

Anodic Electro fermentation Facilitated Biochemical production by *P. putida* 2523 in Microbial fuel cell

Sakuntala Mutyala, 김중래[†], 김창만, 송영은
부산대학교

Pseudomonas putida strain has been highlighted as a host cell for microbial production of a range of amphiphilic and aromatic biochemical. *P. putida* is also known as electro-active in a microbial fuel cell system to produce electricity, which indicates that electron transportation via outer membrane is feasible. Thus this strain is an ideal host for metabolic engineering for platform chemical production using electro based metabolic regulation. In this study, we have examined the metabolic shift of *P. putida* in different culture condition such as conventional fermentation and electrode respiring environment. The cell growth of *P. putida* was facilitated by electrode with simultaneous electricity generation and changes of by-product formation. This strain during electro-fermentation discharged current up to 500 mA/cm² anodic current density and few metabolites acetate, lactate. Metabolite concentrations and glucose concentration were measured by using HPLC. These results implicate that metabolically engineered *P. putida* can provide a platform for BES based bio refinery process with further metabolic engineering and optimization.