

Temperature dependency of skeletal growth and compositions of temperate *Acropora* coral species around Japan

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Temperature dependence on skeletal compositions of temperate coral species including *Acropora muricata*, and *A. solitaryensis* were examined using cultured specimens grown at thermostated tanks. Temperature dependences of oxygen isotope ratios of branch tips with relatively higher growth rate were ~ 0.16 permil $^{\circ}\text{C}^{-1}$, which is comparable to reported values for *Porites* corals. Their Sr/Ca ratio showed relatively lower temperature dependency (-0.03 mmol mol⁻¹ $^{\circ}\text{C}^{-1}$) compared to reported values for *Porites* sp. (typically -0.06 mmol mol⁻¹ $^{\circ}\text{C}^{-1}$). Growth rate effect on variations of chemical components, especially oxygen isotope ratio, in coral skeleton has been concerned for *Porites* corals. Although the similar trend was found for *Acropora* corals, oxygen isotope ratio and Sr/Ca ratio of branches of temperate *Acropora* sp. corals with relatively higher growth rate could be a useful proxy as sea surface temperature.