

## Detection of candidate PET-active species in mangrove-derived microbial consortia

Lila Aldakheel <sup>1</sup>, Rubén Díaz-Rúa <sup>2</sup>, Xiang Zhao <sup>2</sup>, Semidán Robaina-Estévez <sup>3,4</sup>, Alexandre S. Rosado <sup>1</sup> #,  
Diego J. Jiménez <sup>1</sup> #

<sup>1</sup> Biological and Environmental Sciences and Engineering Division (BESE), King Abdullah University of Science and Technology (KAUST), 23955-6900, Thuwal, Kingdom of Saudi Arabia.

<sup>2</sup> Core Laboratories, King Abdullah University of Science and Technology (KAUST), 23955-6900, Thuwal, Kingdom of Saudi Arabia.

<sup>3</sup> AI and Computational Biology Division, Ocean BioMetrics Ltd., London, UK.

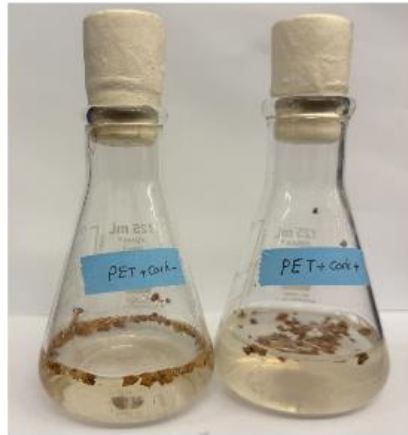
<sup>4</sup> Science Division, NewAtlantis Labs, Inc., City of Wilmington, Delaware, USA

**# Corresponding authors:** DJJ ([diego.jimenezavella@kaust.edu.sa](mailto:diego.jimenezavella@kaust.edu.sa) ; [djimenez1909@gmail.com](mailto:djimenez1909@gmail.com)) and  
ASR ([alexandre.rosado@kaust.edu.sa](mailto:alexandre.rosado@kaust.edu.sa))

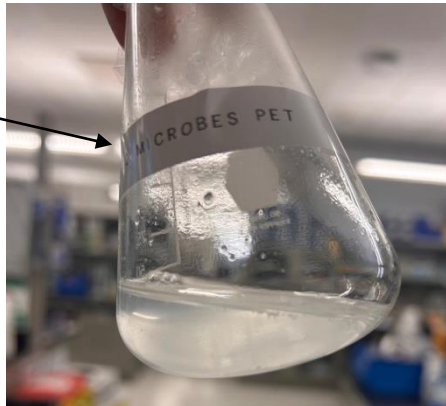
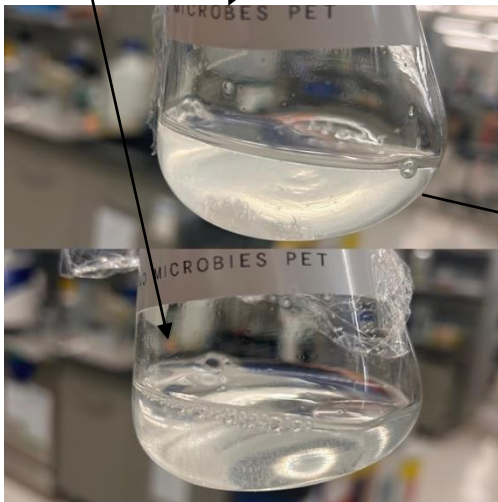
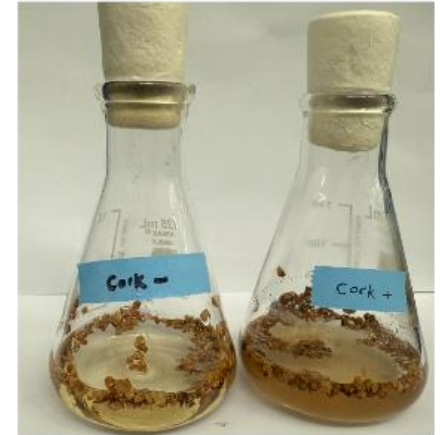
PET

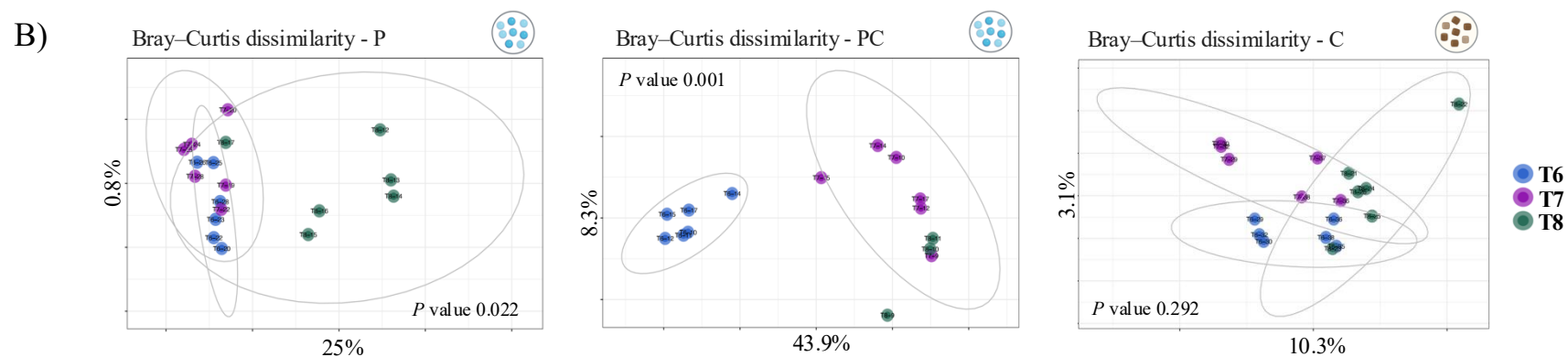
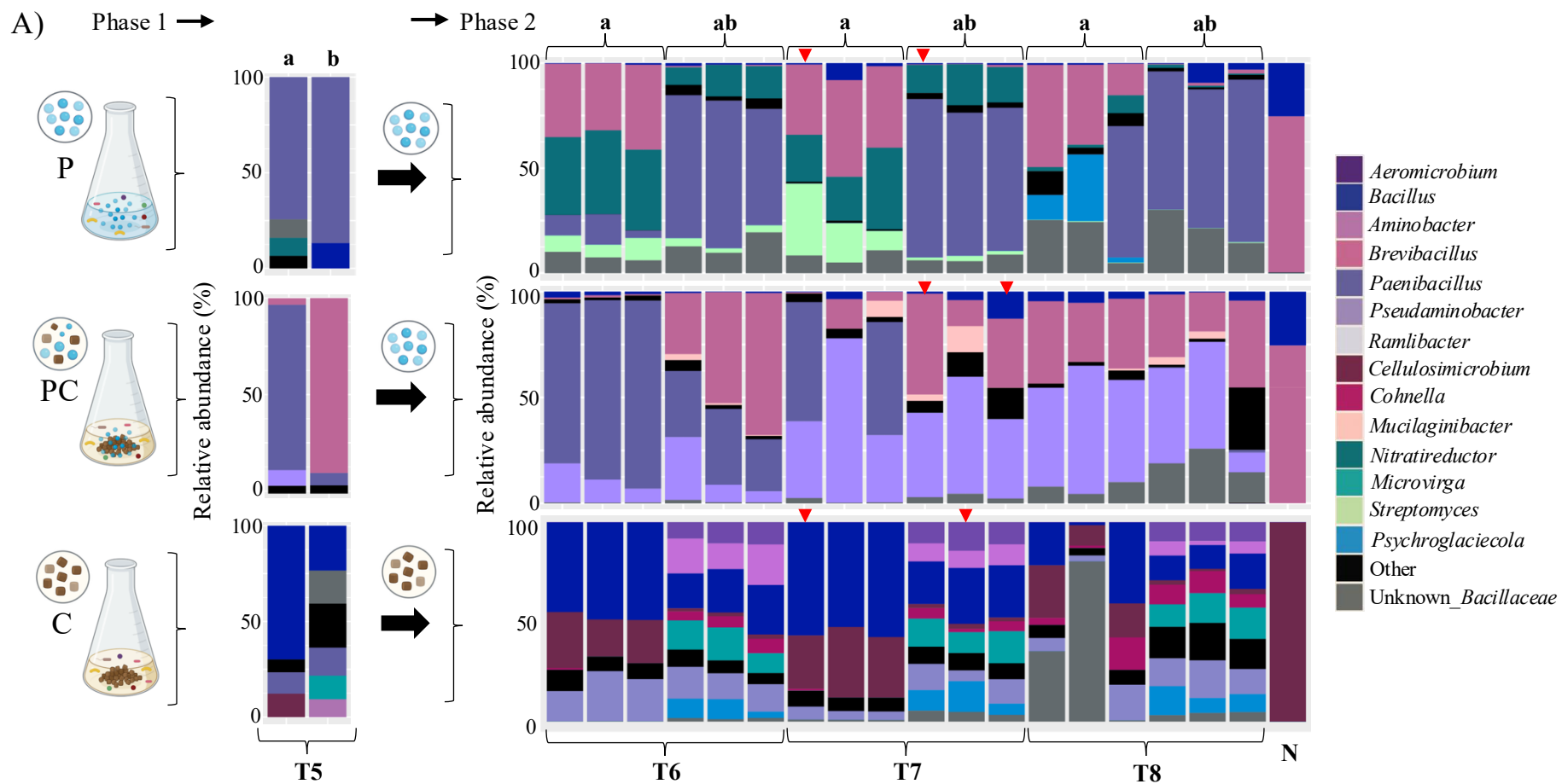


PET+cork



cork





Suppl. Fig. 2

## Supplementary figures legends

### Suppl. Fig. 1. Photographs of flask treatments.

### Suppl. Fig. 2. Microbial community composition and trajectories during Phase 2 (artificial

**community-level selection).** A) Relative abundance (%) of bacterial genera during transfers T5–T8 in PET (P), PET-cork (PC), and Cork (C) enrichment trajectories. Bar plots indicate genus-level taxonomic composition. Left: For each treatment, the two best replicate flasks selected at T5 to initiate Phase 2 (T6). Right: In the bar plots, letters at the top represent flasks inoculated with single (a) or coalescence (ab) communities from T5-derived flasks. Red arrowheads denote replicates selected as inocula for transfer based on growth performance. A negative control flask is highlighted with N. B) Principal coordinate analysis based on Bray–Curtis dissimilarity, with community compositional changes along transfers (T6–T8) for each treatment. Ellipses represent 95% confidence intervals for replicating clustering by transfer group, with significant dissimilarities (PERMANOVA; *adonis2*;  $p$ -value < 0.05) between transfers in P and PC treatments, but no significant dissimilarities occurred in the C treatment.