Fatty acid production of tropical thraustochytrids from Malaysian mangroves

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Introduction


Thraustochytrids have a wide geographical distribution, stretching from the tropical to the polar regions. They inhabit neritic and oceanic water columns, and in the sediments of mangroves, estuaries and the deep sea (Raghukumar 2002, Atienza et al. 2012), they are associated with plant debris such as fallen mangrove leaves (Leaño et al. 2003).

Thraustochytrids are characterised by fast growth rate and high biomass and lipid production. Aurantiochytrium and Schizochytrium species were found to be good producers of biomass and fatty acids (Liu et al. 2014). Many fatty acids produced by thraustochytrids, both saturated and unsaturated, have potential applications in the biofuel industry, including saturated fatty acids (SFAs), palmitic acid (C16:0) and monounsaturated fatty acids (MUFAs), oleic acid (C18:1), and the low carbon fatty acids (LCFAs) myristic acid (C14:0) and pentadecylic acid (C15:0) (Lee Chang et al. 2012).