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Biomanufacturing of liquid fuel molecules

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Stichococcus bacillaris strain siva2011 (UTEX 3000) is a green microalga which can be used in energy sectors by producing useful lipids and hydrocarbons for liquid fuels. For instance, it biosynthesizes a high degree of unsaturated fatty acids: methyl hexadecatrienoic acid ($C_{16:3}$), oleic acid ($C_{18:1}$), linoleic acid ($C_{18:2}$), and linolenic acid ($C_{18:3}$); the predominant saturated fatty acid is palmitic acid ($C_{16:0}$). In addition, siva2011 accumulates the three hydrocarbons n-nonadecane ($C_{19}H_{40}$), nonacosane ($C_{29}H_{60}$), and heptadecane ($C_{17}H_{36}$), as well as two free fatty acids, $C_{16:0}$ and $C_{18:3}$. We will present the biomanufacturing data of these liquid fuel molecules in the balloon type bioreactor.

Biography

Biography Sivakumar's research is primarily focused on biotech implications and applications of high-value natural products. He has extensively studied the plant-based small molecules pathway biochemistry, synthetic biology and metabolic & bioprocess engineering. He is internationally recognized in the field of biopharmaceuticals and a pioneer in industrial-scale production of bioactive molecules. He has over 40 publications. He is also on the editorial board of several journals. He serves as an expert of grant proposals as well as numerous scientific journals. His laboratory focuses on metabolic and bioprocess engineering of colchicine pathway and developing potential anticancer medicine. In addition, his group is interested in developing biofuels to address energy and environmental problems

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