

Supplementary Figures

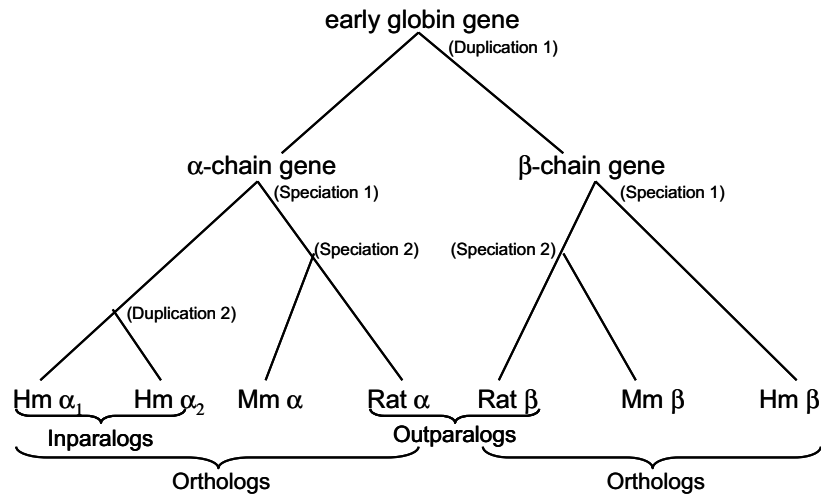


Figure S1: An illustration of orthology and paralogy relationships. The α globin genes on different species are orthologous to each other, and they form an ortholog group. So do the β globin genes. The rat α and β globin genes are outparalogs with respect to the speciation of mouse and rat (*i.e.*, speciation 2) as well as with respect to speciation 1. The human α_1 and α_2 globin genes are inparalogs with respect to the speciation of human and rat (*i.e.*, speciation 1).

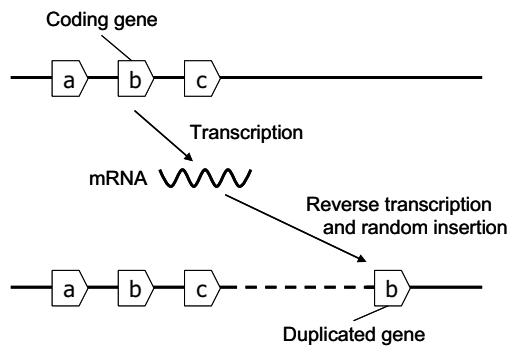


Figure S2: Retrotransposition.

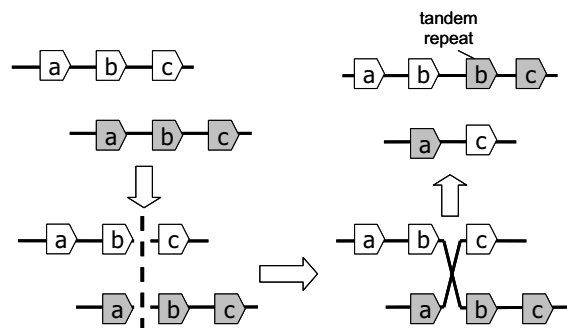


Figure S3: Unequal crossover.

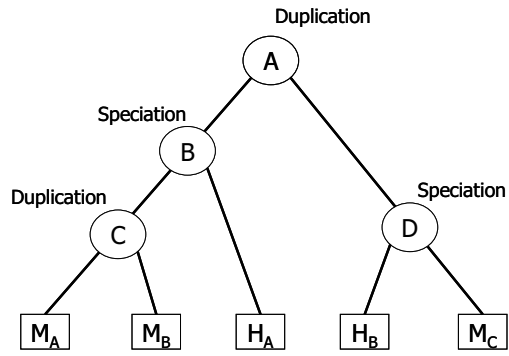


Figure S4: An example of the gene duplication dating algorithm. Node C is a duplication event since M_A and M_B are both from the same species. Node B and D correspond to speciation events since they have descendant genes from two species. Node A is a duplication event since it is the ancestral node of speciation nodes B and D .