Transcriptome study of scleractinian coral *Alveopora japonia*

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Abstract
The colonial stony coral *Alveopora japonica* is a zooxanthellate scleractinian coral in the family Acroporidae. The natural habitat of this uncommon species is also highly likely to be reduced by a combination of factors, including coral removal and harvesting for the curio trade, for display in aquaria. Jeju Island is located in the southwest of the Korean peninsula (33°24′N, 126°32′E) and is characterized by a warm temperate climate, an effect of the Kuroshio Current, which circulates from the tropical Philippines to subtropical Taiwan and into the temperate region of Japan. Because the KC is rapidly warming, some reef-building corals may expand their habitats northward in response to increasing temperatures, although the Jeju Island coast does not have an appropriate environment for coral reef formation. This species may benefit from the recent increase in seawater temperature, and may shift from a kelp-forest habitat to a coral-dominated habitat, disrupting *the* competitive interactions among benthic taxa around Jeju Island. The transcriptome was sequenced with the Illumina HiSeq 2000 Sequencing System. A total of 31,921,488 read pairs (100 bp) in the FASTQ format were produced and the short-read dataset has been deposited in GenBank. This procedure extracted 5,949,582,694 bp from 30,449,429 read. *De novo* assembly was performed with Trinity v2.3.2, and 347,748 contigs were generated. Contigs, including candidate coding regions, were identified with TransDecoder v4.1.0, and highly similar sequences (with a global sequence identity threshold of 95%) were clustered with cdhit-est v4.6.7. The genes most similar to many *A. japonica* coding sequences were from other marine invertebrates, such as *Acropora digitifera* (stony coral; 26.5%), *Orbicella faveolata* (stony coral; 15.37%), *Amphimedon queenslandica* (sponge; 14.89%), and *Stylophora pistillata* (stony coral; 9.58%).
Keywords— *Alveopora japonica* , soft coral, de novo sequencing, transcriptome

Professional Biography
Seonock Woo has completed his PhD from Yonsei University and postdoctoral studies from UC Berkeley, USA. She is a Professor and principal research scientist in KIOST, South Korea. She has published more than 60 papers in reputed journals and has been working as a member of coral working group in PICES

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