

## Temperature Dependency of Polyunsaturated Fatty Acids Production from *Thraustochytrium aureum* BK1

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The genus *Thraustochytrium* have been well known to be a strain produce various kinds of polyunsaturated fatty acids(PuFAs) including commercially valuable ecosahehexanoic acid(EPA) and docosahexaenoic acid(DHA), and is expected as a microbial source for DHA production. In this study, we investigated the effect of culture condition, especially temperature, on the cell growth and PuFAs contents of *Thraustochytrium aureum* BK1. Along with the analyses of final product DHA, the influences of cultivation temperature on rather short-chain fatty acids (plamitic, oleic, linolenic acid and EPA) were also investigated in detail. When the cultivation temperature were changed from 4 to 39 °C, the cell growth was found to be negligible or not detected at 4, 11, 39 °C. At cultivation temperatures of 18, 24 and 32 °C, the final cell mass increased as the cultivation temperature increased, while the total lipid and DHA contents were somewhat decreased. In all cases of lower cultivation temperature, linolenic acid content was reversely correlated with the contents of long-chain PuFAs EPA and DHA. These correlated changes supported a link between depriving of shorter unsaturated fatty acids and increase in long-chain PuFAs upon an exposure of a stress factor cold shock.

### References

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