Huang Miao et. al., J Microb Biochem Technol 2016, 8:5(Suppl)
http://dx.doi.org/10.4172/1948-5948.C1.022

Development of cost-effective fermentation media for biobutanol production from lignocellulosic biomass

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Biobutanol as biofuel is superior to bioethanol as it can be used wholly in petrol engines and does not require any modification to the existing infrastructure for its transport and distribution. Biobutanol from lignocellulosic feedstock is an environmentally sustainable solution to energy crisis as it is renewable and does not compete with the world's increasing population for food. Various types of lignocellulosic biomass have been studied for biobutanol production. In all these studies, pre-treatment is an essential step to disrupt the highly-ordered cellulose structure and the lignin-carbohydrate complex and ultimately hydrolyze cellulose and hemicellulose to simple sugars. Unfortunately, this process increases the entire cost of lignocellulosic biobutanol production. In this study, a cost-effective fermentation media was developed for biobutanol production using *Clostridium beijerinckii* strains. This optimized fermentation media were prepared with less energy input and no supplementation of extra carbon source or expensive nitrogen source to reduce cost for large scale industrial applications. The developed media could support satisfactory microbial growth without concentration or detoxification procedures. Knowledge shared in this study will also be beneficial for the lignocellulosic bio-refinery industry overall.

Biography

Huang Miao has completed her PhD from School of Biological Science, Nanyang Technological University (NTU) in Singapore and Postdoctoral studies from School of Civil and Environmental Engineering in NTU. She is currently a Research Scientist in Temasek Polytechnic, Singapore. She is interested in industrial and environmental microbiology, where the various microorganisms with their unique genetic makeup play important roles.

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