Corals through the light: phylogenetics, functional diversity and adaptive strategies of coral-symbiont associations over a large depth range

Rodrigues Frade, P.

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REFERENCES


BOEHNLEIN JM, SANTIAGO-VAZQUEZ LZ, KERR RG (2005) Diterpene biosynthesis by the dinoflagellate symbiont of the Caribbean gorgonian Pseudopterogorgia bipinnata. Marine Ecology-Progress Series 303:105-111


BROWN BE, DOWNS CA, DUNNE RP, GIBB SW (2002a) Preliminary evidence for tissue retraction as a factor in photoprotection of corals incapable of xanthophyll cycling. Journal of...
Experimental Marine Biology and Ecology 277:129-144


BURRIS RH (1983) Uptake and assimilation of $^{15}$NH$_4^+$ by a variety of corals. Marine Biology 75:151-155


DARWIN CR (1859) On the origin of species by means of natural selection, or the preservation of...


**Donoghue MJ** (1985) A critique of the biological species concept and recommendations for a phylogenetic alternative. The Bryologist 88:172-181


REFERENCES


EXCOFFIER L, LAVAL G, SCHNEIDER S (2005) ARLEQUIN ver. 3.0: An integrated software package for population genetics data analysis. Evolutionary Bioinformatics Online 1:47-50


FITT WK, COOK CB (2001) The effects of feeding or addition of dissolved inorganic nutrients in maintaining the symbiosis between dinoflagellates and a tropical marine cnidarian. Marine Biology 139:507-517


FRADE PR, ENGLEBERT N, FARIA J, VISser PM, BAK RPM (2008a) Distribution and photobiology of Symbiodinium types in different light environments for three colour morphs of the coral Madracis pharensis: is there more to it than total irradiance? Coral Reefs 27:913-925


FRADE PR, DE JONGH F, VERMEULEN F, VAN BLEIJSWJK J, BAK RPM (2008c) Variation in symbiont distribution between closely related coral species over large depth ranges. Molecular Ecology 17:691-703


FUKAMI H, BUDD AF, LEVITAN DR, JARA J, KERSANACH R, KNOWLTON N (2004a) Geographic differences in species boundaries among members of the Montastraea annularis complex based on
molecular and morphological markers. Evolution 58:324-337


fluorescence rise kinetics. Photosynthesis Research 82: 59-72


IGLESIAS-PRIETO R, TRENCH RK (1997b) Acclimation and adaptation to irradiance in symbiotic dinoflagellates. II. Response of chlorophyll-protein complexes to different photon-flux
densities. Marine Biology 130:23-33


KAWAGUTI S (1944) On the physiology of reef corals VII. Zooxanthella of the reef coral is Gymnodinium sp., Dinoflagellata; its culture in vitro. Palao Tropical Biological Station Studies 2:675-679


LAJEUNESSE TC (2005) "Species" radiations of symbiotic dinoflagellates in the Atlantic and Indo-Pacific since the Miocene-Pliocene transition. Molecular Biology and Evolution 22:570-581

LAJEUNESSE TC, TRENCH RK (2000) Biogeography of two species of Symbiodinium (Freudenthal) inhabiting the intertidal sea anemone Anthopleura elegantissima (Brandt). Biological

LAJEUNESSE TC, LAMBERT G, ANDERSEN RA, COFFROTH MA, GALBRAITH DW (2005) Symbiodinium (Pyrrhophyta) genome sizes (DNA content) are smallest among dinoflagellates. Journal of Phycology 41:880-886


LEICHER JJ, WING SR, MILLER SL, DENNY MW (1996) Pulsed delivery of subthermocline water to Conch Reef (Florida Keys) by internal tidal bores. Limnology and Oceanography 41:1490-1501


REFERENCES


MARQUEZ LM, VAN OPPER MJH, WILLIS BL, MILLER DJ (2002a) Sympatric populations of the highly cross-fertile coral species *Acropora hyacinthus* and *Acropora cytherea* are genetically distinct. Proceedings of the Royal Society of London Series B-Biological Sciences 269:1289-1294


MILLER KJ, AYRE DJ (2008b) Population structure is not a simple function of reproductive mode and


MYERS RM, FISCHER SG, LERMAN LS, MANIATIS T (1985a) Nearly all single base substitutions in DNA fragments joined to a GC-clamp can be detected by denaturing gradient gel-electrophoresis. Nucleic Acids Research 13:3131-3145


ODORICO DM, MILLER DJ (1997) Variation in the ribosomal internal transcribed spacers and 5.8S rDNA among five species of Acropora (Cnidaria; Scleractinia): Patterns of variation consistent with reticulate evolution. Molecular Biology and Evolution 14:465-473


PRASAD KVSK, SARADHI PP (2004) Enhanced tolerance to photoinhibition in transgenic plants through targeting of glycinebetaine biosynthesis into the chloroplasts. Plant Science 166:1197-1212


of the Workshop “Understanding the stress response of corals and *Symbiodinium* in a rapidly changing environment”, UNAM, Mexico


**Santos SR, Coffroth MA** (2003) Molecular genetic evidence that dinoflagellates belonging to the genus *Symbiodinium* Freudenthal are haploid. *Biological Bulletin* 204:10-20


THORNHILL DJ, KEMP DW, BRUNS BU, FITT WK, SCHMIDT GW (2008) Correspondence between cold tolerance and temperate biogeography in a Western Atlantic *Symbiodinium* (Dinophyta) lineage. Journal of Phycology 44:1126-1135


VAN OPPEN MJH, WILLIS BL, MILLER DJ (1999) Atypically low rate of cytochrome b evolution in the scleractinian coral genus \textit{Acropora}. Proceedings of the Royal Society of London Series B-Biological Sciences 266:179-183


VAN OPPEN MJH, WILLIS BL, VAN VUGT HWJ, MILLER DJ (2000) Examination of species boundaries in the \textit{Acropora cervicornis} group (Scleractinia, Cnidaria) using nuclear DNA sequence analyses. Molecular Ecology 9:1363-1373

VAN OPPEN MJH, PALSTRA FP, PIQUET AMT, MILLER DJ (2001a) Patterns of coral-dinoflagellate associations in \textit{Acropora}: Significance of local availability and physiology of \textit{Symbiodinium} strains and host-symbiont selectivity. Proceedings of the Royal Society of London Series B-Biological Sciences 268:1759-1767

VAN OPPEN MJH, MCDONALD BJ, WILLIS B, MILLER DJ (2001b) The evolutionary history of the coral genus \textit{Acropora} (Scleractinia, Cnidaria) based on a mitochondrial and a nuclear marker: Reticulation, incomplete lineage sorting, or morphological convergence? Molecular Biology and Evolution 18:1315-1329


VAN VEGHEL MLJ, BAK RPM (1993) Intraspecific variation of a dominant Caribbean reef building


VERMEIJ MJA, SAMPAYO E, BROKER K, BAK RPM (2003b) Variation in planulae release of closely related coral species. Marine Ecology-Progress Series 247:75-84


VERMEIJ MJA, FRADE PR, JACINTO RIR, DEBROT AO, BAK RPM (2007b) Habitat-related differences in population structure are associated with coral reproductive mode: A comparison between fringing reef and inland bay coral communities. Marine Ecology-Progress Series 351:91-102


WArNER ME, FITT WK, SCHMIDT GW (1996) The effects of elevated temperatures on the photosynthetic


WILLIS BL, BABCOCK RC, HARRISON PL, WALLACE CC (1997) Experimental hybridization and breeding incompatibilities within the mating systems of mass spawning reef corals. Coral Reefs 16:S53-S65


WRIGHT S (1965) The Interpretation of population-structure by F-statistics with special regard to systems of mating. Evolution 19:395-420


