SUPPLEMENTAL MATERIAL

Table S1. Clinical characteristics for the patients with *Helicobacter pylori* infection and controls.

	Controls(n=13)*	*H. pylori*+(n=18)†	*p*-Value
Age (years)	29.38 ± 1.538	31.44 ± 1.589	0.375
Males (%)	23.07	38.88	
Body mass index, Kg/m^2	21.39 ± 0.699	22.26 ± 1.076	0.503
Current smokers (%)	15.38	16.67	
Systolic pressure (mmHg)	112.40 ± 2.832	110.70±1.852	0.612
Diastolic pressure (mmHg)	72.62 ± 2.126	68.94 ± 1.768	0.193
Fasting blood-glucose (mmol/L)	4.67 ± 0.138	4.68 ± 0.096	0.948
Total cholesterol (mmol/L)	4.17± 0.219	4.37 ± 0.270	0.597
Triglyceride (mmol/L)	1.12 ± 0.076	1.18 ± 0.081	0.626
High density lipoproteins (mmol/L)	1.36 ± 0.046	1.43 ± 0.038	0.232
Low density lipoproteins (mmol/L)	2.59 ± 0.230	3.04 ± 0.231	0.190

* Controls: Volunteers without *Helicobacter pylori* infection

†*H. pylori*+: Patients with *Helicobacter pylori* infection

Figure S1A. Helicobacter pylori DNA, nearly complete genome, strain: MKM6

Sequence ID: AP017362.1 Length: 1577123 Number of Matches: 2

Range 1: 1142759 to 1144153

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Alignment statistics for match #2

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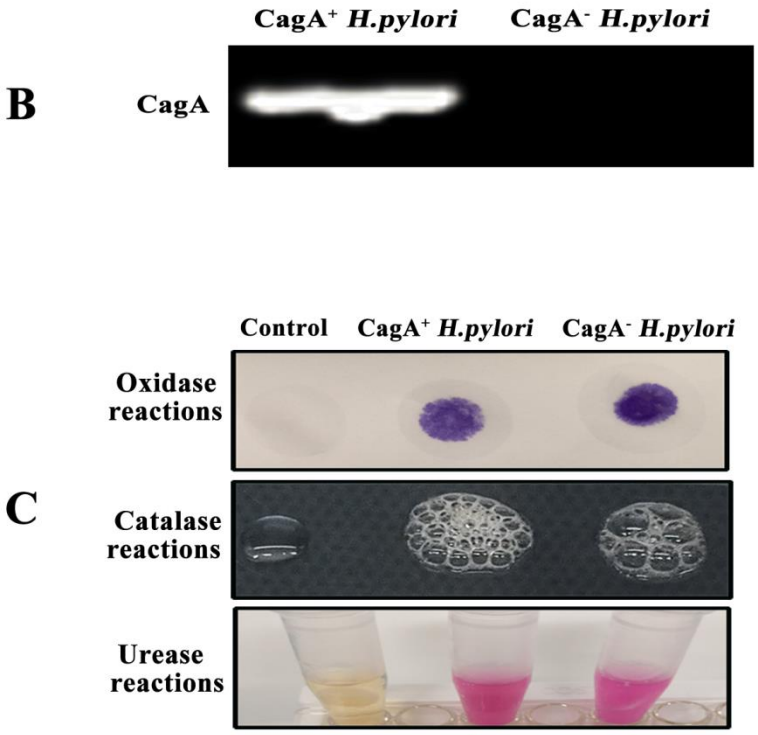
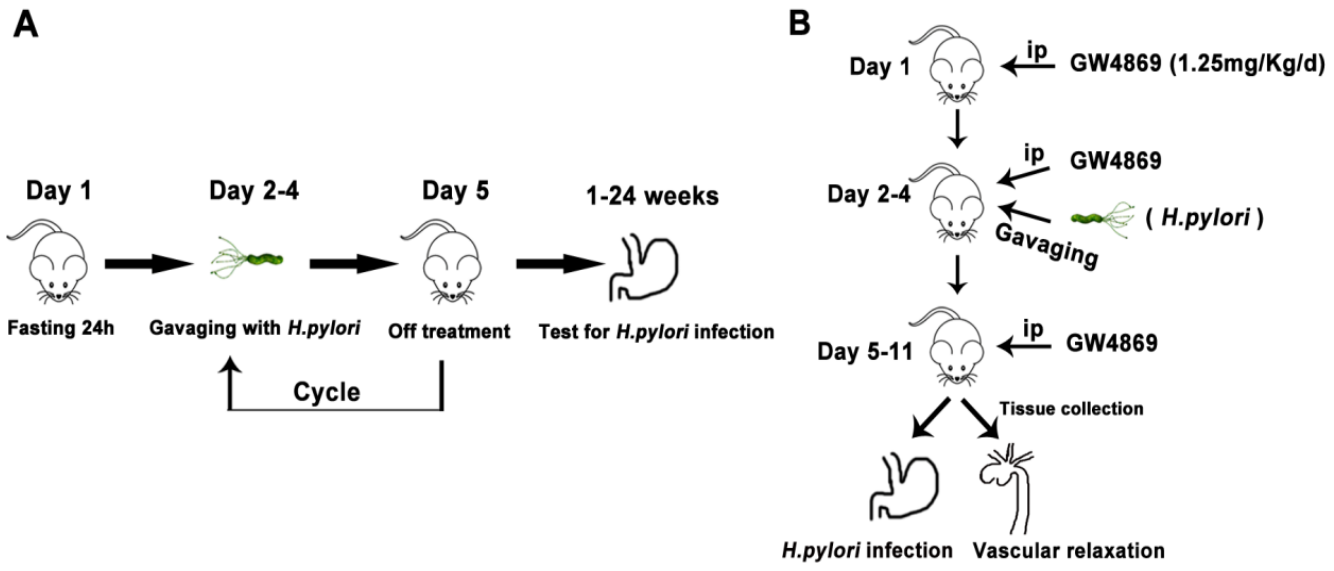
Figure S1. Identification of CagA$^+$ *H. pylori* isolated from gastric ulcer patient's specimen during gastroscopy.



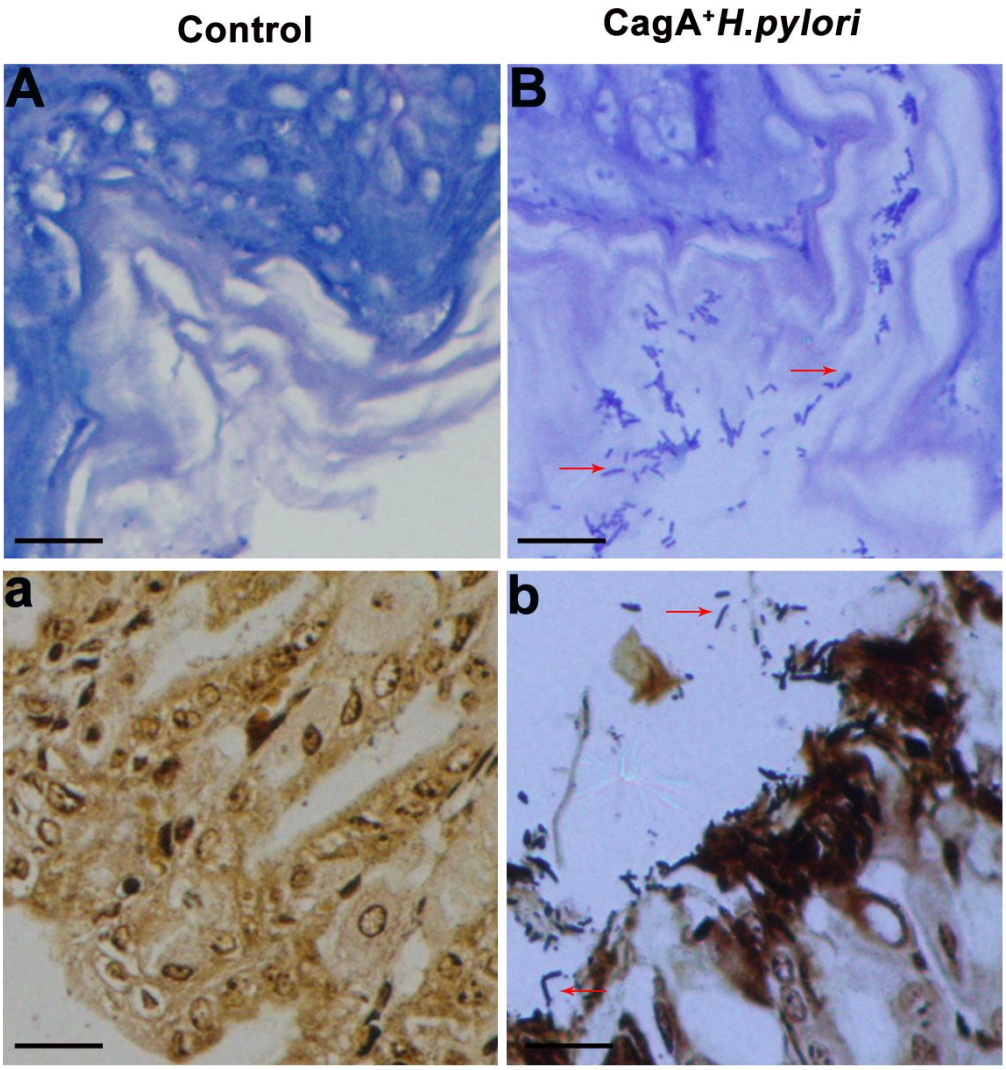
The sequence of the isolated *H. pylori* was compared with the complete sequence of *H. pylori* 16s rRNA gene from published GenBank data: sequence ID AP017362 for CagA$^+$ *H. pylori* (**A**). Agarose gel electrophoresis analysis showed that CagA was present in CagA$^+$ *H. pylori*, not in CagA$^-$ *H. pylori* (also isolated from another gastric ulcer patient' specimen during gastroscopy) (**B**).Biochemical identification tests showed that the bacteria were reactive positively for oxidase, catalase and urease of CagA$^+$ and CagA$^-$ *H. pylori* (**C**).

Figure S2. Schematic diagrams of experimental approaches.



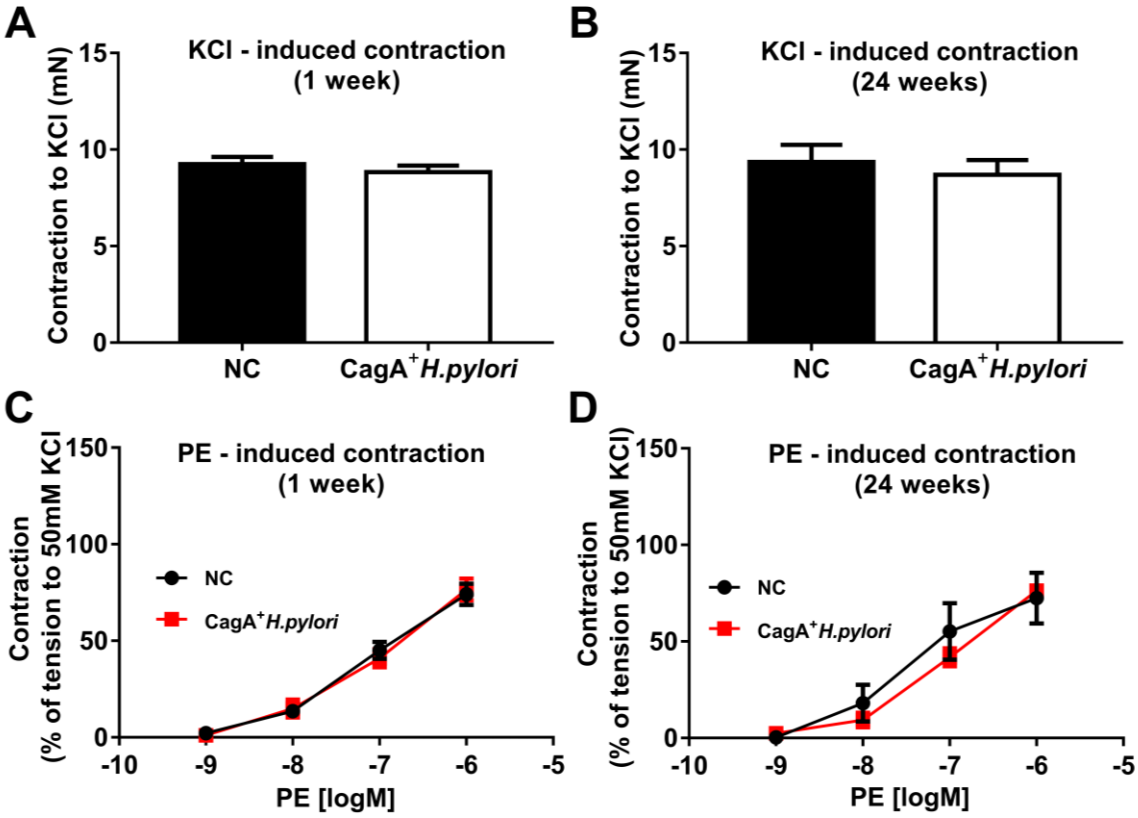
To establish mouse *H. pylori* infection model, mice were fasted for 24 hours and then given 0.2ml of $CagA^+$ *H. pylori* inoculums (4×10^9 colony-forming units/ml) by intragastric gavage once daily for 3 days, then off treatment for 1 day. The mice were tested for *H. pylori* infection using Rapid Urease Test (RUT) and Giemsa staining with the goal of achieving 100% infection rate on both tests 7 days after the last gavage. Intragastric gavage cycle *with H. pylori* inoculum (3 days on and 1 day off) continued for the group of mice until 100% infection rate was achieved. The mice in control group were administered the same volume and frequency of PBS via intragastric gavage as for *H. pylori* groups (**A**). To determine if blocking exosomes release with GW4869 *in vivo* could improve endothelial function in the mice with $CagA^+$ *H. pylori* infection.GW4869 (0.05mg/ml) was intraperitoneally injected daily into mice (1.25mg/kg/day) for 11 days, while *H. pylori* inoculums was gavaged simultaneously once daily for 3 days starting 24 hours after the first dose of GW4869 with DMSO (2.5%) in PBS as the control. Another group of mice with $CagA^+$ *H. pylori* inoculums and intraperitoneal injection with PBS were used as control. Animals were sacrificed 24h after the final injection of GW4869 to collect thoracic aorta for evaluation of endothelium-dependent and independent vascular relaxation (**B**). **ip:** intraperitoneal injection.

Figure S3. CagA$^+$ *H. pylori* colonized the stomach in C57BL/6mice.



After fasting for 24 hours, mice were infected with 0.2 ml of CagA$^+$ *H. pylori* inoculum by intragastric gavage once daily for 3 days for CagA$^+$ *H. pylori* infection to achieve the infection rate of 100%. Mice were tested for *H. pylori* infection using pathological Giemsa staining and Warthin-Starry silver staining 7 days after the last intragastric gavage. Geimsa staining (**A-B**) and Warthin-Starry silver staining (**a-b**) showed the characteristic spiral-shaped *Helicobacter pylori* organisms (red arrows) were present in mouse stomach (**scale bars**: 20 μm). **Control:** mice without *H. pylori* infection; **CagA$^+$ *H. pylori***: mice with *H. pylori* infection.

Figure S4. Infection with CagA$^+$ *H. pylori* had no effect on vascular contraction to either phenylephrine or potassium chloride.



Thoracic aorta was collected and prepared to evaluate the vascular function from male C57BL/6 mice at 1 week and 24 weeks after infection with *H. pylori*. Infection with CagA$^+$ *H. pylori* had no effect on the vascular contractile responses to KCl (50 mM) (**A, B**) and to cumulative dosing of PE (**C, D**). NC: normal control; PE: phenylephrine**.** Values were expressed as mean ± SE (n = 8 mice for control group, n = 10 mice for the group with *H. pylori* infection).