

Study on Preparation of Nutrient-fortified *Spirulina plantensis*
(Inactive Vitamin B₁₂-Compound Significantly Decreases in *Spirulina platensis* Grown in a
Cobalt-Deficient Medium)

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Summary

Spirulina platensis NIES-39 was grown under open culture system in the presence or absence of CoSO₄(12 µg/L) and/or vitamin B₁₂(10 µg/L) to confirm whether CoSO₄ and/or vitamin B₁₂ stimulate or are essential for growth of the algal cells and for accumulation of vitamin B₁₂-compound. The addition of CoSO₄ and/or vitamin B₁₂ could not affect both cell growth and cell yield of the alga.

The amount of vitamin B₁₂-compound in the algal cells was determined. The amount of B₁₂-compound was increased significantly by the addition of CoSO₄, but not by vitamin B₁₂. A C18 reversed-phase HPLC pattern of the *Spirulina* B₁₂-compound increased by the addition of CoSO₄ was identical to that of authentic pseudovitamin B₁₂, which is inactive for human. These results indicate that the algal cells grown in the absence of CoSO₄ are suitable for use of human health foods because the inactive vitamin B₁₂-compound can be reduced significantly.