

The Effects of Cu, Fe and Vitamin B group on the Growth and Toxicity of *Alexandrium minutum*

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Abstract

Paralytic shellfish poisoning (PSP) associated with food poisoning incidents have caused two human fatalities and many illnesses in Taiwan. The source of PSP in Taiwan was thought to be the toxic dinoflagellate *Alexandrium minutum*. To understand the Cu, Fe and vitamin B group in walne medium for cell growth and toxin production of *A. minutum*, the different concentration of copper and iron ion, and vitamin B group were added into the walne medium of *A. minutum*. It was found that the optimal trace elements for those of *A. minutum* were as follows : copper ion (Cu^{2+}) 5.0 ppb, ferric ion (Fe^{3+}) 270 ppb, and vitamin B₁ 200 ppb and vitamin B₁₂ 10 ppb. The toxic components of *A. minutum* were assayed by high performance liquid chromatography (HPLC), and found to contain gonyautoxin (GTX)₁₋₄ only. Among these components, GTX₁ and GTX₄ were predominate components.

Keywords: trace elements, *Alexandrium minutum*, paralytic shellfish poison, toxicity

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