

Bioethanol and formic acid production from *Laminaria japonica* using *Serratia* sp. JMP1

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Marine biomass has been focused as a promising feedstock for biorefinery. In order to enhance the production of biorefinery process with bio-derived compounds from macroalgae, screening suitable microorganisms capable of utilizing macroalgae as carbon sources should be preceded. *Laminaria japonica*, one of the most plentiful brown algae in Korea, could be a great resource for biorefinery due to its high growth rate and carbohydrate contents. Mannitol is one of major carbohydrates obtained from *L. japonica* however most traditional fermenting microorganisms cannot utilize it. In this study, the fermenting ability using mannitol by *Serratia* sp. JMP1, isolated from the gut of turban shell, was investigated. Mannitol was proved as more favorable carbon source than glucose for ethanol production by *Serratia* sp. JMP1. In addition, increasing in pH and substrate concentration brought escalation of both formic acid and ethanol production. Especially, accumulated formic acid at high pH condition can be a prominent source to the MFC system.