

## Reviewer Report

**Title:** Clonality, inbreeding, and hybridization in two extremotolerant black yeasts

**Version:** Original Submission    **Date:** 5/18/2022

**Reviewer name:** Noah Gettle

### Reviewer Comments to Author:

GostinÄar et al. use short read sequencing to assemble the genomes of >100 strains of two disparate species of black yeast previously shown to be mainly clonal but which contain haploid as well as diploid strains. The authors use the greater number of sequenced strains to better characterize intraspecific differences in ploidy. They estimated low levels of recombination within strains but identify a number of intraspecific hybridization events which led increases in ploidy. Based on the lack of recombined or mixed haplotypes in haploid strains and a relative lack of aneuploids representing a loss of genomic regions, the authors conclude that intraspecific diploid and tetraploid hybrids do not undergo meiosis or chromosomal loss to return to a haploid state but are rather stable.

The results the authors present of stable largely non-recombinant intraspecific hybrids in two different yeast species represent an interesting and novel result that could spark important research into evolutionary losses of sex, speciation, and recombination rates. That said, I do have a couple major and minor concerns.

Major:

1. The methods are missing a description of how ploidy was estimated, the results of which are integral to the conclusions.
2. The authors should be clearer about how they use and what they mean by clonality and asexuality particularly with respect to recombination.

Minor:

1. The use of the term 'hybrid' should be preceded by the descriptor 'intraspecific' for clarity's sake
2. A clearer description of the question/hypotheses being addressed earlier in the introduction would go a long way to improve readability.

## Methods

Are the methods appropriate to the aims of the study, are they well described, and are necessary controls included? Choose an item.

## Conclusions

Are the conclusions adequately supported by the data shown? Choose an item.

## Reporting Standards

Does the manuscript adhere to the journal's guidelines on [minimum standards of reporting](#)? Choose an item.

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### **Statistics**

Are you able to assess all statistics in the manuscript, including the appropriateness of statistical tests used? Choose an item.

### **Quality of Written English**

Please indicate the quality of language in the manuscript: Choose an item.

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