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RESEARCH ARTICLE

Effects of solar UV radiation on germination of conchospores and morphogenesis of sporelings in *Porphyra haitanensis* (Rhodophyta)

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Abstract The effects of ultraviolet radiation (UVR 280–400 nm) on the germination of *Porphyra haitanensis* conchospores and on the growth and morphogenesis of the subsequent sporelings were investigated by culturing the released conchospores under natural sunlight from 29 September to 6 October 2005. Germination increased with time and was faster when UV-B was excluded using cut-off filters. There were significant negative effects of UV-B radiation on growth and cell division of sporelings, with decreases up to 18% for thallus length, between 6 and 18% for thallus width, up to 29% for thallus area, and between 6 and 14% for cell size as compared to PAR-controls. UV-A had a significant positive effect on morphogenesis, enhancing the formation of sporelings with cells dividing transversely; on the other hand, UV-B delayed the formation of such sporelings. We also tested the effects of solar UVR on the growth of *P. haitanensis* juveniles and found no significant effects. Our results indicate that UV-A has an important role in the germination and morphogenesis of the species, but on the other hand, sporelings of *P. haitanensis* are more sensitive to UV-B radiation than juveniles.

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