Talking Planimlas! Identifying Genes Associated with Coral Bioacoustics

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Communication is vital for all organisms to grow and exchange information, regardless organizational level of the organism. There are a growing number of studies that describe the different ways trees communicate and the importance of communication in the livelihood of a forest. Because corals make up the ‘rainforests of the sea’, this ecosystem is believed to be highly dependent on communication to grow and survive. Many organisms that live in coral reefs, including coral larvae, perceive and are guided by sound when trying to find their way to coral reefs. Considering these preliminary observations, possible genes related to the reception and/or emission of sound were tested to determine its presence in the coral species Cyphastrea. Some of the possible genes are present in organisms very similar to corals, such as Nematostella and fresh-water polyps, while others are seen in plants, bats, and whales. The possible genes tested include WAKL2, OTOF, FOLH1, and TRPV. Primers were developed for these genes which were later amplified via PCR with extracted Cyphastrea coral DNA. Agarose gels were utilized to test for the presence of these genes. The first results suggest non-specific amplification occurred during PCR amplification. Further trials were conducted with several procedure changes to minimize non-specific amplification. With these results, faint bands are seen in FOLH 1, WAKL 2, and TRPV although they are not the correct base-pair length. This suggests two possibilities, the gene is present but is a different length in corals than in other species or a non-specific amplification.

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