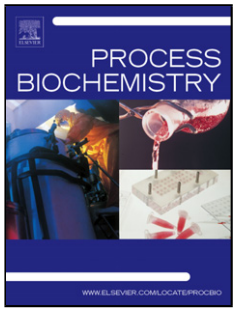

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Overexpression of endogenous delta-6 fatty acid desaturase gene enhances eicosapentaenoic acid accumulation in *Phaeodactylum tricornutum*

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Highlights

- Overexpression of endogenous D6 desaturase gene increased markedly their EPA content
- Overexpression of endogenous D6 desaturase gene resulted in increase in total lipids
- D6 desaturase is a key enzyme for EPA biosynthesis
- Overexpression of endogenous *Δ6D* is a valid way to improve EPA production in microalgae

ABSTRACT

The effect of overexpression of endogenous delta-6 fatty acid desaturase gene (*ER<DELTA>6FAD*) on eicosapentaenoic acid (EPA) production and total lipid content was investigated in *Phaeodactylum tricornutum*. All three randomly selected transformants exhibited significant increase (47.66 %) in their EPA content, which reached up to 38.101