

**Proof****CONTROL ID:** 3447507**PRESENTER:** Mitsuru Jimbo**PRESENTER (EMAIL ONLY):** mjinbo@kitasato-u.ac.jp**PRESENTER (COUNTRY ONLY):** Japan**CURRENT SYMPOSIA:** The science of marine natural products: Towards understanding of the physiology and ecology of marine life [084]**CURRENT SUBJECT AREA:** Biological**SESSION TYPE:** Oral - Virtual**Abstract****TITLE:** GlcNAc-binding lectin attract and select symbiotic dinoflagellates for a coral *Acropora tenuis* to acquire them**ABSTRACT BODY:**

Abstract Body: Corals often symbiose with symbiotic dinoflagellates belonging to Symbiodiniaceae. Symbiosis with Symbiodiniaceae was essential for coral survival since corals mainly obtained carbohydrates from photosynthates produced by Symbiodiniaceae. Symbiodiniaceae contains several genera, and each coral species acquired few genera of Symbiodiniaceae from surrounding environment. Larval polyps of a coral *Acropora tenuis* also acquire some of Symbiodiniaceae genera, and did not others. Since the corals acquired Symbiodiniaceae by recognising the carbohydrates on the cell surface, lectins, or carbohydrate binding proteins, should participate in the acquisition of Symbiodiniaceae. We examine the hypothesis using *A. tenuis* polyps with a symbiont strain NBRC102920. Since the acquisition of NBRC102920 by polyps was inhibited by *N*-acetyl-glucosamine (GlcNAc), a GlcNAc-binding lectin, ActL, was purified. The anti-ActL antibody inhibited acquisition of NBRC102920, suggesting that ActL was involved in the acquisition of NBRC102920. ActL distributed in nematocyst, and attracted NBRC102920 by changing the motion of the symbiont NBRC102920 from circular motion to linear motion. Moreover, the number of attraction of cells by ActL was different according to Symbiodiniaceae strains, and Symbiodiniaceae strains that were attracted more by ActL tends to be acquired more by polyps. These suggested that ActL participate in acquisition and selection of the Symbiodiniaceae by coral polyps.

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