Interactive comment on “Diversity of cultivated and metabolically active aerobic anoxygenic phototrophic bacteria along an oligotrophic gradient in the Mediterranean Sea” by C. Jeanthon et al.

Anonymous Referee #1

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Title: "Diversity of cultivated and metabolically active aerobic anoxygenic phototrophic bacteria along an oligotrophic gradient in the Mediterranean Sea"
by C. Jeanthon et al.

This manuscript describes the diversity of Aerobic Anoxygenic Phototrophic (AAP) bacteria along an oligotrophic gradient in the Mediterranean Sea in summer 2008 based on AAP cultivation (phylogenetically analysed by 16S rRNA), and molecular pufM mRNA analyses. The pufM transcript were reverse transcribed, cloned and sequenced. This
manuscript is a companion study of Lamy et al. (2011), also submitted to Biogeo-
sciences. The authors isolated 52 AAP strains, phylogenetically affiliated to the Al-
phaproteobacteria. In contrast, most of the pufM clones generated were affiliated to
the Gammaproteobacteria. Highest pufM transcript diversity was detected in the ultra-
oligotrophic eastern basin, which fits well into results of Lamy et al., who detected
highest bacteriochlorophyll concentrations within this area. Finally, the authors high-
light the discrepancy between culture-based and molecular methods, and propose that
this demonstrates the existing gaps in AAP ecology.

General comments:

After all, this study is not ground-braking. Neither the detected discrepancy, nor this
kind of approach is really new. However, it is solid science which contributes some new
insights into AAP distribution and diversity in the Mediterranean Sea and is worth to be
published.

Specific comments:

Material & Methods: Please described in detail from which stations clone libraries were
gained. This is not clear to me only from Fig. 1. What is the meaning of both RNA-
based pufM libraries in Fig. 1?

Fig. 2 and also within the text (4432, line 1): To my knowledge Erythrobacter is an
alpha-4, Roseovarius an alpha-3 proteobacterium, not vice versa. Please check this
and change accordingly.

Page 4437, line 24: Please mention the transcripts which were analysed in these stud-
ies, they differ from pufM.

Technical comments:

Page 4437, line 16: ...BChl-a synthesis... Page 4438, line 29: ... abundance.
Moreover... Table 2: Roseovarius halotolerans
Interactive comment on Biogeosciences Discuss., 8, 4421, 2011.