

Effect of trace metals on *Clostridium autoethanogenum* culture

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Bioenergy has been developed as an alternative energy source for fossil. Recently, bioconversion processes using acetogenic microorganisms, which can produce biofuels or biochemicals from synthesis gas or waste gas containing carbon monoxide have been widely studied. From the results of previous studies, it was found that trace metals have an important role for metalloenzymes, such as ADH, FDH and AOR, in the metabolic process of acetogenic microorganisms. Therefore, the optimization of trace metals in the medium is important to improve microbial growth and biofuel productivity in acetogenic microbial culture processes.

In this study, *Clostridium autoethanogenum* is used a strain that produces bioethanol and acetic acid from syngas substrate. The effect of trace metals (zinc, tungsten, selenium) concentration in the culture medium on microbial growth and the production of bioethanol and acetic acid were investigated.