

Interactive comment on “Taking nature into lab: biomineralization by heavy metal resistant streptomycetes in soil” by E. Schütze et al.

Anonymous Referee #1

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General comments:

The manuscript provides valuable new information about the microbe-mediated crystallisation of minerals (biomineralisation) by heavy metal resistant streptomycetes on artificial media and in normal and heavy metal contaminated soil.

The authors claimed that the implications of these findings should be transferred to the formation of minerals in rock and sediment evolution as well as ore deposit formation. However, the author did not provide conceptual or mechanistic suggestions how this transfer can be figured out.

The manuscript is properly written with concise experiments and they are presented in a concise manner. However, the overall manuscript remains very descriptive.

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Some concern is about the high amount of data presented: table 5 and 6 should be simplified or even converted to text. Table A1 should be simplified by using decimal powers and indicating ranges or classes of the SD by footnotes. Summarised amounts should also be presented in a separate line and the metals contributing to the mineralization should be printed bold faced.

For better visibility, the size of the pictures in figure 1 should be increased. In addition, the fact that the microbes are wasting ammonia and phosphate for mineralisation should be discussed in more detail. This process is obviously only occurring under specific conditions in nature, where these nutrients are available in surplus.

Overall, I recommend accepting the manuscript with minor revisions.

Interactive comment on Biogeosciences Discuss., 10, 2345, 2013.

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