Food-Derived *Lactobacillus* Cell-Free Supernatant Enhances Growth Of Carbapenem-Resistant *Acinetobacter baumannii*

Requilino, Frenzen Wyntha M.; Atienza, Madelyn Erica F.; Belandres, Breather Heather F.; Cabañog, Kylle Christine L.; Calderon, Lauren Nicole E.; Ingan, Hannah Arianne Gie E.; Menor, Kyro Chris L.; Pioquito, Chyra P.; Velez, Juan Miguel Z.; Tenorio, Maria Alexandra C.; Guino-o, Richard Robert A.

Institute of Clinical Laboratory Sciences, Silliman University, Philippines
Corresponding Author: frenzenmrequilino@su.edu.ph; richardaguino-o@su.edu.ph

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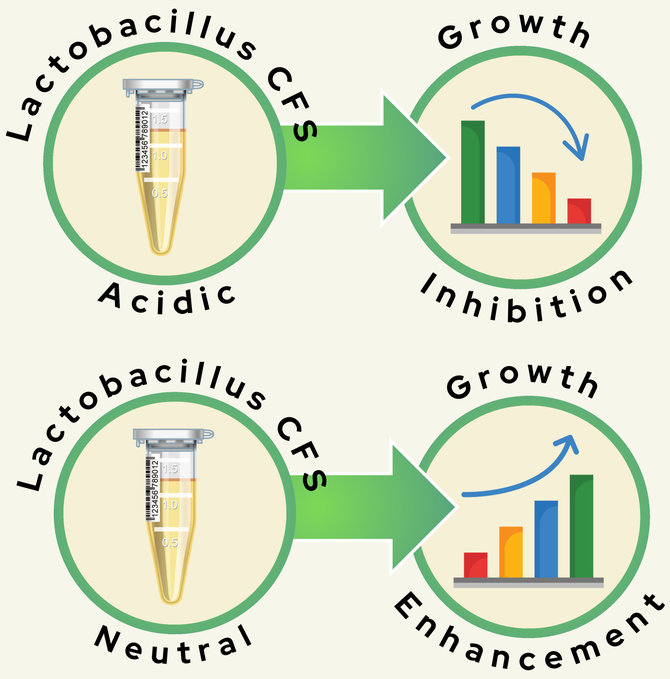
ABSTRACT

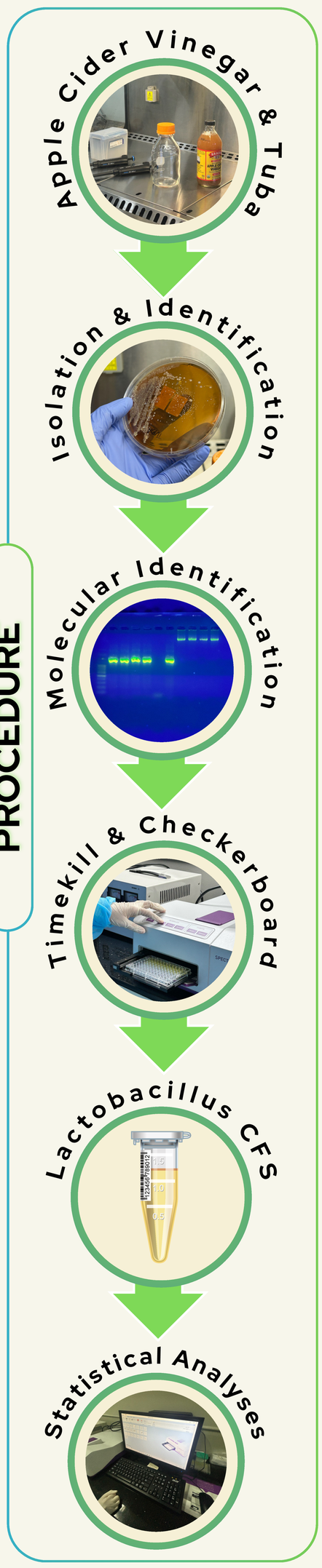
Fermented foods are known sources of *Lactobacillus* species with potential antimicrobial activity. The study examined whether **cell-free supernatants (CFS)** from ***Lactobacillus spp.*** isolated from tuba and apple cider vinegar could modulate the growth of **Carbapenem-resistant *Acinetobacter baumannii* (CRAB)** using **Time-Kill and Checkerboard assays.**

While **acidic CFS demonstrated initial inhibitory activity, neutralization of pH abolished this effect.** Time-kill assays revealed a paradoxical increase in bacterial absorbance and regrowth of CRAB strains. Turbidity readings consistently showed enhanced growth rates of CRAB in the presence of neutralized CFS, suggesting a growth-promoting effect possibly due to metabolites remaining in the CFS after removal of viable *Lactobacillus* cells.

KEY FINDINGS



METHODS



PROCEDURE

Lactobacillus ISOLATES USED

Code	*Lactobacillus* Isolate	Source
ATCC 4356	*Lactobacillus acidophilus*	Human Sample
A2	*Lactoplantibacillus plantarum*	Apple Cider Vinegar
T2	*Lactoplantibacillus plantarum*	Tuba

Acinetobacter baumannii ISOLATES USED

Code	*A. baumannii* Isolate	Source
ML-CRAB	*Carbapenem-Resistant Acinetobacter baumannii*	Hospital-acquired (primary isolate)
ATCC BAA - 1605	*Acinetobacter baumanni*	Sputum

FOR MORE INFORMATION

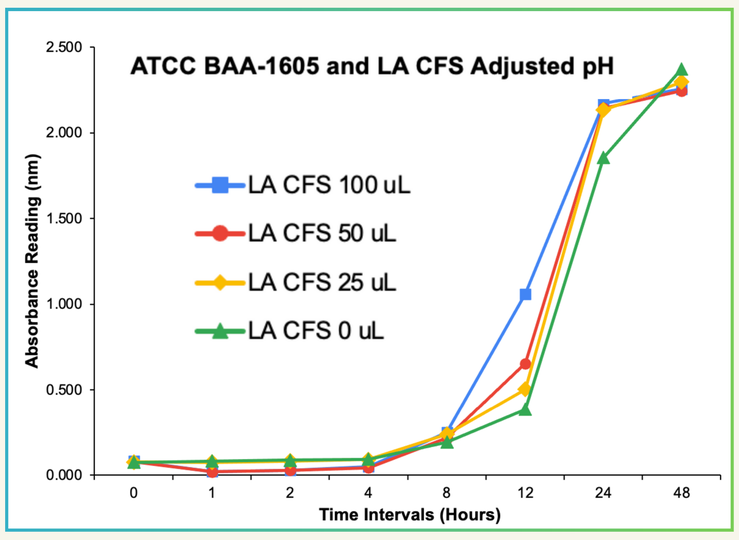
METHODS

RESULTS

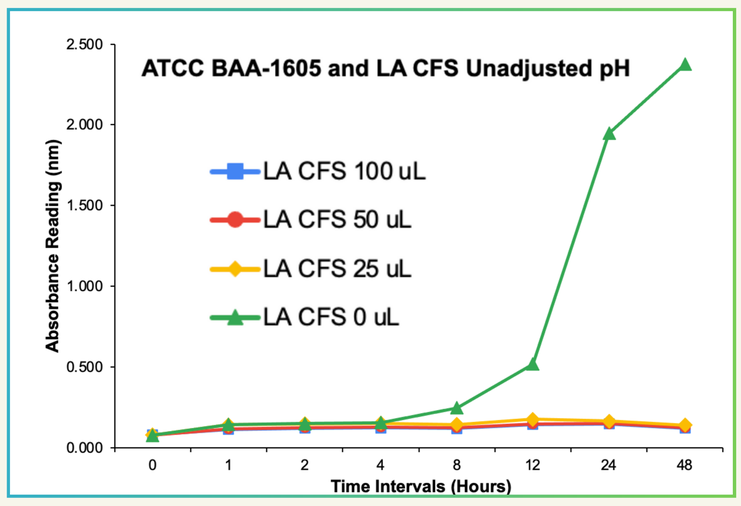
REFERENCES

RESULTS

TIME-KILL ASSAY

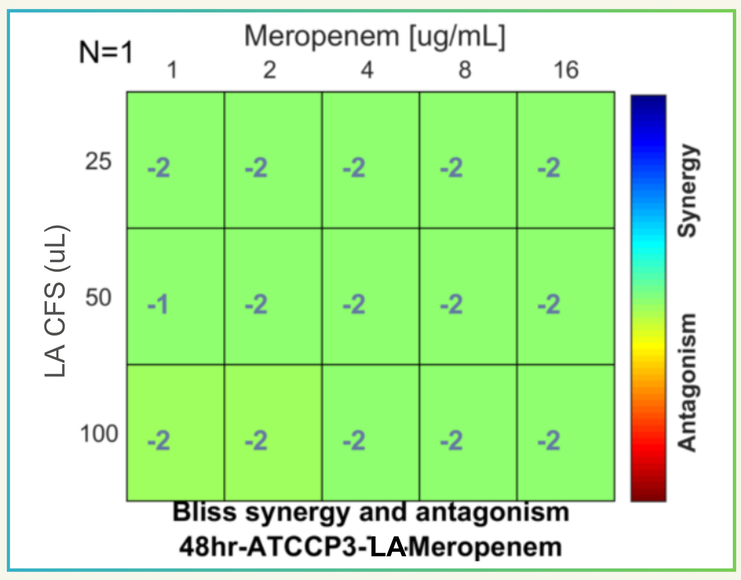


Representative line graph showing the **growth-enhancing effect of neutralized *Lactobacillus* CFS on *A. baumannii*.**



Representative line graph showing the **growth-inhibition of acidic *Lactobacillus* CFS on *A. baumannii*.**

CHECKERBOARD ASSAY



Representative figure showing **slight antagonism between *Lactobacillus* CFS and antibiotics on CRAB.**

CONCLUSION

Neutral pH Lactobacillus-derived byproducts may inadvertently create favorable conditions for CRAB survival.