

Interactive comment on “The enigmatic ichnofossil *Tisosa siphonalis* and widespread authigenic seep carbonate formation during the Late Pliensbachian in southern France” by B. van de Schootbrugge et al.

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We thank Aurelien Gay for his positive assessment of our manuscript. The reviewer raises two important points that need further consideration:

1) Analysis of thin sections to determine paragenesis - We have now performed thin section analyses on a new suite of *Tisosa* samples collected during a field trip in 2009 from various localities. Thin section analysis further underlined the great variety in morphologies of the tubular carbonate concretions, however it also brought some sim-

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ilarities to light. The matrix of the concretions is a fine grained micrite that contains some bioclasts. This suggests that the concretions formed by transformation of the original sediment, in this case a calcareous marl with organic matter. The central canals are filled with multiple phases of calcium carbonate minerals. Whereas the later infilling of the canals is mostly coarse spar calcite, cements on the canal walls consists predominantly of bladed calcite and/or aragonite. These preliminary analyses show the very complex diagenetic history of *Tisosa siphonalis*, which is again evidence for an abiogenic formation. These new results will soon be published in a follow-up manuscript.

2) Fluid inclusion composition - This is a very interesting suggestion to analyse fluid inclusions. Not only could fluid inclusions be used to further aid in understanding the diagenetic pathways involved in the formation of the concretions, but they may also be analysed for biomarkers. We are currently in the process of performing organic geochemical analyses to look for seep related biomarkers. At the moment, there is no expertise within our working group to do fluid inclusion analyses, and so we hope to attract attention from interested colleagues.

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