

Dark Chocolate as a promising carrier for probiotic strains

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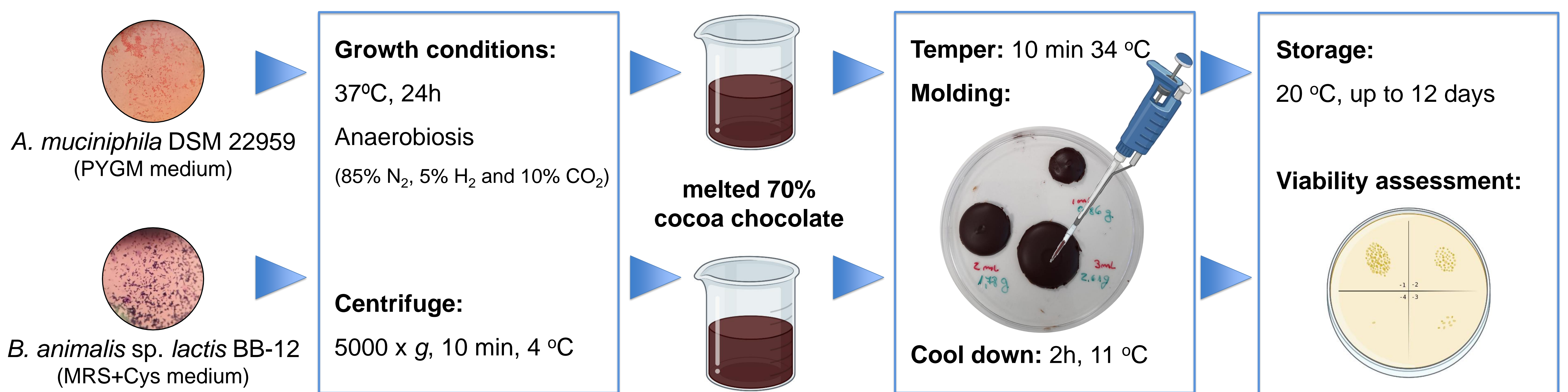
Objectives

Chocolate is one of the most attractive food products among the majority of population. Furthermore, **probiotic-containing chocolates** have been proposed as **new functional food** candidates.

Akkermansia muciniphila is a promising **next-generation probiotic** candidate, due to its positive impact in several diseases such as type 2 diabetes and obesity. **Bifidobacterium animalis** is a **classical probiotic** currently used as food supplement.

This study aims to evaluate flavanol-rich dark chocolate as a carrier for probiotic bacteria (***Bifidobacterium animalis* subsp. lactis BB-12** and ***Akkermansia muciniphila* DSM 22959**), through measurement of cell viability during **aerobic storage at 20°C**.

Methods



Results

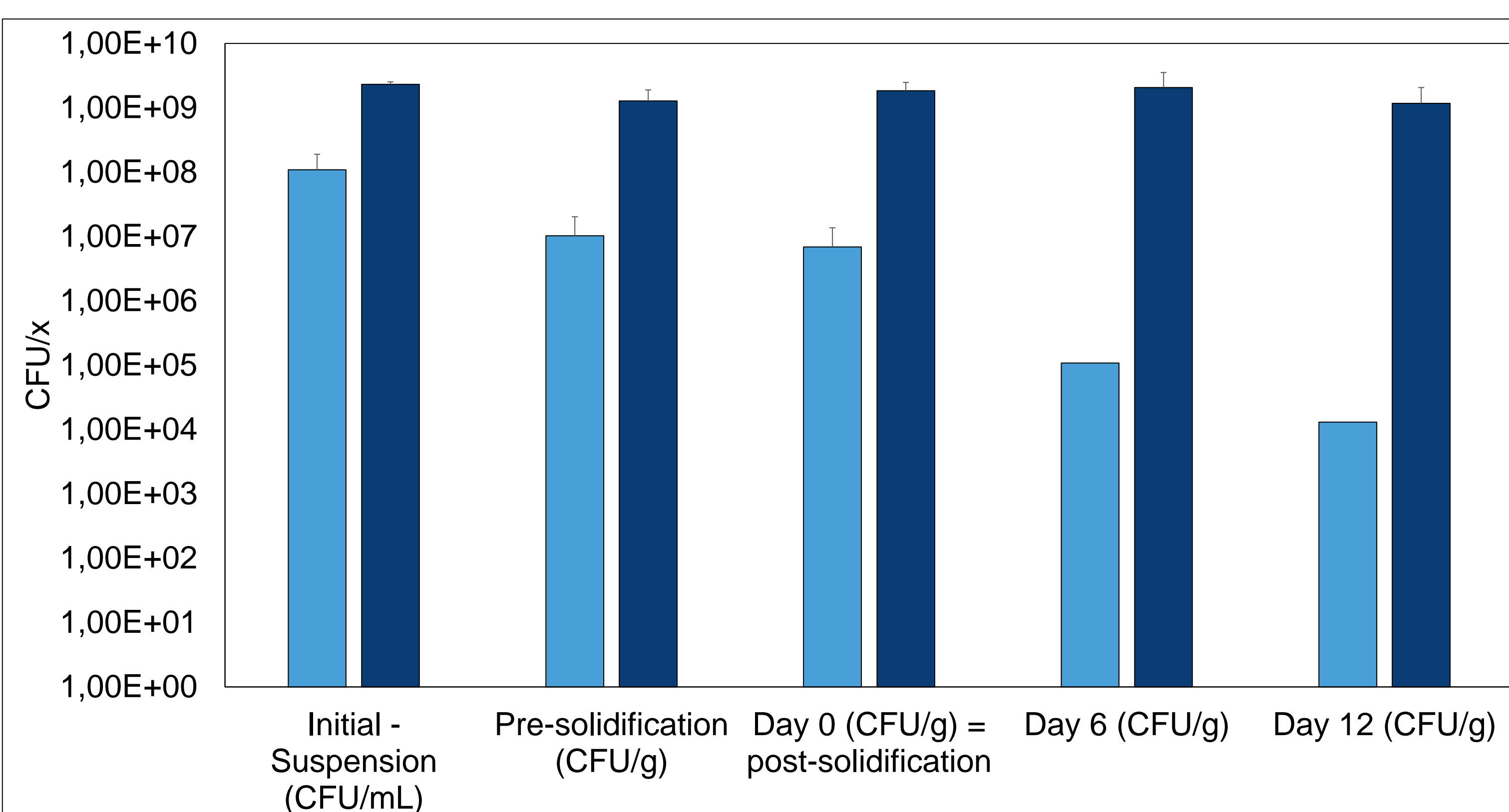


Figure 1. Viability of *A. muciniphila* DSM 22959 (light blue) and *B. animalis* subsp. *lactis* BB-12 (dark blue) during incorporation procedure and subsequent storage. All results are expressed as the average of CFU/x and standard deviation (error bars) from two independent assays.

Main Findings:

- The incorporation procedure does not highly impact the viability of the probiotic strains.
- *Bifidobacterium animalis* subsp. *lactis* BB-12 viability was maintained throughout the whole assay.
- *Akkermansia muciniphila* DSM 22959 viability decreased during storage (~3 log reduction).
- **Dark chocolate is a promising carrier for probiotics delivery**, as shown for *B. animalis* subsp. *lactis* BB-12.
- *A. muciniphila* DSM 22959 requires an **additional protection**, so that the viability can be maintained at high levels in these conditions.

Conclusion

This work provides novel insights regarding the promising application of **dark chocolate** as a **probiotic carrier** suitable for lactose-intolerant people, while representing an added-value product for obese and diabetic patients.

References

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