

Anti-foot-and-mouth disease virus effects of Chinese herbal kombucha *in vivo*

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Abstract

The foot and mouth disease virus (FMDV) is sensitive to acids and can be inactivated by exposure to low pH conditions. Spraying animals at risk of infection with suspensions of acid-forming microorganisms has been identified as a potential strategy for preventing FMD. Kombucha is one of the most strongly acid-forming symbiotic probiotics and could thus be an effective agent with which to implement this strategy. Moreover, certain Chinese herbal extracts are known to have broad-spectrum antiviral effects. Chinese herbal kombucha can be prepared by fermenting Chinese herbal extracts with a kombucha culture. Previous studies demonstrated that Chinese herbal kombucha prepared in this way efficiently inhibits FMDV replication *in vitro*. To assess the inhibitory effects of Chinese herbal kombucha against FMDV *in vitro*, swine challenged by intramuscular injection with 1000 SID50 of swine FMDV serotype O strain O/China/99 after treatment with Chinese herbal kombucha were partially protected against infection as demonstrated by a lack of clinical symptoms and qRT-PCR analysis. In a large scale field trial, spraying cattle in an FMD outbreak zone with kombucha protected against infection. Chinese herbal kombucha may be a useful probiotic agent for managing FMD outbreaks.

Biography

Shengjun Jiang is researcher in Tropical Crops Genetic Resources Institute, China. Research interest include animal disease study.

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