

Additional file 3-The intracellular oxidation-reduction level was affected by expressing heterologous NADH oxidase in *Klebsiella pneumoniae* in the fed-batch fermentation

Heterologous expression of NADH oxidase in *K. pneumoniae* led to a lower level of NADH pool and a higher level of NAD⁺ pool compared with the parent strain during the fed-batch fermentation process. The difference of the NADH/NAD⁺ ratio between the parent and the recombinant strain was thus observed.

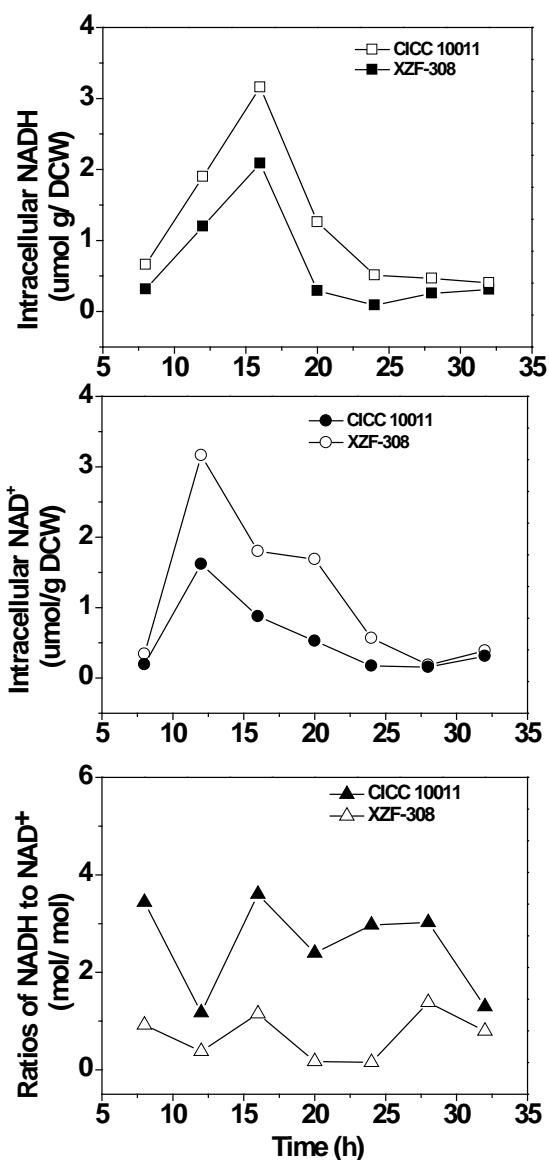


Figure S3. Effects of the NAD⁺ regeneration system introduced into *K. pneumoniae* on the concentrations of intracellular NADH, NAD⁺, and NADH/NAD⁺ ratio in fed-batch fermentation. CICC 10011: the parent strain; XZF-308: the recombinant strain.