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Biogeosciences Discussions

Interactive comment on "Ice-nucleation negative fluorescent pseudomonads isolated from Hebridean cloud and rain water produce biosurfactants" *by* H. E. Ahern et al.

H. E. Ahern et al.

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Firstly, thank you for your constructive and informed analysis of our work. We broadly agree with all comments made.

In response to the request for more samples under varied conditions; yes, we indeed would like to analyse more and diverse samples. However this was funded as a pilot study and therefore we were had to limit the study to a few high quality samples. As the reviewer points out the techniques used are very labour intensive. Further, a major part of this work was to develop the methodology (i.e., to identify and overcome the unknown technical problems with these novel and dilute samples).

In response to the comments about the desirability of extra basic information on each

sample, such as cell counts, droplet sizes and chemical analysis (paragraphs 4 & 5), we agree, and intend to obtain these on future samples. However, we used all of each sample for the molecular analyses because our focus was very much upon the development of the molecular methods with dilute samples. Hence we were keen to use the entire available sample to maximise DNA yield. However, we do now appreciate that not providing cell counts, in particular, is an obvious omission. Analysis of droplets and aerosols is beyond our present capabilities but would be useful for future samples. The dominance of the samples by species capable of producing surfactants was a serendipitous finding that arose following culturing. Hence, we wouldn't have tested the bulk samples for surfactant activity but will from now on!

We agree that the suggested title is better and will change it to:

Fluorescent pseudomonads isolated from Hebridean cloud and rain water produce biosurfactants but do not cause ice nucleation

In summary we agree that the study would benefit from more meteorological and chemical analyses and especially a second sampling at another time on the same mountains to confirm or disprove the abundance of Pseudomonads in North Atlantic cloud and rain samples.

Interactive comment on Biogeosciences Discuss., 3, 1561, 2006.