Domestication of *Clostridium* sp. AWRP towards a Platform Strain for Syngas Fermentation

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Synthesis gas (Syngas) fermentation has been attracting attention since it can be prepared by gasification of various materials that can be directly utilized by microbes. Previously, we isolated a novel alcohologenic acetogen *Clostridium* sp. AWRP at Ansan. This bacterium is able to produce ethanol and 2,3-butanediol from either CO or CO_2 plus H_2, but as stated above, engineering this species had been hampered as well by recalcitrance against DNA transformation and non-optimized culture conditions. In this study, we introduce a recent progress in domestication of the AWRP strain: establishment of a genetic toolbox and improvement of culture conditions. In the first part, we discuss construction of *Clostridium-E. coli* shuttle plasmids and protocols of their transfer to the AWRP strain. The second part consists of modifications of culture medium, focusing on effects of trace elements and gas transfer. [This research was supported by C1 Gas Refinery Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science and ICT (2015M3D3A1A01064884)]