



Gut microbiota-supporting beverage: Kombucha's activity against Gram-positive bacteria

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Introduction & aim

Fermented foods have been rapidly gaining popularity recently due to their use in medicine and dietetics. Kombucha is a fermented beverage containing numerous probiotic bacteria and their metabolites, which have beneficial effects on the digestive system. The purpose of this study was to determine the antimicrobial activity of kombucha containing probiotic strains against bacteria that cause gastrointestinal diseases.

Method

The activity of kombucha was tested before fermentation and during fermentation on days 1, 2, 3, 7, 8, and 14 against reference strains of Gram-positive bacteria from the American Type Culture Collection (ATCC) such as methicillin-sensitive *Staphylococcus aureus* (MSSA) ATCC 29213, two methicillin-resistant *Staphylococcus aureus* (MRSA) strains (ATCC 43300 and ATCC BAA-1707), *Bacillus cereus* ATCC 10876, and *Enterococcus faecalis* ATCC 29212. The well-diffusion method was used for this assessment, and the antimicrobial activity of this beverage was evaluated by the zone of growth inhibition (mm) around the kombucha well.

Results

The highest activity was observed after 14 days of kombucha fermentation against almost all tested bacteria with a zone of growth inhibition of 18-21 mm.

The highest activity was observed against *S. aureus* ATCC 29213 and *S. aureus* ATCC 43300.

Gram-positive bacteria	Fermentation day						Grow inhibition
	1	2	3	7	8	14	
<i>Bacillus cereus</i> ATCC 10876							-
<i>Enterococcus faecalis</i> ATCC 29212							11 mm
<i>Staphylococcus aureus</i> (MRSA) ATCC 43300							15 mm
<i>Staphylococcus aureus</i> (MRSA) ATCC BAA-1707							18-21 mm
<i>Staphylococcus aureus</i> (MSSA) ATCC 29213							18-21 mm

Conclusion

These data show that kombucha is a beverage that can support the treatment of food poisoning caused by pathogenic microorganisms such as methicillin-sensitive *S. aureus* (MRSA), methicillin-resistant *S. aureus* (MRSA), *B. cereus*, and *E. faecalis*.

References

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