

Abstract

Bacterial population during 3.2 billion years of early earth was responsible for modifying the greenhouse gas concentration in the early earth. Here we studied the primitive facultative anaerobe *E.coli* K12, known to contain pathways of mixed acid fermentation in stressed oxygen deficient environment. We carried out chamber experiments where bacteria were grown in M9 minimal media containing 0.4% glucose in crimp sealed chambers for a period of 7 days-12 days. Growth rate for the bacteria were monitored using optical density measurements and CFU values on LB agar. $\delta^{13}C$ of CO₂ was analysed using Gas Bench peripheral connected with IRMS MAT 253. We observed an approximate enrichment of 3‰ in the $\delta^{13}C$ data of respired CO₂ from the 1st day of incubation till 12 days of incubation under stressed conditions. We suggest that enrichment in $\delta^{13}C$ captured a shift in the carbon source from glucose to acetate.