

Inhibitory effect of chocolate components toward lard detection in chocolate using real time PCR

ABSTRACT

An identification method of lard in chocolates using real-time polymerase chain reaction was developed to address Halal authentication. However, polymerase chain reaction detection of lard in chocolate has been in vain. In order to investigate the inhibitory effect exerted by each of the chocolate components, four basic chocolate components, sugar, milk powder, cocoa butter, and cocoa powder, were adulterated with lard and examined using porcine-specific real-time polymerase chain reaction assay. The results discovered cocoa powder, as the only component that prevents DNA extraction of lard in chocolate. No substantial polymerase chain reaction inhibition was detected, and thus confirms the cocoa powder's inhibition on DNA extraction of lard from lard-adulterated chocolate. This finding will expedite new research to develop a method to dissociate the lard from the lard-cocoa powder complex, which will have high potential to be applied as a pre-treatment of the chocolate prior to the DNA extraction and polymerase chain reaction.

Keyword: Lard; Chocolate; Real-time PCR; Cocoa powder