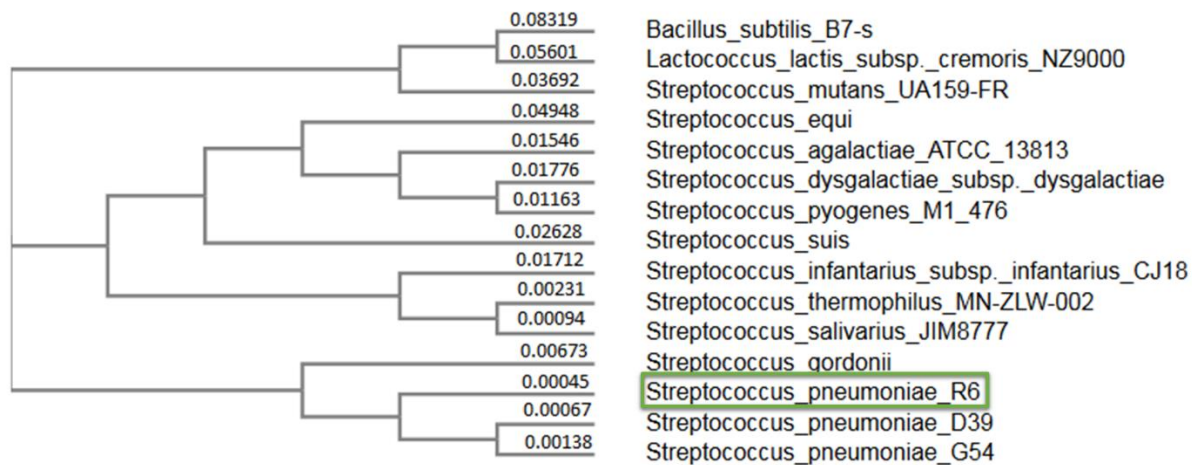
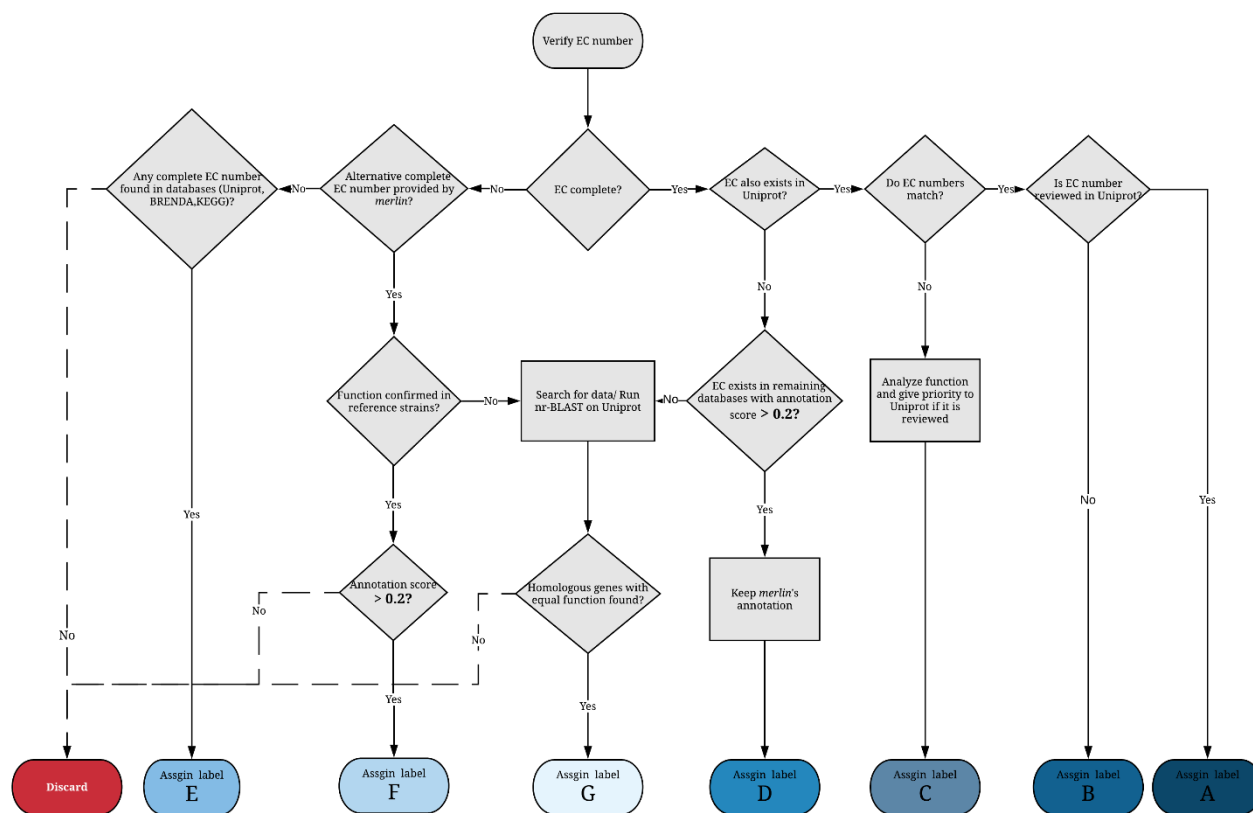


## Supplementary Material

### 1 Supplementary Figures



**Supplementary Figure 1.** Phylogenetic tree of *Streptococcus pneumoniae* relative organisms. This tree was built using EMBL-EBI Clustal OMEGA multiple sequence alignment tool (Sievers et al., 2011). Numbers above each line represent the branch lengths to each node generated automatically by the tool using the Neighbor-joining method (Saitou and Nei, 1987).



**Supplementary Figure 2.** Re-annotation workflow for model iDS372.