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## Improvement of nutrition production by protoplast fusion techniques in *Chlorella vulgaris*

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Recent decades shows remarkable development of the biotechnology of microalgae. Valuable product for food, nutrition and other applications will extend into broader area. Natural nutrition productions from micro-algae are not yet competitive with their synthetic levels. *Chlorella* is widely used as a health food and feed supplement, as well as in the pharmaceutical and cosmetics industries. Protoplast fusion was found to be an efficient method in improving its nutrition production and diversification in *Chlorella vulgaris*. The research was carried out by application of protoplast fusion on interspecific microalgae of *C. vulgaris*. The fusant was subjected for analysis of nutrition content by GCMS methods on *C. vulgaris* powder from 100 L liquid cultivation of fusant. The research result gained fusant in high mass production level. Nutrition analysis of fusant showed 17 amino acid with high concentration glutamic acid (14495.52 ppm) followed by leucine (10856.97 ppm) and Aspartic acid (10378 ppm). Palmitic acid (1.59%) was showed highest concentration in its lipid acid profile. Lipid analysis also showed polyunsaturated fatty acids (PUFA) with concentration 1.0987% and DHA 0.2%. Surprisingly, the fusant also revealed Omega 9 instead of Omega 3 and Omega 6. The research result showed potential acquisition of improvement nutrition by protoplast fusion application on microalgae.

### Biography

Hermin Pancasakti Kusumaningrum has completed her PhD from Gadjah Mada University. She is working as an Associate Professor of Biology department. She has published more than 10 papers in reputed journals in Indonesia and overseas.

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