# *Escherichia coli* W as a New Platform Strain for the High Titer of L-Valine by Systems Metabolic Engineering

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E.coli W strain, which has high L-valine tolerance and produces byproducts such as acetic acid and pyruvic acid at low level, was metabolically engineered for the production of L-valine. The ilvA gene was deleted to eliminate the formation of 2-ketobutyrate, the intermediate precursor of L-isoleucine biosynthesis competing with L-valine biosynthesis. The ilvBNmut genes encoding feedback-resistant acetohydroxy acid synthase and the L-valine biosynthetic ilvCED genes encoding acetohydroxy acid isomeroreductase, dihydroxy acid dehydratase, and branched chain amino acid aminotransferase, respectively were amplified by plasmid-based overexpression. The final engineered WLA (pKBRilv BNmutCED, pTrc184ygaZHlrp) strain was able to produce 60.7g/L L-valine by fed-batch culture in 29.5h, resulting in a high volumetric productivity of 2.06g/L/h. [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.]