

BPT002-P02

会場:コンベンションホール

時間:5月25日 14:00-16:30

飼育サンゴ骨格の成長量とそのCa²⁺-ATPase発現の変動に関する研究 Variation of expression of Ca²⁺-ATPase and skeletal growth of cultured corals (*Porites australiensis*)

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Trace elements, such as Sr/Ca and Mg/Ca ratios, of coral skeleton is a commonly used for reconstructing paleoenvironment, especially it has been used to estimate past sea surface temperatures. However the processes controlling trace elements incorporation in coral aragonite are poorly understood and recently it has been reported that skeletal growth might be altered variation of trace element rather than temperature. In zooxanthellate corals, Ca²⁺ is transported transcellularly to the calcification site by both calcium channels and by the carrier protein Ca²⁺-ATPase. The pump enzyme Ca²⁺-ATPase has a higher affinity for Ca²⁺ than for Sr²⁺, and the Ca²⁺-ATPase pump is activated by exposure of the polyp to light, suggesting that the skeletal Sr/Ca of rapid calcifiers might be lower than that of slow calcifiers because of differences in the Sr/Ca ratio in the bulk calcifying solution. However, there has been no study investigating the relationship between Ca²⁺-ATPase and Sr/Ca and Mg/Ca in the skeleton of *Porites* coral which is dominantly used for the study on paleoclimate. In this study, *Porites australiensis* were cultured under controlled temperature and pH settings and expression level of Ca²⁺-ATPase in each cultured corals was estimated. Also Sr/Ca and Mg/Ca ratios in the same coral colony were analyzed. We will discuss the relationship between skeletal growth rate and expression of Ca²⁺-ATPase.

Keywords: coral skeleton, Ca²⁺-ATPase, growth rate, culture