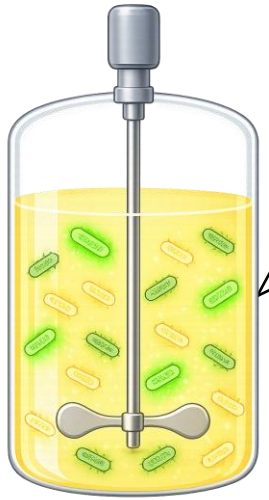
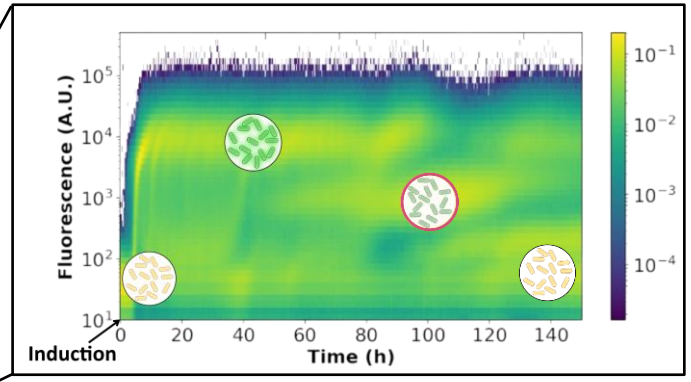
Controlling microbial population instability in continuous cultivation: impact of switching cost and phenotypic escape

Alizée Sloodts[a], Tiphaine Gallet de Saint Aurin[a], Lucas Henrion[a], Laurie Josselin[a], Juan Andres Martinez[a], Samuel Telek[a], Andrew Zicler[a], Frank Delvigne[a,*]
*Corresponding author : F.delvigne@uliege.be

This work is supported by the French Community of Belgium as part of the funding of a FRIA grant.





Mutations

Phenotypic escape

Inducible system with **no impact** on **growth**

Homogeneous culture

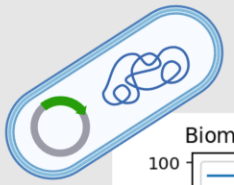
Inducible system with high **impact** on **growth**

Emergence of **subpopulations**
→ **Escape**

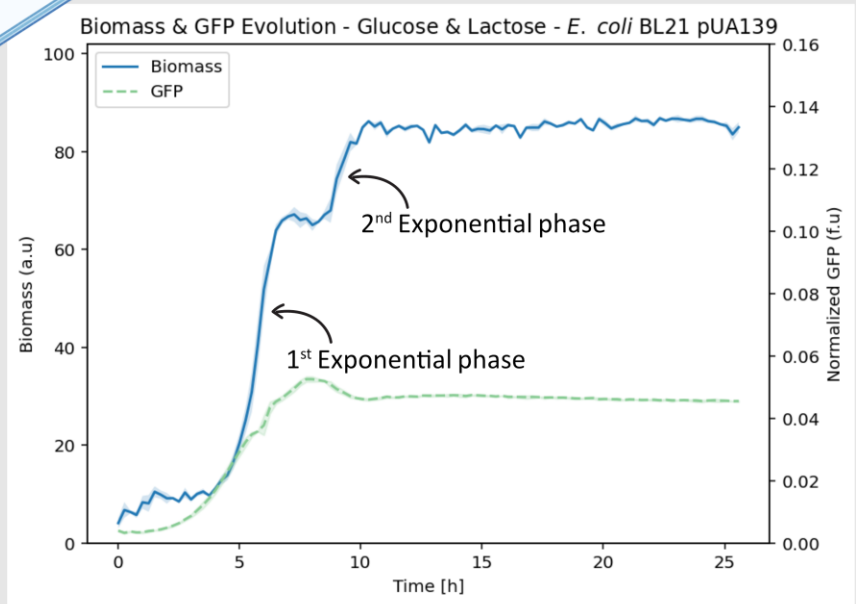
6 RESULTS

COMPARISON OF GROWTH DYNAMICS UPON LOW AND HIGH IMPACTING SYSTEMS

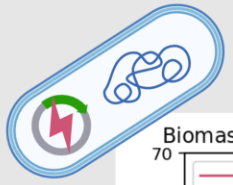
E. coli BL21 and *E. coli* BL21(DE3) on a mix of glucose and lactose



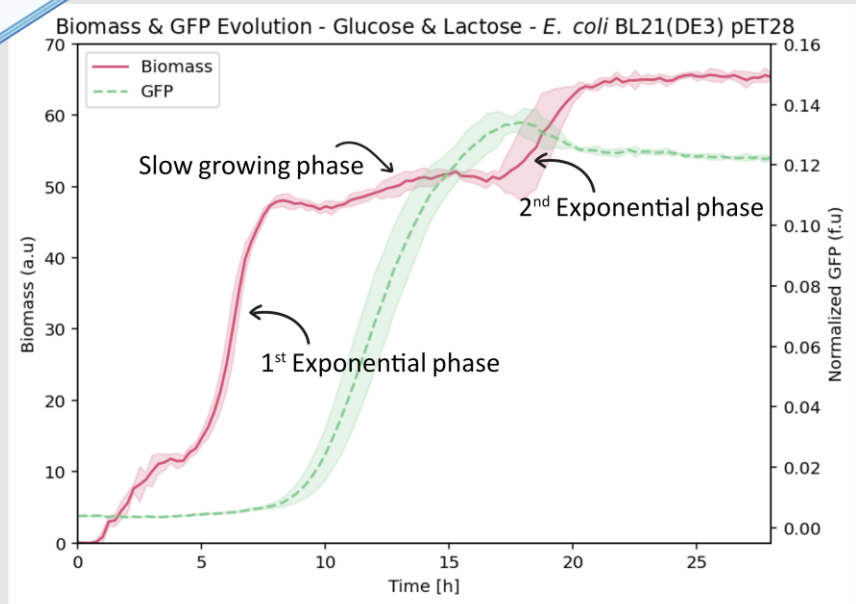
Low growth impacting system



- Classical diauxic growth



High growth impacting system



- Three distinct growing phases