

Supplementary information, Data S9 Basal positioning of the East Asian breeds is robust against gene flow between wolves and dogs.

In our phylogenetic analysis (Figure 1I), we found that the East Asian dogs are the most basal lineages relative to the gray wolves. However, in our demographic analysis (Figure 2C), we found that low levels of migrations occurred between southern Chinese indigenous dogs and gray wolves. The question is then, whether the basal positioning of the southern Chinese indigenous dogs is due to migrations between wolves and the southern Chinese indigenous dogs.

To address this question, we carried out a simulation depicted as Supplementary information, Figure S9. In the simulation scheme, a subclade lineage (population 2, similar to the Chinese indigenous dogs) exchanges migrants with an outgroup species. We wanted to know how migration with the outgroup species affects the inferred tree topologies. In other words, if migration with the outgroup species makes the subclade lineage (population 2) more basal (Supplementary information, Figure S9, right panel). As shown in Supplementary information, Table S7, we found, with typical migration rates ($4Nm \leq 50$), the tree topologies are relatively robust. In other words, the basal positions of the East Asian dogs are not due to low levels of migrations.