The essential oil profiles and antibacterial activity of six wild Cinnamomum species

Abstract

The essential oil composition of six species of wild Cinnamomum found in Borneo was investigated. The oils were obtained from bark by hydrodistillation and the volatile chemical profile was obtained via Gas Chromatography-Mass Spectrometry (GCMS). A total of 65 volatile constituents were identified, where the essential oils of the studied specimens contained high contents of oxygenated monoterpenes. Eucalyptol (1.2-31.1%), terpinen-4-ol (7.9-22.1%), eugenol (0.4-37.9%) and α-cadinol (0.4-1.8%) were detected consistently in the specimens studied. The oils of C. cuspidatum and C. crassinervium exhibited significant inhibition against Listeria monocytogenes, specifically the latter, which displayed a lower minimum bactericidal concentration (MBC) value against Staphylococcus aereus and L. monocytogenes. This result had highlighted the possible usage of the essential oil derived from wild cinnamom species against food borne pathogens.