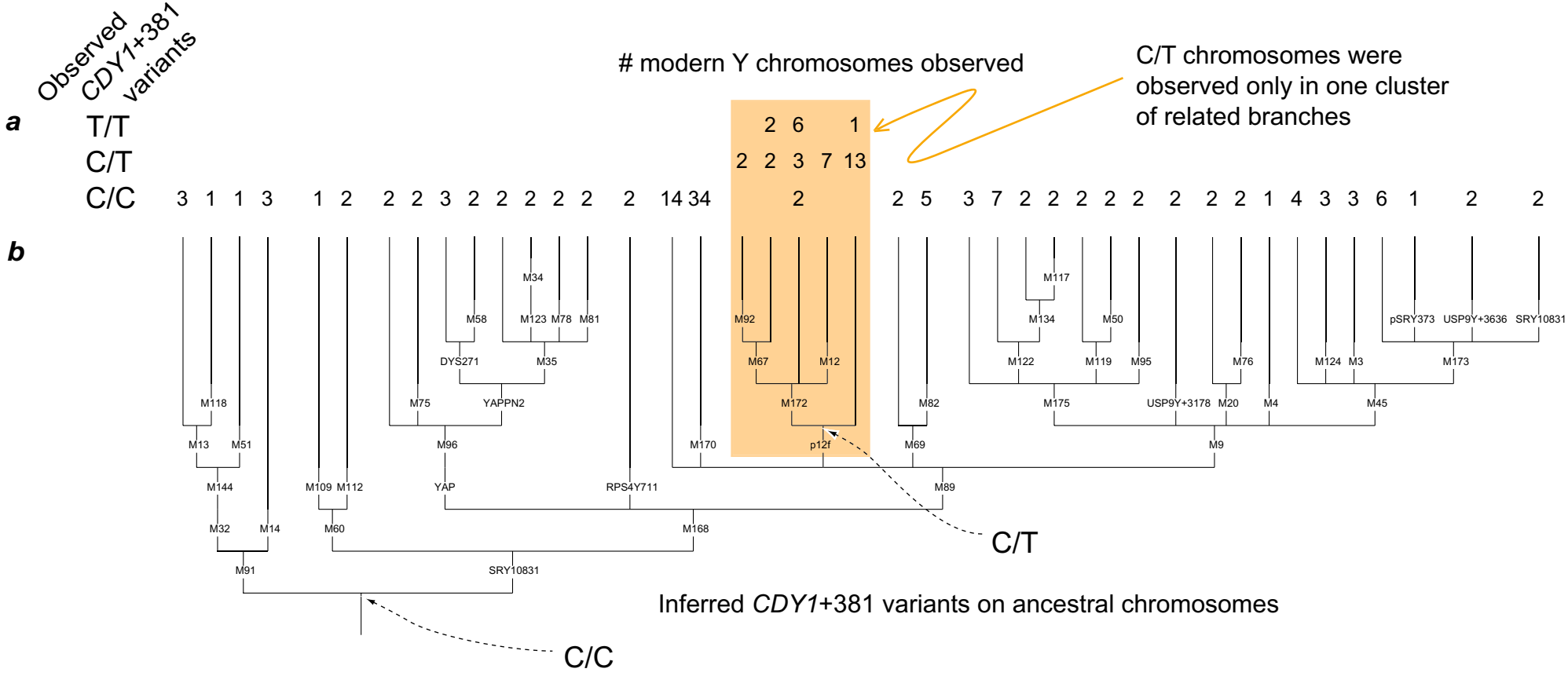
Rozen *et al*. Abundant gene conversion between arms of palindromes in human and ape Y chromosomes. *Nature* **423**, 873-876 (2003)

Supplementary Figure 1. Distribution of *CDY1*+381 variants across the genealogical tree of the human MSY. *CDY1*+381 is a duplicated site of sequence variation in the arms of Y palindrome P1. ***a***, The number of Y chromosomes with each variant ("T/T", "C/T", "C/C"; see text) observed at each terminal branch of the tree. ***b***, Parsimony-based genealogical tree of the human MSY based on stable, biallelic polymorphisms, which determine the branching (Underhill et al., 2001). Polymorphisms are indicated on the branches (see Supplementary Table 5 for references). Terminal branches correspond to MSY haplotypes. As shown, the common ancestor of all extant human Y chromosomes is inferred to have been a C/C chromosome, and the common ancestor of the branches in the orange-highlighted cluster is inferred to have been a C/T chromosome (see Discussion, below).



Discussion. We infer that the most recent common ancestor of all extant human MSYs was a C/C chromosome, since C/T and T/T chromosomes are not found outside of the orange-highlighted cluster. Thus, the C/T chromosome apparently first arose by a C-to-T substitution at one of the two *CDY1*+381 sites. We also infer that all of the stable, biallelic polymorphisms-M172, M67, M92, and M12-within the highlighted cluster probably arose on a C/T chromosome. Otherwise the C-to-T substitution would have had to occur more than once within this cluster, but not in any other branch of the entire tree. Because the C sequence variant corresponds to a C in a CpG dinucleotide, with an expected high rate of C-to-T mutations, we considered the alternate possibility that observations of the C/T chromosomes could be due to recurrent C-to-T substitutions. However, this possibility is inconsistent with the absence of other instances of this mutation in 133 chromosomes (37 haplotypes) outside of the highlighted cluster.

Underhill, P.A. et al. The phylogeography of Y chromosome binary haplotypes and the origins of modern human populations. *Ann. Hum. Genet*. **65**, 43-62 (2001)