

## **Micropropagation and protein profile analysis by SDS-PAGE of *Gracilaria changii* (Rhodophyta, Solieriaceae)**

### **Abstract**

*Gracilaria changii* seaweed is primarily important as a source of agar with wide applications in food industries. The high demand of agar led to gradual depletion of *G. changii* in natural resources. Establishment of in vitro culture of *G. changii* has an important role and allowing *G. changii* explants to grow optimally under controlled conditions to provide constant, continuous and sufficient seedlings supply for *Gracilaria* farming. This study focused on micropropagation culture of *G. changii* in which different exogenous factors influencing seaweed growth were investigated: strength of chosen medium Provasoli's enriched seawater (PES), types and concentration of fertilizers/biostimulant, supplementation of plant growth regulators and seawater salinity. The results were presented in daily growth rate of explants and data analysis was carried out using one-way ANOVA. The results demonstrated high growth rate of *G. changii* in 25% of PES supplemented with 5 mg L<sup>-1</sup> AMPEP, and seawater salinity range between 30 and 40 ppt, respectively. Protein profiles of tissue-cultured and farm cultivated *G. changii* were produced by sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE). The results demonstrated no remarkable difference in the protein profiles and indicated the suitability of the culture condition for the growth of *G. changii*.