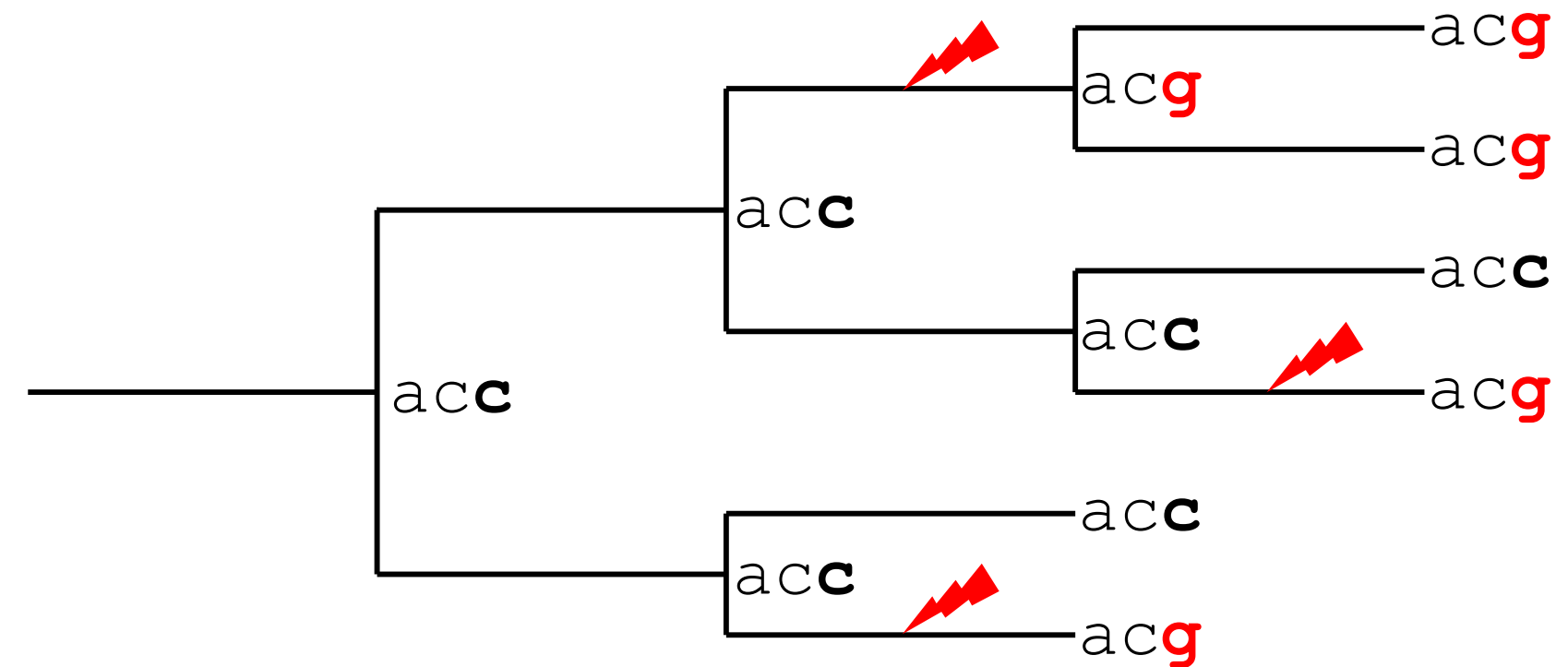## Estimate mutation rates at 4-fold degenerate sites.

The third nucleotide in codon `acc` is 4-fold degenerate since `aca`, `acc`, `acg`, and `act` all encode threonine.

We count the number of *mutations* on branches of the tree, not the total mutated nucleotides: in the tree at right there are three c→g mutations even though four sequences have the mutation.

Determine actual counts of mutations at each site.

In the tree at right, there is one count of the indicated c→g mutation, which induces an alanine to glycine mutation .