

The chromatin organization of a chlorarachniophyte nucleomorph genome. Response to reviewer comments #2

Reviewer 2:

The authors have addressed all my concerns adequately, and additional data further support the validity of this interesting study.

We thank the reviewer for the suggestions and comments.

Let me point out one thing: I'd like to suggest the authors to remove the sentence "We note that existing electron microscopy images of the ultrastructural organization of the *B. natans* cells also suggest frequent greater physical proximity between the nucleomorph and mitochondria than between the nucleus and mitochondria" in page 8. The authors provided two TEM pictures of *B. natans* in the response letter. The picture of Hopkins seems to indicate the physical proximity between a mitochondrion and nucleomorphs. In contrast, the Moestrup's picture shows that a mitochondrion (m) is located near the host nucleus (N) rather than the nucleomorph (n). Therefore, I think that the position of mitochondria is unstable in the *B. natans* cell, and the physical proximity of mitochondria and nucleomorph is ambiguous.

We have revised the text accordingly.

In my understanding, elevated Hi-C contacts were observed among mitochondrial, plastid, and nucleomorph genomes. These three genomes exhibit multiple copy numbers and show higher accessibility (based on ATAC-seq) compared with the nuclear genome. Is there a possibility that Hi-C contacts among the three genomes are related to their high accessibility/chromatin state/high copy number?

We had this concern ourselves and thus examined all possible normalization strategies that account for copy number and accessibility, obtaining identical results with all of them (Supplementary Figure 4). Thus it is unlikely that such biases are behind the observed increased contact frequency.

Typo: please change "nucleomoprh" to "nucleomorph" in page 1 (Abstract), page 8 and page 10.

We thank the reviewer for spotting this typo, and have corrected it.