Study on Preparation of Nutrient-fortified *Pleurochrysis carterae* (Uptake and Physiological Function of Vitamin B12 in *Pleurochrysis carterae*)

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Summary

The photosynthetic coccolithophoid alga, *Pleurochrysis* (*Hymenomonas*) *carterae*, could take up and accumulate exogenous vitamin B_{12}, most of which was converted into the coenzyme forms of vitamin B_{12}. Two vitamin B_{12}-dependent enzyme activities (methylmalonyl-CoA mutase, 2.6±0.4 nmol/min/mg protein and methionine synthase, 85.1 ±38.9 pmol/min/mg protein) could be found in a cell homogenate of the vitamin B_{12}-supplemented alga. Most of the methylmalonyl-CoA mutase activity and 19.2% of the vitamin B_{12} accumulated by the algal cells were recovered in the macromolecular fractions with M_r of 150 kDa, although the remaining vitamin B_{12} was found only in free vitamin B_{12} fractions.