

## Natural products isolated from *Fatsia polycarpa* Hayata to treat *Helicobacter pylori* Infection in Mice

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*Helicobacter pylori* infection is associated with chronic gastritis, peptic ulcers, and gastric cancer. About 50% of the population in the world is infected by *H. pylori*. Furthermore, 70% to 95% of *H. pylori*-infected patients are suffering from peptic ulcer. *Fatsia polycarpa* Hayata has been used as an herbal medicine to treat ankylosing spondyloarthritis, osteoarthritis, rheumatism, rheumatoid arthritis with accompanying reactive gout, osteochondrosis, synovitis, and tendinitis in Chinese medicine for many years. We analyzed the natural products isolated from *Fatsia polycarpa* Hayata by evaluating the anti-*H. pylori* activity *in vitro* and *in vivo*. Compound DM-24-6-3-1 exhibited the strongest antibacterial activity against *H. pylori* with minimum bactericidal concentration of 4 µg/ml, but weak cytotoxicity against AGS cells ((human gastric cancer epithelial cell lines)) at IC<sub>50</sub> of 158 µg/ml. It could suppress 52 % of *H. pylori* adhesion and invasion to AGS cells after 6 hr-treatment at concentration of 16 µg/ml and also decrease *H. pylori*-induced IL-8 expression. Infected mice were treated with 4 or 8 µg of DM-24-6-3-1 for three days. Both treatments could suppress 80 % of *H. pylori* colonized and VacA expression (vacuolating cytotoxin A) in stomach and decrease infection induced IL-1β and IFN-γ expression. This study offers an alternative way to diminish risk of *H. pylori* infection and development of multidrug-resistant strains by using natural products for infection treatment.

Keywords: *Fatsia polycarpa* Hayata, *Helicobacter pylori*