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Deliverable D2.7

Butanol and octanol producing strains using phosphite as single source of P



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Publishable Summary

A specific phosphite (Pt) metabolic pathway was successfully introduced into *Synechocystis* making it Pt-dependent. The engineered strain is able to grow on both BG11 and BG11-Pt media while the control strain can only grow in BG11 medium. The engineered strain showed a comparable growth rate in BG11-Pt medium as the control strain in BG-11 medium. Furthermore, it achieved a comparable 1-butanol titer as the control strain which indicates that the two different forms of P utilization make no difference on 1-butanol productivity. When a similar strategy was applied to the 1-octanol producing strain, no functional transformants could be isolated. In summary, generating a Pt-dependent *Synechocystis* strain is an effective approach to reduce the risk of contamination when cultivating *Synechocystis* in larger, including open, growth systems.