A: Synonymous and non-synonymous DNA mutations

$N_{G \to C}$

Non-synonymous DNA mutation from G to C changing the encoded amino-acid from lysine to asparagine.

$S_{G \to A}$

Synonymous DNA mutation from G to A not changing the encoded amino-acid.

Phylogenetic tree reconstruction using three hypothetical DNA sequences
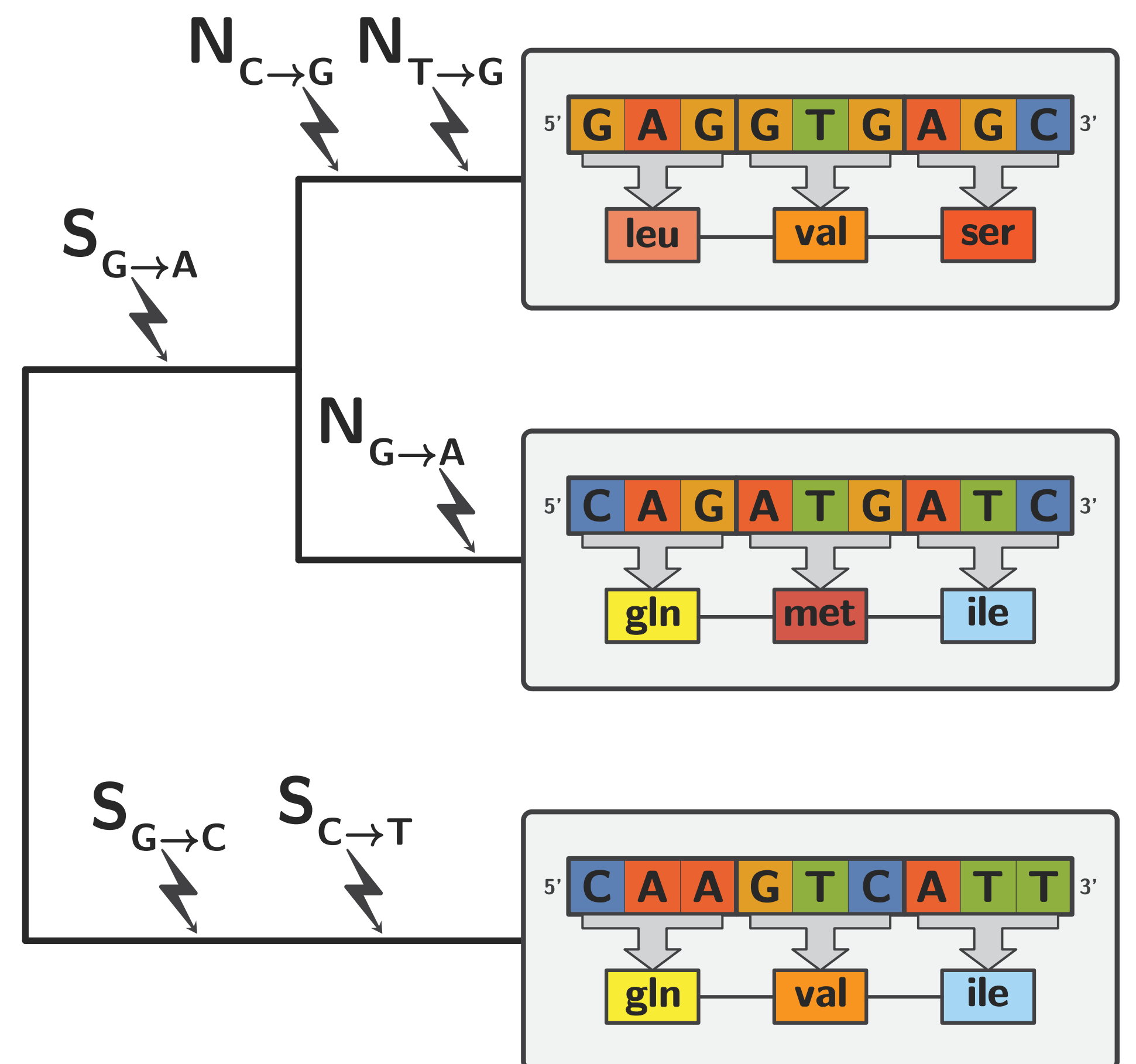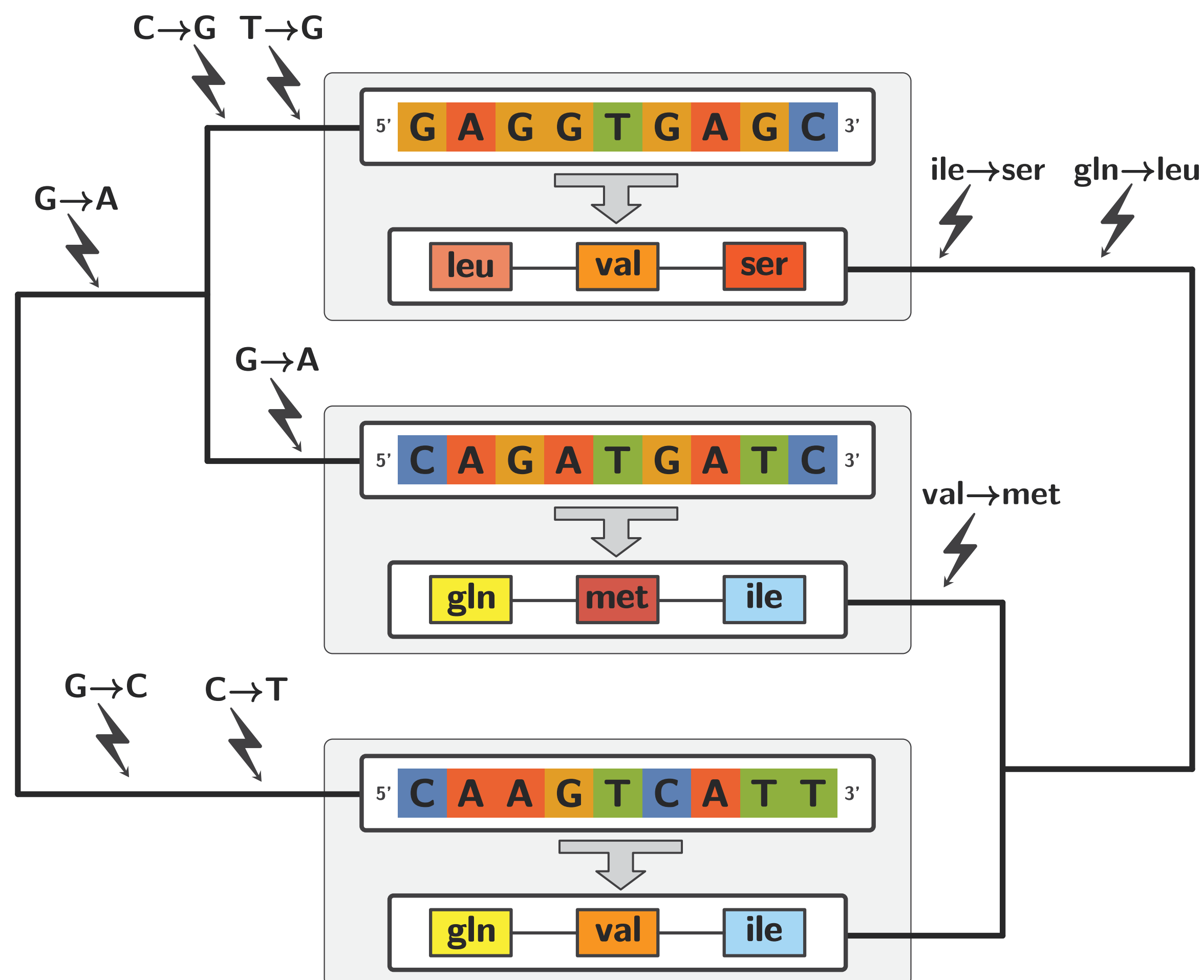
B: DNA (left) and amino-acid (right) substitution models

C: Codon substitution model