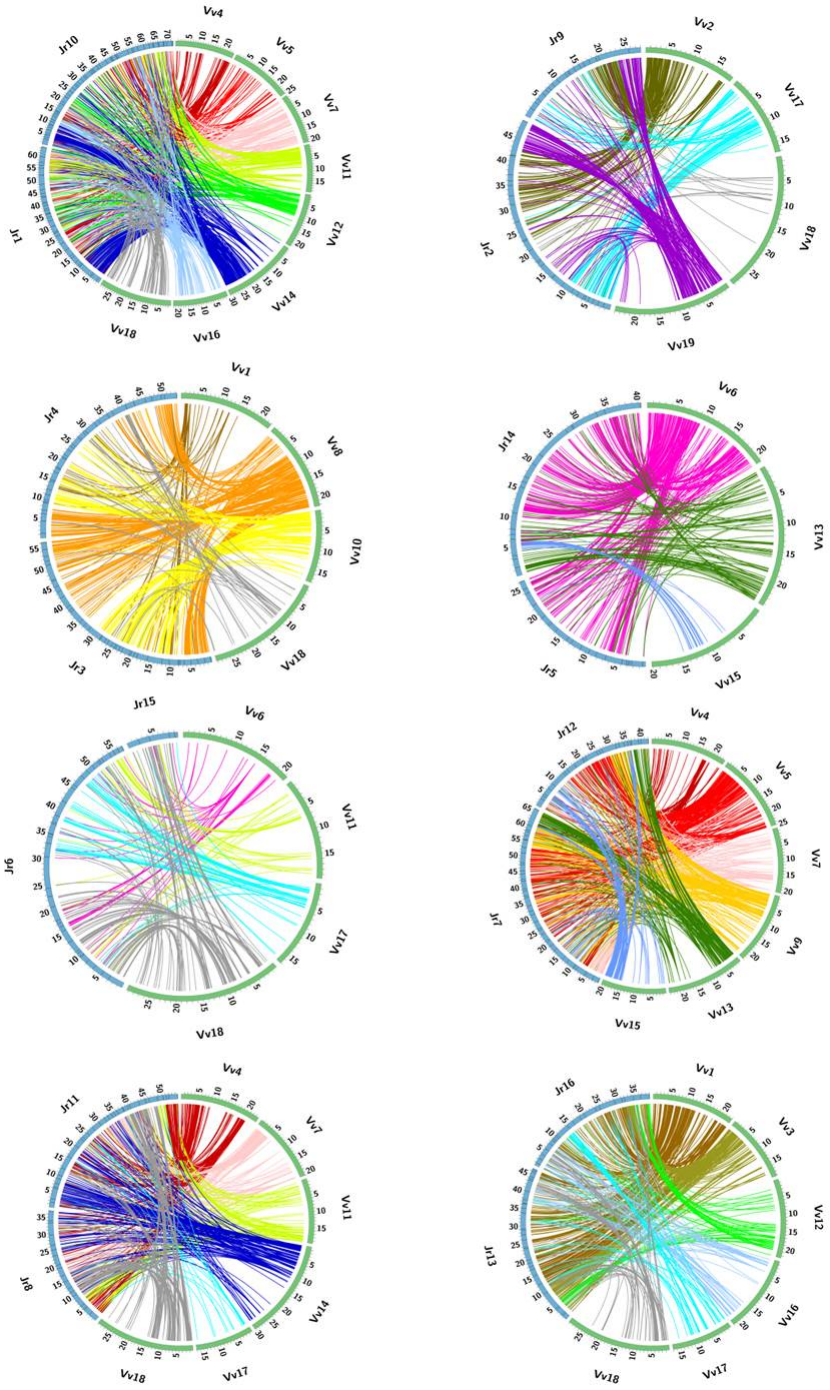

Figure S3. Relationships of the physical maps of walnut homoeologous chromosomes (blue portions of circles) to the pseudomolecules of corresponding grape chromosomes (green portions of circles). Each pseudomolecule has its unique color. A line connecting a walnut physical map

with a pseudomolecule represents a syntenic cdBES. Note that bundles of lines emanating from a grape seudomolecules bifurcate to the walnut homoeologous chromosomes, reflecting duplication of the chromosome segment in the walnut genome.