## **Description of Additional Supplementary Files**

## File Name: Supplementary Data 1

Description: Group-level LRT results of 161 groups of binding sites.  $r_1$  and  $r_2$  are the relative substitution rates of a TFBS group in the human lineage and in other primates. N indicates the length of concatenated sequence of a TFBS group. P-values (p) are calculated from chi-square test of likelihood ratio. Bonferroni-corrected p-values are presented in the column named Adj.p. The ratio ( $r_1/r_2$ ) indicates the fold of increase in substitution rate in the human lineage.

## File Name: Supplementary Data 2

Description: Significant GO biological process terms of accelerated TFBS associated genes. Sheet 1 contains GO terms of the genes associated with top accelerated TFBSs in all the seven groups. Sheet 2 contains GO terms of the genes associated with top accelerated TFBSs in FOXP2 group.

## File Name: Supplementary Data 3

Description: Group-level LRT results of CTCF tissue-specific binding sites. Acession ID and tissue information are listed.  $r_1$  and  $r_2$  are the relative substitution rates of a tissue-specific CTCF binding site group in the human lineage and in other primates. The ratio  $(r_1/r_2)$  indicates the fold of increase in the substitution rate of the CTCF