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Effects of Fractions from *Alnus japonica* Steud on the Antibacterial Activity Against *H. pylori* and the Inhibition Against Gastric H^+/K^+ ATPase

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Alnus japonica Steud have long been used in the traditional medicine for gastric disorder, hepatitis and fatty liver in Korea. In this study, we studied the in vitro antibacterial activity against *Helicobacter pylori* (*H. pylori*, ATCC43504) and the inhibitory action against the in vitro gastric H^+/K^+ -ATPase (AP) in the fractions of *Alnus japonica* Steus.

For the determination of antibacterial activity in the fractions *Alnus japonica* Steud against the *H. pylori*, the activity of urease which released from *H. pylori* was measured. Among four acetone extract fractions, acetone, acetone-dichloromethan (OAD), acetone-ethylacetate (OAE) and acetone-hexane, OAD has the highest antibacterial activity against *H. pylori* with IC50 of 125 μ g/ml. The methanol extracts of *Alnus japonica* Steud has a weak anti-*H. pylori* activity, however the methanol-dichloromethan fraction (OMD) showed the strongest activity among the 7 different fractions with about 80% inhibition at 250 μ g/ml. To observe the inhibitory action against the AP in hog gastric membrane vesicle, the inorganic phosphate released after reaction was determined colorimetrically. 0.01 μ M omeprazole was inhibited the activity of AP about 44%. At the concentration of 50 μ g/ml, the MeOH soluble fraction (OHM) from hot water extracts of *Alnus japonica* was inhibited 36.8 \pm 1.9% of AP activity, OHM column fractions 2, 4-1, 5-2, 5-2, and 13 were shown the inhibition of AP activity 59.4, 45.2, 43.7, 41.8 and 60.8%, respectively.

Based on these results, the active components of *Alnus japonica* Steud with anti-*H. pylori* activity and/or anti-AP activity are purified from the most active fractions.