

# Evolutionary capacitance driven by HSP90 during the *de novo* evolution of multicellularity



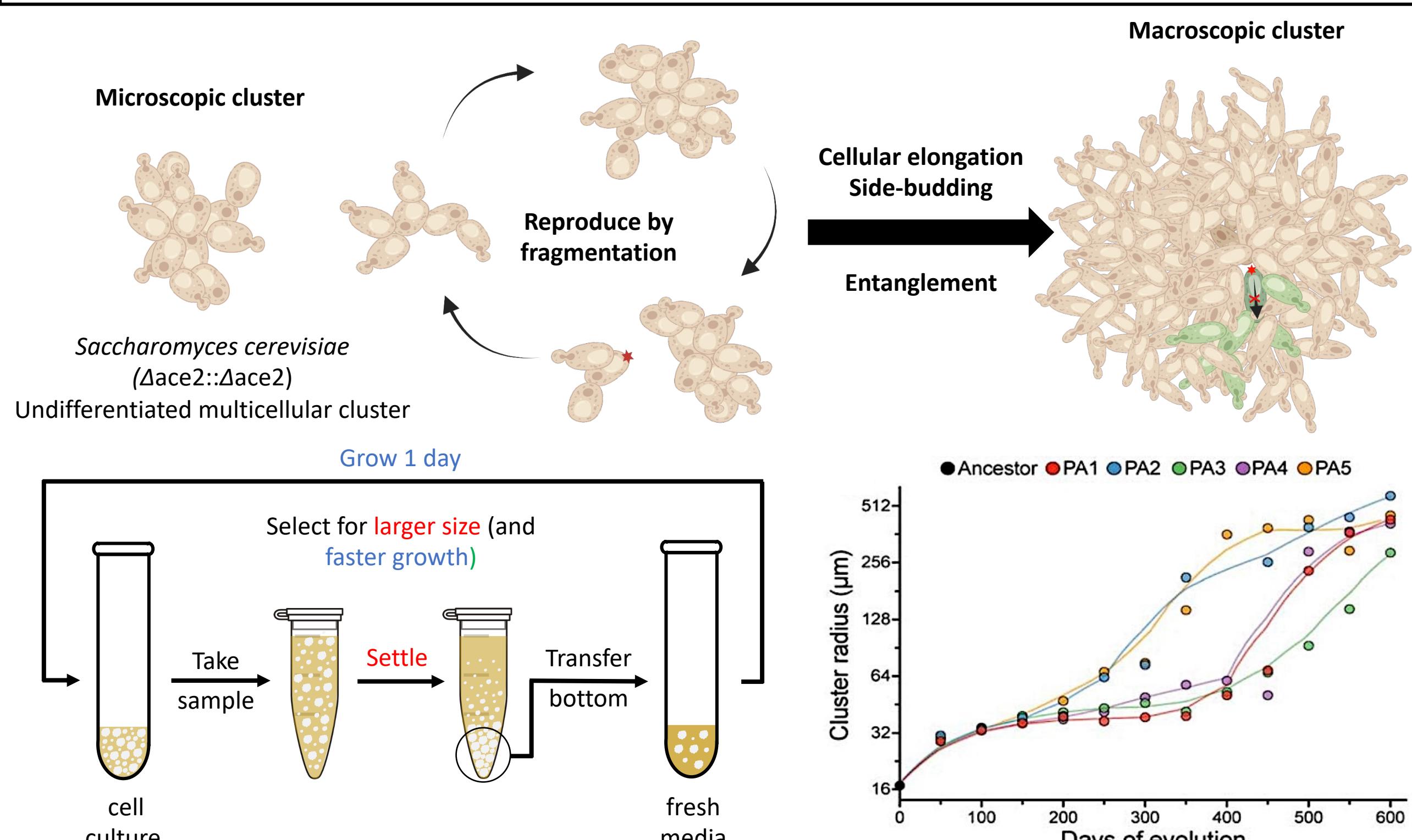
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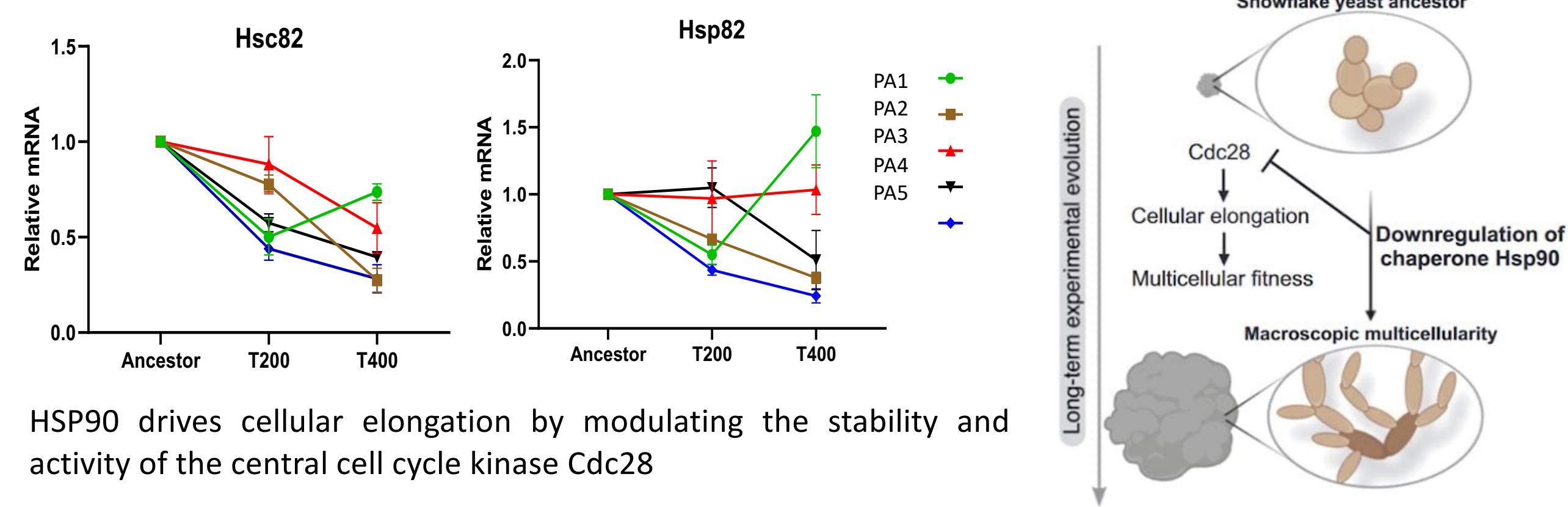
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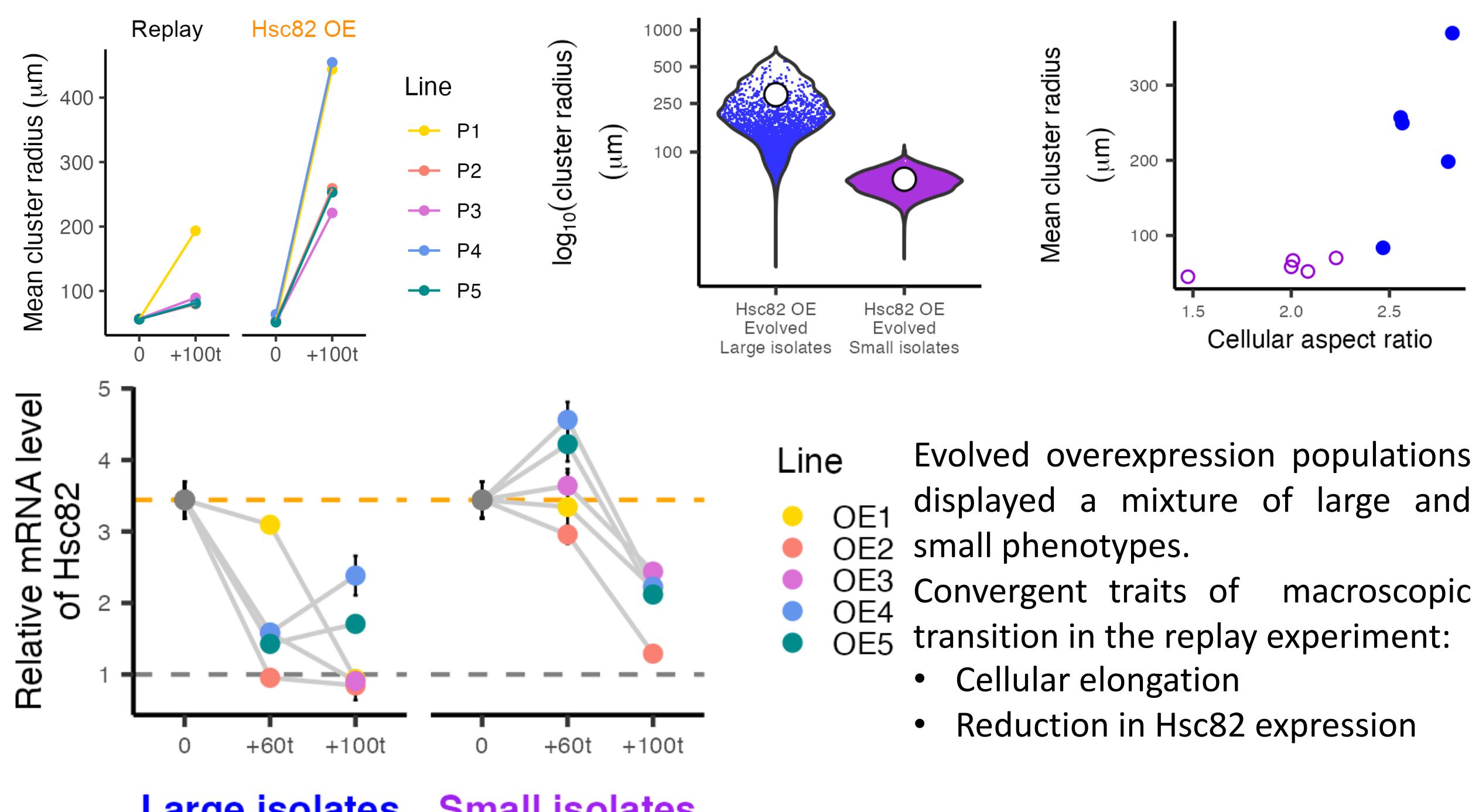
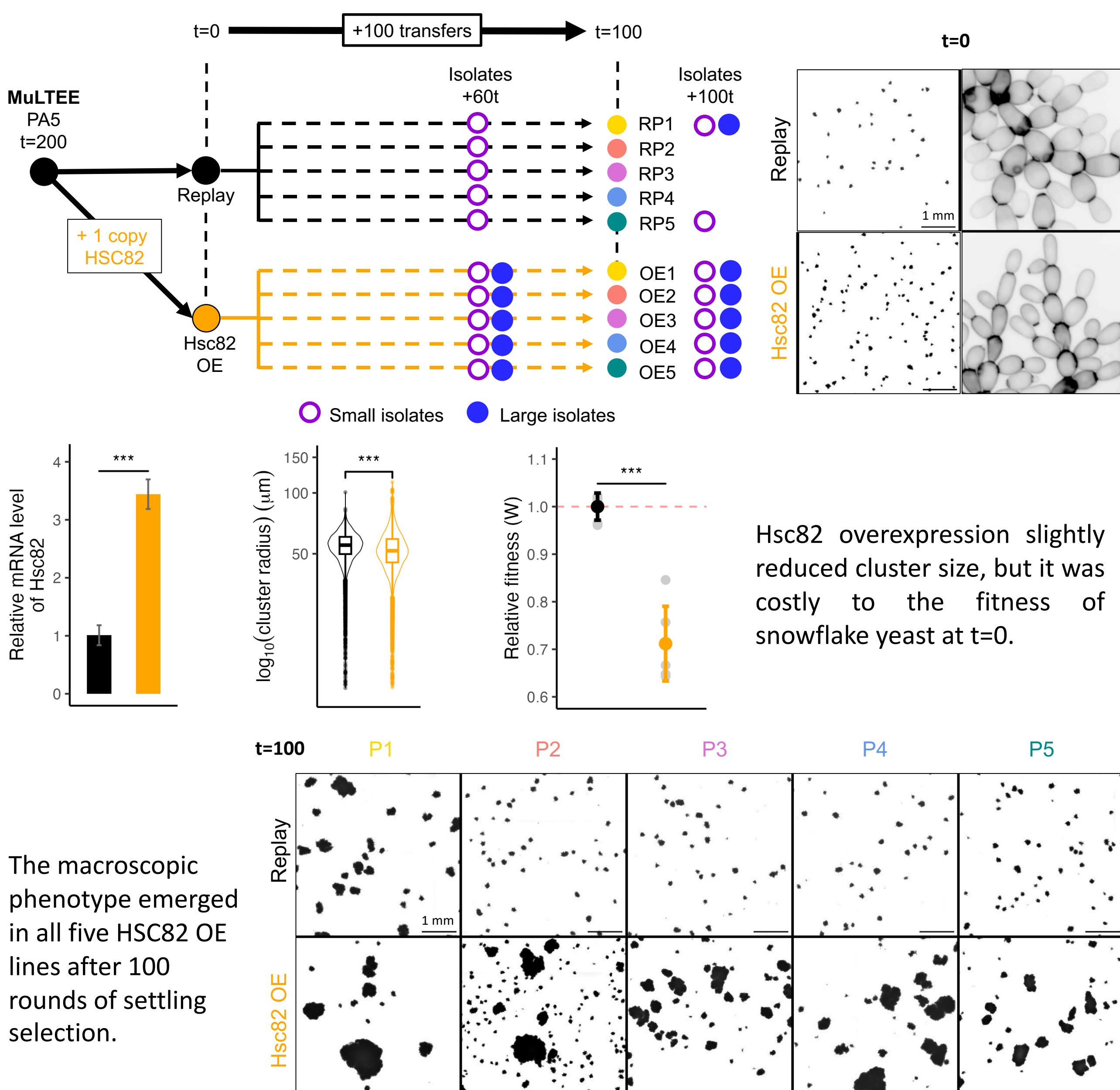
## Multicellularity Long-term Evolution Experiment (MuLTEE)



## The role of HSP90 in MuLTEE macroscopic adaptation



## Will HSP90 play the capacitor role in multicellularity adaptation and transformation?

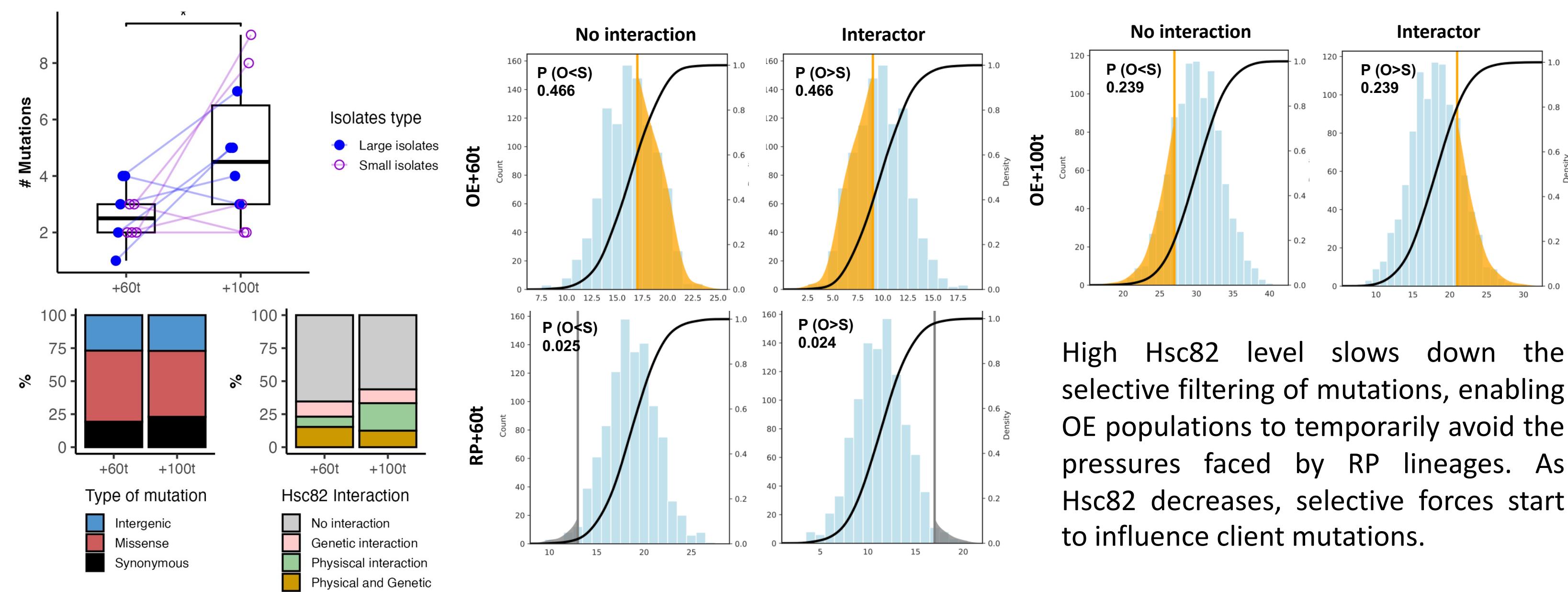


## References:

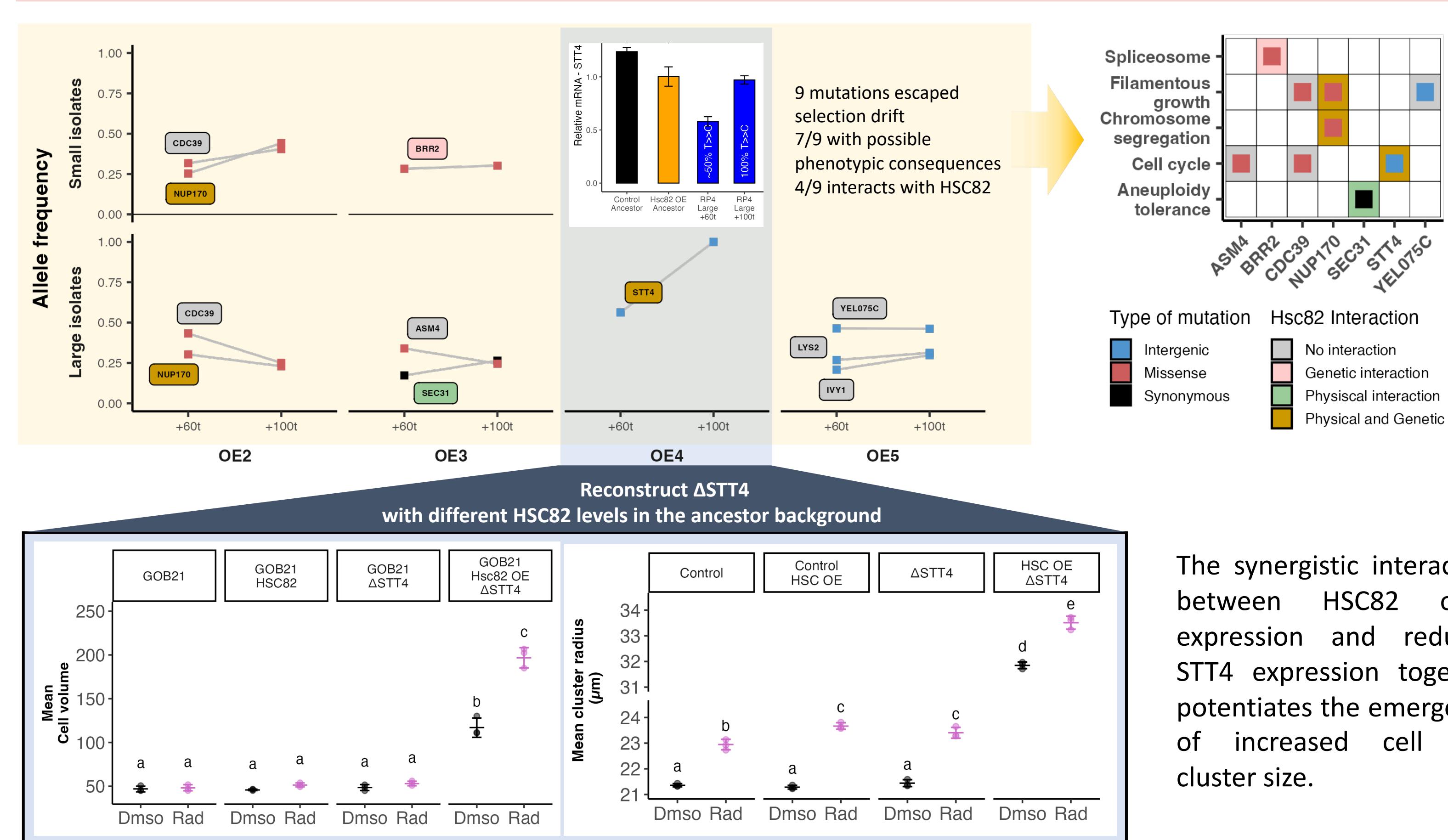
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## HSC82 plays the evolutionary capacitor role and modulates the macroscopic transition in *de novo* multicellular evolution

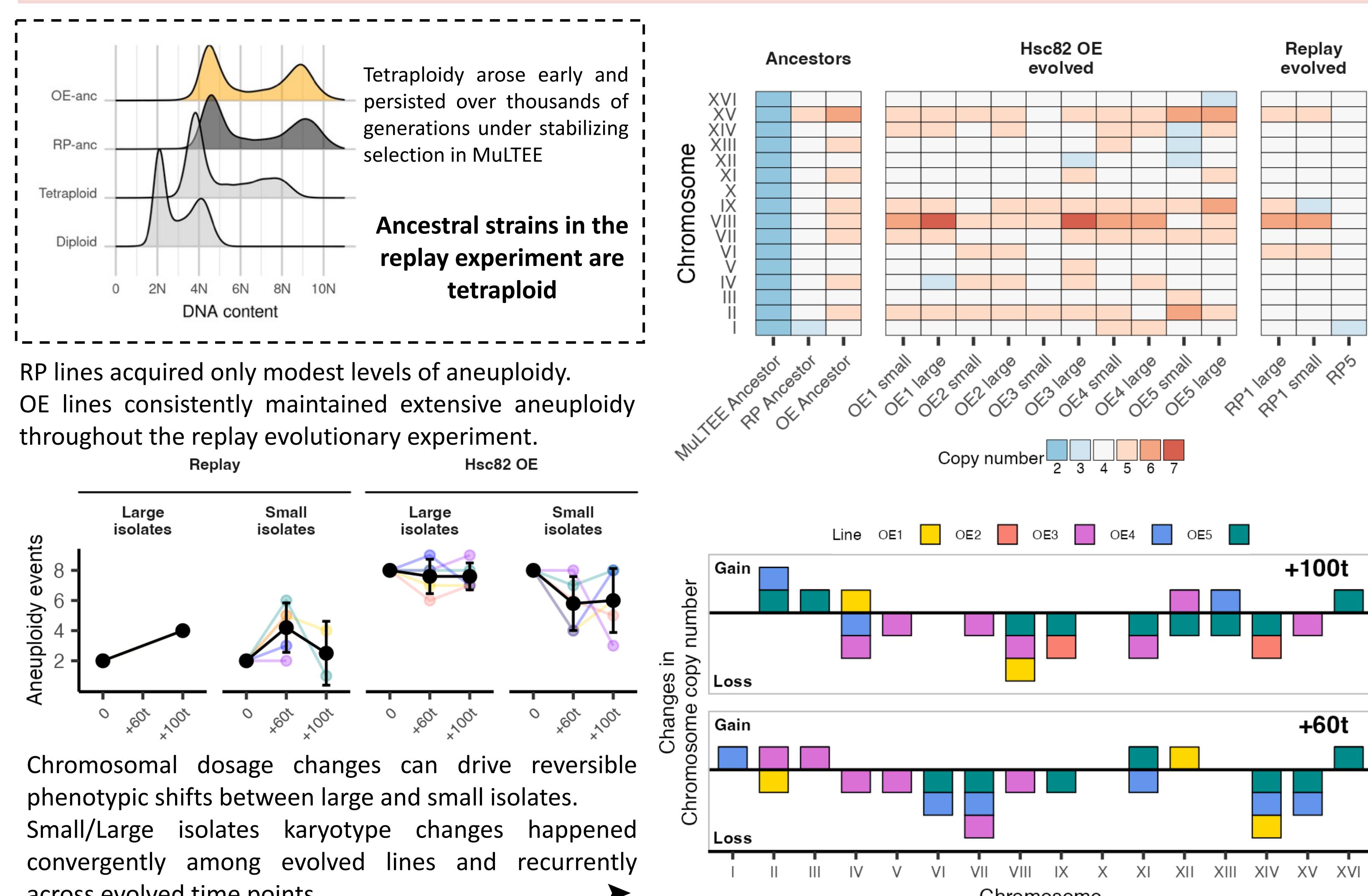
### Hsc82 overexpression buffers and shields mutations from selection



### Hsc82 overexpression potentiates phenotypic changes through epigenetic interactions



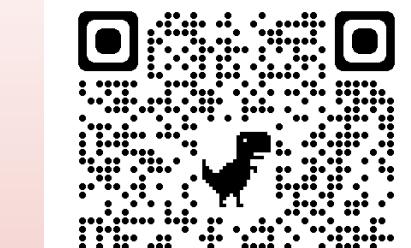
### Hsc82 overexpression modulates phenotypic changes through genetic instability



## Conclusion

- Overexpressing Hsc82 lowers fitness but accelerates the macroscopic transition
- Transient Hsc82 overexpression buffers mutational consequences
- Transient Hsc82 overexpression potentiates macroscopic transition through a synergic effect with lower STT4 expression
- Aneuploidy modulates macroscopic transition

## Acknowledgements



RATCLIFF LAB  
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Let me know if you have any questions or want to discuss more  
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