Analysis on Thermococcus achaeans with Frequent Pattern Mining

Authors : Jeongyeob Hong, Myeonghoon Park, Taeson Yoon

Abstract : After the advent of Achaeans which utilize different metabolism pathway and contain conspicuously different cellular structure, they have been recognized as possible materials for developing quality of human beings. Among diverse Achaeans, in this paper, we compared 16s RNA Sequences of four different species of Thermococcus: Achaeans genus specialized in sulfur-dealing metabolism. Four Species, Barophilus, Kodakarensis, Hydrothermalis, and Onnurineus, live near the hydrothermal vent that emits extreme amount of sulfur and heat. By comparing ribosomal sequences of aforementioned four species, we found similarities in their sequences and expressed protein, enabling us to expect that certain ribosomal sequence or proteins are vital for their survival. Apriori algorithms and Decision Tree were used. for comparison.