

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Metadata table, related to Fig. 1.

File Name: Supplementary Data 2

Description: NHCCs ($q < 0.05$, including intertelomeric and inter-centromeric NHCCs), related to Fig. 1.

File Name: Supplementary Data 3

Description: Non-interacting regions ($q < 0.05$), related to Fig. 1.

File Name: Supplementary Data 4

Description: Eigendecomposition of all datasets, related to Fig. 2.

File Name: Supplementary Data 5

Description: CD results of all 40,282 NHCCs, related to Fig. 2.

File Name: Supplementary Data 6

Description: Genes annotated in 393 bins ($q < 0.05$, ≥ 10 datasets), related to Fig. 3.

File Name: Supplementary Data 7

Description: Constitutive NHCCs ($q < 0.05$, $\geq 50\%$ datasets), related to Fig. 3.

File Name: Supplementary Data 8

Description: Unique NHCCs of all datasets, related to Fig. 4

File Name: Supplementary Data 9

Description: Unique female XX-autosomal interactions, related to Fig. 5.

File Name: Supplementary Data 10

Description: Unique male XY-autosomal interactions, related to Fig. 5.

File Name: Supplementary Data 11

Description: Common XX and XY--autosomal interactions, related to Fig. 5

File Name: Supplementary Data 12

Description: X vs. Y interactions in male cells, related to Fig. 5.

File Name: Supplementary Data 13

Description: Y-autosomal interactions in male cells, related to Fig. 5.

File Name: Supplementary Movie 1

Description: 3D model of community detection results highlighting large (red gradient) and small, gene-dense chromosomes (black & blue gradient).

File Name: Supplementary Movie 2

Description: 3D model of community detection results showing community of 'anchor loci' in orange and remaining genome in blue.