

The following suggestions have been addressed in this revision.

Suggestions for revision or reasons for rejection (will be published if the paper is accepted for final publication)

I consider that the authors have appropriately addressed my comments in the revised manuscript. I would recommend the manuscript for publication provided that the authors improve the English language. Some suggestions (but please do check for other instances which I may have missed):

- line 19: '... and through the terminal ...'
- line 76-81: split long sentence
- line 82: delete 'influencing'.
- line 82-83: '... and the structure of methanogenic communities.'
- line 268-271: split sentence
- line 285: '... in the oil phase of high- ...'
- line 290: cite here also the supplementary figures/tables which summarize the mcrA results
- line 293-294: 'The dominance of methylotrophic methanogenesis is rarely ...'
- line 338: '... most community studies currently available ...'
- line 365 and elsewhere: there is no need to specify 'archaeal' when referring to methanogenic communities.
- line 391-392: remove the reference to infectious diseases, Salmonella and tuberculosis. This cannot have any connections, not even remotely, with the archaeal community coincidence or an erroneous assignment of Tax4Fun and LEfSe. In any case, it has absolutely no relevance for this manuscript.