

## Variations in growth and fatty acid composition of Mangrove-isolated *Chlorella* strains / Siti Mariam Osman, Chuah Tse Seng, Loh Saw Hong, Cha Thye San, Aziz Ahmad

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### Abstrak

Marine microalgae are among the flora that inhabits the mangrove area. They play an important role as the primary source of organic carbon in marine food web. However, very limited study on the mangrove-isolated microalgae, especially on the fatty acids. The objective of the current study was to determine the fatty acid composition in mangrove-isolated *Chlorella* strains. Seven mangrove-isolated *Chlorella* strains were cultured in F and F/2 media. Their growth and fatty acid composition were measured after the stationary growth phase. Results showed the growth varied among the strains. the cell density, cell biomass and fatty acid composition were influenced by the medium-strength. polyunsaturated fatty acids (PUFAs) were detected in only four strains, the KS-MA1, KS- MA2, KS-MB2 and SE-MB1. the highest amount of PUFAs was obtained in the KS-MA2 ( $40.9 \pm 0.8$  % dry wt. in the F/2 medium and  $35.4 \pm 6.7$  % dry wt. in the F medium) and in the KS-MB2 ( $37.6 \pm 3.4$  % dry wt. in the F/2 medium and  $34.4 \pm 4.8$  % dry wt. in the F medium). the growth and productivity of *Chlorella* species were strains-dependent and regulated by the medium strength. thus, the production of fatty acids of interest from *Chlorella* might be manipulated by optimizing the culture conditions.