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Biogeosciences Discussions

Interactive comment on "Distribution and host diversity of *Amoebophryidae* parasites across oligotrophic waters of the Mediterranean Sea" *by* R. Siano et al.

Anonymous Referee #2

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General comments

The present study by Siano et al. describes the importance of parasitism of *Amoebophryia* species on dinoflagellates as part of the microbial food webs. For this purpose authors did an exhaustive work counting by FISH these dinospores that belong to the Marine Alveolates group across the Mediterranean Sea. Authors try to find patterns, relating dinospores abundances with total eukaryotes, and with abiotic parameters (temperature, nutrients. . .), as well as their capacity to infect dinoflagellates, looking at stained prepartions under the epifluorescence microscope. Although the study is interesting, I found several uncertainties that need to be clarified before the ms

were suitable for publication. In all stations sampled authors presented the abundance of total eukaryotes and total parasites, then, if dinospores are infecting agents of dinoflagellates why authors do not show the abundance of nanoflagellates and dinoflagellates separately? Furthermore, since some dinoflagellates can ingest the parasite, how authors could be sure that the dinospores observed inside of all dinoflagellates shown in Fig. 3 are infecting it?

Specific comments

Material and Methods

1-Page 7397. In my opinion would be better that the second paragraph of the oceanographic context should be moved to the Results section, under this title, and the first paragraph, included in M&M under a subsection entitled Sampling Site.

2- Page 7397. Since, in the results section authors are relating abundances of dinospores with nutrients, description of the method used in the determination of these variables should be included in M&M

3- Page 7398. Authors filtered from 50 to 200 ml of fixed seawater through 0.22 μm. Although authors are working in an oligotrophic- ultraoligotrophic system 50 ml- 200 ml on 0.22 μm from my experience, could produce an accumulation of bacteria, particles, nanoflagellates, and many other things, that sometimes make difficult to see clear the wanted microorganisms. Perhaps I am wrong but I think it would have been better to use 0.6 μm filters. I also believe that authors could concentrate one or two liters samples to count dinoflagellates, in order to have a better quantitative dinoflagellate abundances

4- page 7398. Samples of dinoflagellates were collected using vertical net. Until which depth were they taken?

Results

Page 7401. Why do you not make relationships between the dinospores and different

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groups of eukaryotes, since they are only infecting dinoflagellates?

Discussion

Page 7404, line 15. When reading the discussion, authors have data on dinoflagellates, and from each group of eukaryotes. This data described in Christaki et al. 2010, correspond to the same cruise? If this is the case, why authors do not include this data in the present study? Here, the use of published data it would be justified because the purpose of the present study is different to the one of the Christaki et al. 2010.

Page 7404, line 20. Authors say: *the presence of other potential hosts of dinospores, overlooked during this study, could explain the high abundances of dinospores recorded at station 27*. My question is: who could be other potential hosts?

Page 7405, lines 21-23. Authors say *that the encounter between dinospores and hosts can be triggered by physical factors and production of attractive allelopatic molecules*. Could authors mention an example from their own experience or buy others, or is only a guess?

Page 7407, lines 10-11. Authors say that they cannot exclude that early stages of dinospores observed inside dinoflagellate simply resulted from the feeding activity of dinoflagellates. This idea is also repeated in page 7408, line 20. Then are you sure that all observed dinospores inside dinoflagellates shown in Fig. 3 are infecting or were eaten?

Technical corrections

In order do not confuse Stations ABC with the way figures are marked, I propose that authors will name all figures with no capital letters as is shown almost always in the text.

The reference Christaki et al in preparation for Biogeosciences Discussion, please check authors. I know that Vaqué is not in there.

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Interactive comment on Biogeosciences Discuss., 7, 7391, 2010.