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# Algal Symbiosis A Continuum Of Interaction Strategies

**algal symbiosis: a mathematical analysis - researchgate** - p. hallock: algal symbiosis: a mathematical analysis input to the host (ih). the rest of the organically bound energy is used in respiration (rh, lh) by the host

**coral host cells acidify symbiotic algal microenvironment ...** - surrounding the algal cells when the symbiosis is intact and is therefore most likely found in the host-derived symbiosome membrane. this is the first study, to our knowledge, to directly localize a proton pump in cnidarians, and the presence of vha in the host-derived symbiosome membrane suggests that it is involved in transporting protons into the symbiosome lumen, and may therefore be ...

**study of cnidarian-algal symbiosis in the "omics" age** - table 1 chronological list to date of proteomic and genomic studies examining cnidarian-algal symbiosis host organism type host organism genus species

**cofactor symbiosis for enhanced algal growth, biofuel ...** - cofactor symbiosis for enhanced algal growth, biofuel production, and wastewater treatment

brendant.higginsa,ingridgennityb,stephaniesamra b,tobiaskindb,oliverfiehn b ...

**algal ancestor of land plants was preadapted for symbiosis** - algal ancestor of land plants was preadapted for symbiosis pierre-marc delauxa,b,1,2, guru v. radhakrishnanb, dhileepkumar jayaramana,c, jitender cheemab, mathilde ...

**solar-powered sea slugs. mollusc/algal chloroplast ...** - update on symbiosis solar-powered sea slugs. mollusc/algal chloroplast symbiosis1,2 mary e. rumpho\*, elizabeth j. summer, and james r. manhart program in molecular and environmental plant sciences (m.e.r.) and departments of horticultural sciences

**animal-algal symbioses: molecular, physiological and ...** - baker ac (2003) flexibility and specificity in coral-algal symbiosis: diversity, ecology and biogeography of symbiodinium. annu rev ecol evol syst 34:661-689 byler k, carmi-veal m, fine m, goulet tl (2013) multiple symbiont acquisition strategies as an adaptive ...

**final diversity and distribution of algal symbionts ...** - correa ams and baker ac (2009) understanding diversity in coral-algal symbiosis: a cluster-based approach to interpreting fine-scale genetic variation in the genus symbiodinium . coral reefs 28: 81-93.

**manipulating the coral-algal symbiosis - delss** - aims: australia's tropical marine research agency. manipulating the coral-algal symbiosis kate quigley postdoctoral fellow reef recovery, adaptation, restoration

**flexibility and specificity in coral-algal symbiosis ...** - 13 nov 2003 23:7 ar ar200-es34-24.tex ar200-es34-24m latex2e(2002/01/18) p1: gjb flexibility in coral-algal symbiosis 663 this statement remains a valid motivation for research on symbiodinium today.

**fungal and algal gene expression in early developmental ...** - fungal and algal gene expression in early developmental stages of lichen-symbiosis suzanne joneson1 university of idaho, department of biological sciences, a

**stochastic fluid model for the adaptive bleaching hypothesis** - polyp fiction wurm, baird, bean, connolly, helfgott, nguyen fantastic coral coral-algal symbiosis coral bleaching the adaptive bleaching hypothesis a fluid model

**algal symbiosis in flatworms - rd.springer** - algal symbiosis in flatworms 1department of organismic and evolutionary biology harvard university, the biological laboratories 16 divinity avenue, cambridge, ma 02138 usa.

**cell biology of cnidarian-dinoflagellate symbiosis** - symbiosis establishment in cnidarian-dinoflagellate symbiosis. investigators of other endosymbiotic mutualisms describe the establishment of symbiosis as "the winnowing," comprised of a

**algal-fungal mutualism: cell recognition and maintenance ...** - a compatible algal partner or fungal discrimination (b) of the incompatible one by fungal lectins. the enzymes of arginine catabolism are compartmentalized in both symbionts.

**fungal-algal association patterns in lichen symbiosis ...** - fungal-algal association patterns in lichen symbiosis linked to macroclimate garima singh1,2, francesco dal grande2, pradeep k. divakar3,jurgen otte€ 2, ana crespo3 and imke schmitt1,2

**the engine of the reef: photobiology of the coral-algal ...** - roth photobiology of the coral-algal symbiosis figure 2 | schematic of the light environment of the coral-algal symbiosis. (a) irradiance rapidly declines with depth in the ocean.

**unfolding the secrets of coral-algal symbiosis** - original article unfolding the secrets of coral-algal symbiosis nedeljka rosic1, edmund yew siang ling2, chon-kit kenneth chan3, hong ching lee4, paulina kaniewska1,5,davidedwards3,6,7,sophiedove1,8

**early ontogenetic expression of specificity in a cnidarian ...** - ontogeny and using a cnidarian-algal symbiosis with horizontal transmission as a model system, establishes the ontogenetic stage where the specificity displayed in the adult is established. the most common symbionts in cnidarian-algal sym-bioses are dinoflagellates in the genus symbiodinium, which are generally referred to as zooxanthellae. the taxonomic affinity of most zooxanthellae is unclear ...

**modeling the advantages and disadvantages of the coral ...** - ii table of contents list of tables iv list of figures v abstract ix introduction 1 previous models of algal symbiosis 4 hallock (1981) growth model 4

**algal-bacterial symbiosis system treating high-load ...** - water article algal-bacterial symbiosis system treating high-load printing and dyeing wastewater in continuous-flow reactors under natural light chao lin, peng cao \*, xiaolin xu \* and bange ye

**identifying algal symbionts in lichen symbioses** - 295 identifying algal symbionts in lichen symbioses martin grube, lucia muggia abstract — lichens are a ubiquitous terrestrial symbiosis of fungi

**transcriptomics of coral-algal interactions: novel ...** - transcriptomics of coral-algal interactions: novel insights into the establishment of symbiosis a doctoral thesis submitted by amin roushdy mohamed

**bibliometric analysis of algal-bacterial symbiosis in ...** - international journal of environmental research and public health article bibliometric analysis of algal-bacterial symbiosis in wastewater treatment

**journal of plant nutrition, assimilation of ammonia by the ...** - key words: azolla,

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inorganic n, plant algal symbiosis j. w. newton and e. s. selke northern regional research center, agricultural research, science and education administration, u.s. department of agriculture, peoria, illinois 61604 abstract 15n-labeled ammonia was rapidly assimilated by azolla caroliniana and incorporated into plant material even though sustained growth of the fern-algae ... **university of groningen flexibility of the coral-algal ...** - chapter 5 100 introduction the obligate symbiosis between reef-building corals and unicellular algae of the genus symbiodinium, commonly referred to as zooxanthellae, is a key feature of **symbiosis-enhanced gene expression in cnidarian-algal ...** - comparative biochemistry and physiology part a 126 (2000) 33-44 symbiosis-enhanced gene expression in cnidarian-algal associations: cloning and characterization of a cdna, sym32, **algal switching among lichen symbioses** - (algal) trees were generated using the markovian model (harding, 1971) and the maximum number of cospeciation events was estimated between each pair of random host (fungal) and parasite (algal) trees. **gigantism in permian trepostomes from greenland: testing ...** - oxygen isotope values from skeletal carbonate to test the hypothesis that the gigantism was caused by algal symbiosis. in this study, a more precise test of their hypothesis was conducted using a finer sampling **aspects of nitrogen metabolism in symbiotic cnidarians** - an algal plasma membrane and cell wall contained in a host-derived symbiosome membrane. symbiosomes are located within gastrodermal cells encapsulated by host plasma membranes. metabolites must pass through multiple barriers in symbiosis. **acid water interferes with salamandergreen algae symbiosis ...** - algal symbionts have recently been discovered within several a. maculatum tissues—including the epidermis, neural tube, and liver (kerney et al. 2011)—and the algae are also found in the **establishment of coral-algal symbiosis requires attraction ...** - establishment of coral-algal symbiosis requires attraction and selection hiroschi yamashita1\*, go suzuki1, sayaka kai1, takeshi hayashibara1, kazuhiko koike2 **symbiosis constraints: strong mycobiont control limits ...** - algal cells in the thallus and potentially increase the c-gain, the host's capacity to utilize the extra n and c for hyphal growth and expansion might be more dependent on the p supply. **review article evolution of the soritids-symbiodinium ...** - symbiosis involving the dinoflagellates in the genus symbiodinium and numerous marine organisms including representatives of the protista, porifera, cnidaria and **roseobactiodes: small molecule modulators of an algal ...** - algal-bacterial symbiosis mohammad r. seyedsayamdost, † gavin carr, † roberto kolter, ‡ and jon clardy\* ,† † department of biological chemistry and molecular pharmacology, harvard medical school, boston, massachusetts 02115, **change in algal symbiont communities after bleaching, not ...** - coral-algal (symbiodinium spp.) symbiosis exemplifies this dichotomy: the partnership is highly susceptible to 'bleaching' (stress-induced symbiosis breakdown), but stress-tolerant symbionts can also sometimes mitigate bleaching. here, we investigate the role of diverse and mutable symbiotic partnerships in increasing corals' ability to thrive in high temperature conditions. we ... **algal endosymbiosis in brown hydra: host/symbiont specificity** - algal endosymbiosis in brown hydra 275 preparation of aposymbiotic h. magnipapillata one single bud was cut from a dark-grown polyp and verified by light and ultraviolet microscopy **sizing the fungal and algal genomes of the lichen cladonia ...** - symbiosis (2009) 49, 43-51 ©springer science+business media b.v. 2009 issn 0334-5114 sizing the fungal and algal genomes of the lichen cladonia grayi **university of groningen flexibility of the coral-algal ...** - millepora in symbiosis with symbiodinium c1 and d, and one dna sample isolated from a. millepora sperm (which does not contain algal symbionts), were used for initial pcr amplifications. **interactions between hosts and symbionts in algal ...** - most abundant algal/invertebrate symbiosis on earth, and make an important ecological contribution in oligotrophic tropical ocean waters (achituv & dubinsky, 1990). rather less is known about the taxonomic diversity of the algal symbionts, but use of molecular taxonomical techniques have shown that there is a high phyletic diversity within symbiotic dinoflagellates (trench & blank, 1987 ... **didemnid-algal symbioses: host species western pacific ...** - didemnid-algal symbioses: host species in the western pacific with notes on the symbiosis patricia kott queensland museum, gregory terrace **the host transcriptome remains unaltered during the ...** - blackwell publishing ltdthe host transcriptome remains unaltered during the establishment of coral-algal symbioses christian r. voolstra,\* jodi a. schwarz,† julia schnetzer,\* shinichi sunagawa,\* **environment and host identity structure communities of ...** - fungal-algal combinations in the lichen symbiosis. the effect of environmental filtering acting on both symbiotic partners appears to shape the distribution of lichens. introduction abiotic and biotic factors, and their interactions, organize biological communities into nonrandom assemblages of species (thrall et al., 2007). among the abiotic factors, climate is a primary driver governing ... **the establishment of algal/hydra symbioses - a case of ...** - algal/hyd~a symbiosis we~e ca~~ied out by injection of f~ee-living o~ f~eshly isolated symbiotic algae into aposymbiotic hyd~a vi~idis. results showed that the latte~ algae we~e "accepted" by the hyd~a and fo~ the f~ee-living algae it has been ~epo~ted ... **algal-fungal interactions in the marine ecosystem ...** - algal-fungal interactions in the marine ecosystem: symbiosis to parasitism chandralata raghukumar national institute of oceanography dona paula, goa - 403 004, india. a wide array of partnership exists between algae and fungi. these range from loose commensal association between algae and fungi as in primitive lichens, obligate symbiotic association termed mycophycobioses between the systemic ... **nitrogen recycling or nitrogen conservation in an alga ...** - the algal population in a. pulchellawas depleted by cold shock, following the procedure of steen and muscatine (1987). symbiotic animals were

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*maintained at 4°C for 4h, and then **nutrient availability and metabolism affect the stability ...** - algal symbiont density relates to thermal tolerance and should be a focus for future research. phosphorus stabilizes the coral-symbiodiniaceae symbiosis phosphorus has beneficial impacts on coral growth [63] and is integral to the stability of the coral **towards morphological variability of ganisms symbiotic algae** - tic symbiosis1 (figure 1). autotrophic algal symbionts provide not only a significant competitive advantage to the host largely supported by nutrients recycling between the symbiotic partners but the mutualistic association can shift into parasitism under specific conditions2. a symbi-otic process requires certain prerequisites in order to be established and is maintained through interaction ... **chlorophyll a synthesis by an animal using transferred ...** - symbiosis (2009) 49, 121-131 ©springer science+business media b.v. 2009 issn 0334-5114 chlorophyll a synthesis by an animal using transferred algal nuclear*

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