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Interactive comment on "Role of extracellular polymeric substances (EPS) from *Pseudomonas putida* strain MnB1 in dissolution of natural rhodochrosite" *by* H. Wang and X. Pan

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In this manuscript, an interesting laboratory study was carried out to investigate role of extracellular polymeric substances (EPS) from P. putida strain MnB1 in enhancing dissolution of natural rhodochrosite. The results showed that EPS were found to play an important role in increasing dissolution of natural rhodochrosite. To my opinion, the study was innovative and the manuscript should be accepted for publication after minor revision. Some of my suggestions are as follows: 1. In the part of introduction in pages 7274 and 7275, this study aimed to investigate the role of EPS in oxidative dissolution of natural rhodochrosite using a Mn oxidizing bacterium. What is the pur-

pose of investigating the effect of EPS on Oxidative dissolution of rhodochrosite? Is it for the resource utilization of Mn or the removal of Mn contaminants? 2. In the part of introduction in pages 7274 and 7275, the author mentioned that “Oxidative dissolution of rhodochrosite leads to produce dissociative Mn(II) and Mn oxides”. What kinds of Mn oxides are formed in the process of the oxidative dissolution of rhodochrosite? And what kinds of Mn oxides were formed through the dissolution of microorganisms? 3. The role of EPS in oxidative dissolution of natural rhodochrosite was investigated using a Mn oxidizing bacterium, Pseudomonas putida MnB1. Dose the bacteria itself have an effect on the oxidative dissolution of natural rhodochrosite? 4. In the part of discussion in page 7281 line 14 to 16, these results suggested that the functional groups of N-H in proteins, C=O in COOH or amide I and C-H or C-O-C in polysaccharides were directly involved in the dissolution of natural rhodochrosite. Why these functional groups are considered to play an important effect on the dissolution of natural rhodochrosite?

Interactive comment on Biogeosciences Discuss., 11, 7273, 2014.