Construction and Comparative Analysis of Two-Component System and Metabolic Network Profile based Phylogenetic trees

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In this paper, two-component system gene profile and metabolic network gene profile based phylogenetic trees were constructed, and two trees were compared with each other to estimate the evolutionary relation of bacterial sensing system and metabolism. Gene profiles of TCS and metabolic network suggested that bacteria employed different evolution strategies for optimization of two-component system and metabolic network. Via comparative analysis it was found that TCS based tree showed better family grouping than metabolic network based tree, and this result deduced that TCS and metabolic network have been modified following self-evolution and recruitment models, respectively.
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