

# In vitro and in vivo effects of apple peel polyphenols against helicobacter pylori

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The inhibitory effects of a standardized apple peel polyphenol-rich extract (APPE) against *Helicobacter pylori* infection and vacuolating bacterial toxin (VacA) induced vacuolation were investigated. Apple peel polyphenols significantly prevented vacuolation in HeLa cells with an IC<sub>50</sub> value of 390 µg of gallic acid equivalents (GAE)/mL. APPE also displayed an in vitro antiadhesive effect against *H. pylori*. A significant inhibition was observed with a 20-60% reduction of *H. pylori* attachment at concentrations between 0.250 and 5 mg of GAE/mL. In a short-term infection model (C57BL6/J mice), two levels of APPE doses (150 and 300 mg/kg/day) showed an inhibitory effect on *H. pylori* attachment. Orally administered apple peel polyphenols also showed an anti-inflammatory effect on *H. pylori*-associated gastritis, lowering malondialdehyde levels and gastritis scores. © 2010 American Chemical Society.