Conversion of glycerol to bioelectricity by co-culture microbial fuel cell using *Klebsiella pneumonia* J2B and *Shewanella oneidensis* MR-1

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Conversion of glycerol is the interesting topics in bioenergy world. Electricity generations in microbial fuel cells (MFCs) are conducted for waste transformation to valuable energy. Well-known exoelectrogens cannot consume glycerol, so little attempts to generate electricity from glycerol were reported. In this study, we applied co-culture MFC systems in electricity generation from glycerol using *Klebsiella pneumoniae* J2B and *Shewanella oneidensis* MR-1. *K. pneumoniae* J2B played a role for glycerol converser to lactate, *S. oneidensis* MR-1 consumed lactate and transferred electron to electrode. Co-culture MFC generated higher current (~ 25 mA/m2) compared to pure-culture MFCs. Microbial community analysis presented < 30 % of bacteria was composed *S. oneidensis* MR-1 in glycerol only-fed conditions on electrode. Metabolite analysis showed acid byproducts were consumed only in co-culture MFC. The study implied that current generation from glycerol is possible using co-culture MFC systems.