

Metabolite production change of *Klebsiella pneumoniae* L17 in microbial fuel cell

김중래[†], 김창만, Satish Kumar Ainala, 전병훈¹, 박성훈
부산대학교; ¹한양대학교
(j.kim@pusan.ac.kr[†])

Electron transfer from microbe to electrode is a primary respiratory pathway in microbial fuel cells (MFCs) for electricity generation. Although various researches revealed electron transfer mechanisms, the effect of electron excretion on intracellular metabolic flux is little known. In this study, we tried to investigate metabolic flux change in *K.pneumoniae* L17 in MFC as compared to non-MFC condition. Significantly less production of reductive metabolites (lactate, 2,3-butanediol, ethanol and hydrogen) were found in MFC fermentation. Metabolic flux analysis supported that intracellular metabolic flux in MFC fermentation was significantly altered. Estimation of electron balance also indicated that the excreted electron to electrode is about 30 % portion. Intracellular metabolic flux of *K.pneumoniae* L17 in MFC fermentation was altered comparable to microaerobic fermentation.