



## ***Interactive comment on “Mini-ribozymes and freezing environment: a new scenario for the early RNA world” by A. V. Vlassov***

### **Anonymous Referee #1**

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Vlassov's paper adds yet another piece of data to the conjecture that very cold or at least intermittently cold environments would have been more conducive to the origin of life. The paper is a fine summary of work on the reactions of RNA in eutectic phases. It should be noted that there are numerous other pieces of evidence which suggest that freezing environments are good locales for prebiotic evolution, including the eutectic synthesis of purines and pyrimidines, template directed synthesis, and the concentration of HCN. Perhaps the only weak link in the chain from primitive atmospheric constituents to self-replicating RNA is the formation of the nucleoside linkages between ribose and purines, which seems to occur only under dry-heating conditions above ~ 60 deg. C. It will be interesting to see whether the whole chain of RNA self-assembly might be mediated in a "one-pot" reaction through drying and freezing cycles.

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Interactive comment on Biogeosciences Discussions, 2, 1719, 2005.