

## LIPID BIOSYNTHESIS OF TEN *Thraustochytrid* STRAINS ISOLATED FROM MANGROVE XUAN THUY, NAM DINH

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### SUMMARY

The features of polyunsaturated fatty acid-PUFA structures were corresponded to each separate functions as adjusting the cellular physiology and gene expression. Therefore, lack of PUFA could lead to abnormalities in skin, kidney, neural networks, immune responses and inflammation; cardiovascular, endocrine, respiratory and reproductive systems. In fish oil, PUFA content were low, thus it was difficult to produce on a large scale. Therefore, the exploration of PUFA sources particularly as arachidonic acid-AA, eicosapentaenoic acid EPA, docosapentaenoic acid-DPA/DHA attracted many researches. Heterotrophic microalgae *Thraustochytrids* were capable of producing high amounts of DHA and PUFA composition varied. DHA can be synthesized by the metabolism of AA, EPA and DPA. The different types of PUFA reflected relationships in classification. Ten heterotrophic microalgae *thraustochytrids* isolated from mangrove Xuan Thuy, Nam Dinh contain fatty acid composition varied from C12 to C28. Especially, they had two important fatty acids of PUFA as EPA and DPA. Polyunsaturated fatty acids - PUFA content of ten *thraustochytrid* strains were from 28.95 to 49.62% total lipid. DPA compared to other PUFA were high for all *thraustochytrid* strains studied, accounting 20.22 to 39.35% TFA. Ten *thraustochytrid* strains had the highest growth with carbon source as glucose, total lipid reached 7 to 12.35 % dry weight biomass after 72 hours. Growth rate and lipid biosynthesis in organic nitrogen source were higher than in inorganic nitrogen sources. The best source of nitrogen for growth and lipid biosynthesis of ten *thraustochytrid* strains is yeast extract, total lipid were 8.57 to 18.87% dry weight biomass after 72 hours.

**Keywords:** *fatty acid, lipid, Xuanthuy mangrove, thraustochytrids, marine heterotrophic*

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