

Effects of Geniposide and its Metabolites Against *Helicobacter pylori* Infection

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Abstract

Gardenia has been used as an herbal medicine to treat liver and gall bladder disorders such as hepatitis and acute jaundice, as well as inflammation and fever in Chinese medicine for many years. The effective biological actions, such as protective activity against oxidative damage, as well as cytotoxic, anti-inflammatory, and fibrolytic activities, have been demonstrated. Since geniposide, the major active compound of gardenia, is transformed into genipin by bacterial enzymes in the intestine and then absorbed, the active components of gardenia, geniposide and genipin also play an important role in antioxiation and antiinflammation. In our study, minimum bactericidal concentration (MBC) of genipin against *H. pylori* reference strain (ATCC 26695) was 1mM; however, the MBC of geniposide was higher than 10mM. Ggenipin is an unstable component, it's easily combined with amino acid (aa) to form geinpin-aa complex (GAC). We found the MBC of GAC against *H. pylori* was 2mM. In AGS cells infection model, after 6 hr of treatment, with 0.25 mM of genipin, the adherence ability of *H. pylori* to AGS cells was decreased by 81.25%; with 7.5mM of geinpin-aa complex, the adherence ability of *H. pylori* to AGS cells was decreased by 70%. The expression of IL-8 was also surppressed by 7.5mM of GAC treatment by 95%. In mice infection model, with 4 mM of genipin, the IL-12 expression was decreased by 2 fold after 7 days of treatment, and the IFN- γ expression was decreased by 4 fold after 14 days of treatment.

Keywords : geniposide, genipin, *Helicobacter pylori*, antiinflammation