

## **Description of Supplementary Files**

File Name: Supplementary Data 1.

Description: Genes at ends of significant interactions crossing fusion sites (SIAFS).

File Name: Supplementary Data 2.

Description: GO and pathway enrichment results of genes at the ends of significant interactions across fusion sites.

File Name: Supplementary Data 3.

Description: The positively selected genes and the rapidly evolving genes in different muntjac lineages.

File Name: Supplementary Data 4.

Description: GO and pathway enrichment results from combined positively selected genes and rapidly evolving genes.

File Name: Supplementary Data 5.

Description: Genes and phenotype related to chromosome stability in Mouse Genome Informatics (MGI) database.

File Name: Supplementary Data 6.

Description: Expression information of genes with disrupted ORFs in neo-Y regions.

File Name: Supplementary Data 7.

Description: Information of genes in the neo-sex regions with switched compartment.

File Name: Supplementary Data 8.

Description: GO and pathway enrichment results of genes in neo-sex regions with switched compartment.