

ANTIBACTERIAL ACTIVITY OF THE ESSENTIAL OILS EXTRACTED FROM CASSIA BARK, BAY FRUITS, AND CLOVES AGAINST VIBRIO PARAHAEMOLYTICUS AND LISTERIA SPP

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Spices are added into foods mainly for enhancing the organoleptic quality of the food. The application of spices and their derivatives in foods as preservatives has been investigated for years. In this study, we determined the antibacterial activity of the essential oils of three spices, cassia bark (bark of *Cinnamomum aromaticum* Nees), bay (*Laurusnobilis* L) fruits and cloves (*Syzygium aromaticum*), against *Vibrio parahaemolyticus*, *Listeria monocytogenes*, and four *Listeria* species. The chemical composition of these essential oils was analysed by the GC-MS method. The results showed that all of the oils had potent inhibitory effects against all of the tested bacteria. The essential oil from cassia bark exhibited the greatest antimicrobial activity, while the oil from bay fruits had the lowest activity against the bacteria. The main active compounds in the essential oils from cassia bark, bay fruits and cloves were identified to be cinnamaldehyde (78.11%), cinnamaldehyde (61.78%) and eugenol (75.23%), respectively. The antimicrobial activity and the chemical composition of *Cinnamomum aromaticum* Nees bark and *Laurusnobilis* L fruits essential oils are reported for the first time. This in-vitro study demonstrated the antimicrobial activity of the spices, indicating the spice extracts are potential sources of antimicrobial agents for using in food products.

Biography

Qingchao Xie has obtained his Doctorate of Food Science and Technology at the Shanghai Ocean University in 2019. His main research areas include molecular ecology of food microbiology, food quality and safety risk assessment and food quality safety and system biology research.

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