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BOOK OF ABSTRACTS

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Evaluation of the functional properties of kombucha-derived Brettanomyces yeasts

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Kombucha is a fermented beverage traditionally produced from tea and widely associated with beneficial health effects. These properties have been mainly attributed to the fermentable substrate and, to a lesser extent, to the microorganisms involved in the fermentation process. Therefore, the characterization of kombucha-associated microorganisms is essential to better understand and validate their potential health benefits. In this study, four probiotic yeast strains isolated from kombucha tea were identified, by the PCR-RFLP analysis of the ribosomal ITS region and the sequence of the D1/D2 domain of the 26S rDNA, as *Brettanomyces bruxellensis* (UVI55 and UVI56) and *B. anomalus* (UVI57 and UVI58). The evaluated strains exhibited remarkable antioxidant capacity, the ability to hydrolyze bile salts, and antimicrobial activity against several key pathogens. Additionally, they displayed significant cytotoxic effects across various tumor cell lines. Notably, in the *Caenorhabditis elegans* in vivo model, strain UVI56 significantly extended the nematode's lifespan and conferred protection against *S. enterica* infection. Although additional in vivo studies are necessary to further elucidate the underlying biological mechanisms and validate the therapeutic potential of these yeasts, the present findings highlight the relevance of *Brettanomyces* species as key members of the kombucha microbial consortium. These strains exhibit multiple biological activities of potential biomedical interest and may contribute synergistically to the health-promoting properties traditionally associated with kombucha beverages.

KEYWORDS: *kombucha, yeasts, brettanomyces, antimicrobial activity, cytotoxicity, longevity.*

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