

High-level L-valine production by systematically engineered *Escherichia coli* W

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A less frequently employed *Escherichia coli* strain W, yet possessing useful metabolic characteristics such as less acetic acid production and high L-valine tolerance, was metabolically engineered for the production of L-valine. The engineered *E. coli* W (Δ ilvA Δ ilvA) strain overexpressing the ilvBNmut, ilvCED, ygaZH and lrp genes was able to produce an impressively high concentration of 60.7 g/L L-valine by fed-batch culture in 29.5 h, resulting in a high volumetric productivity of 2.06 g/L/h. The results obtained in this study suggest that *E. coli* W can be a good alternative to *Corynebacterium glutamicum* and *E. coli* K-12, which have so far been the most efficient L-valine producer. Furthermore, it is expected that various bioproducts including other amino acids might be more efficiently produced by this revisited platform strain of *E. coli*. [This work was supported by the Advanced Biomass R&D Center (ABC) of Global Frontier Project funded by the Ministry of Education, Science and Technology. Further supports by the World Class University Program (R32-2008-000-10142-0) of the MEST were appreciated.]