Construction of gene knockdown system using a modified small regulatory RNA system in *Clostridium acetobutylicum*

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Clostridium are getting more attraction as hosts in biorefineries, due to their suitability for producing a variety of chemicals. Following the development of methods for introduction of plasmid DNA, several clostridial metabolic engineering tools have been established. Since previous methods are used for only single target gene at a time, metabolic engineering tool for multiple gene targets are needed in clostridia. Here we describe a new metabolic engineering tool for controlling the expression of multiple genes by applying an *Escherichia coli* synthetic sRNA system. By applying this system, we demonstrate enhanced chemical production in *C. acetobutylicum*, showing its suitability for the development of clostridial biorefinery. [Development of Systems Metabolic Engineering for Biorefineries from the Ministry of Science, ICT and Future Planning (MSIP) through the National Research Foundation (NRF) of Korea (NRF-2012-C1AAA001-2012M1A2A2026556); and the Advanced Biomass R&D Center (ABC) of Global Frontier Project funded by the Ministry of Science, ICT and Future Planning (ABC-2010-0029799).]