

## SUPPLEMENTARY FIGURE LEGENDS

**Figure S1. *H. pylori* strain PMSS1 causes a greater inflammatory response than J166.**

(A) Representative photomicrographs of mouse gastric tissue stained with hematoxylin and eosin 16 weeks after challenge with *H. pylori* PMSS1 (top) or J166 (bottom). (B) Representative photomicrographs of gastric tissue stained with hematoxylin and eosin 4 weeks after challenge of WT (top) or *Il10*<sup>-/-</sup> (bottom) mice with *H. pylori* PMSS1.

**Figure S2.**

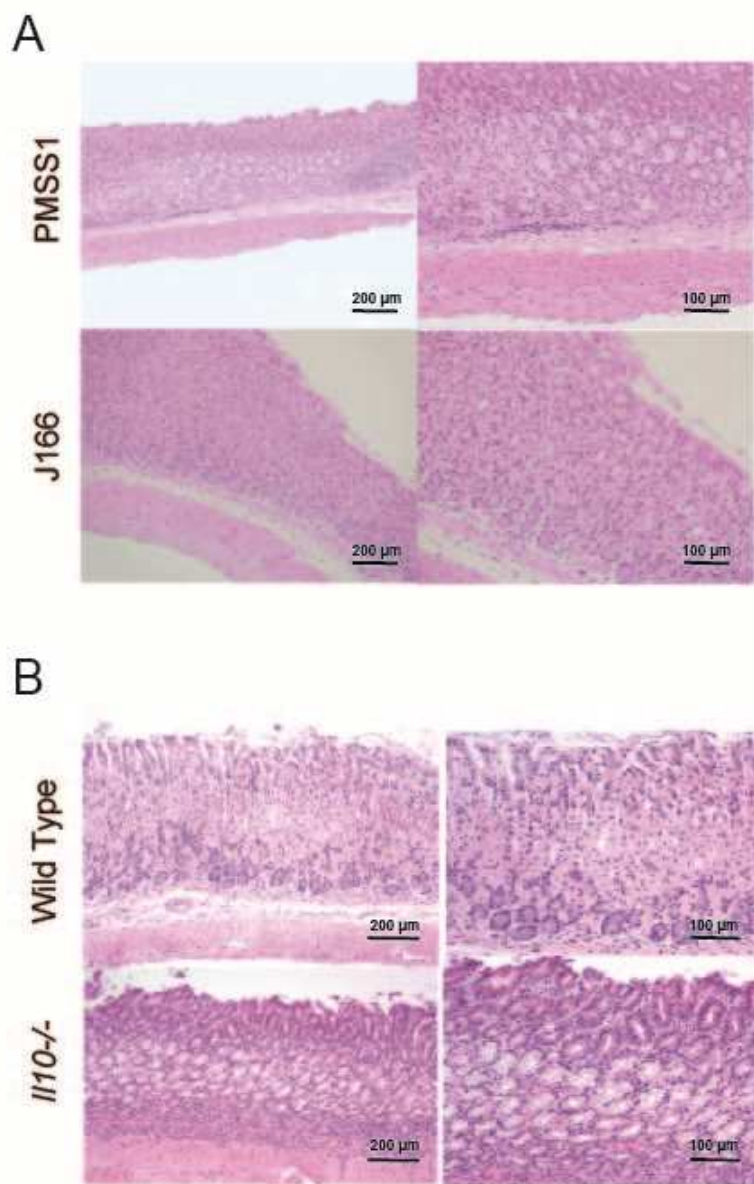
WT *H. pylori* PMSS1 recovered 8 weeks PI showed lower bacterial load (A) and frequent *cagY* recombination (B), compared to PMSS1 $\Delta$ *cagE*. Horizontal lines indicate mean  $\pm$  SEM. \* $P \leq 0.05$ , \*\*\* $P \leq 0.001$ , \*\*\*\* $P \leq 0.0001$ .

**Table S3. Mouse Strains**

<b>Name</b>	<b>Stock Number<sup>1</sup></b>
C57BL/6J (WT)	000664
<i>Ifn<math>\gamma</math>R</i> <sup>-/-</sup>	003288
<i>Ifn<math>\gamma</math></i> <sup>-/-</sup>	002287
<i>Rag1</i> <sup>-/-</sup>	002216
T-Cell <sup>-/-</sup> (TCR beta/delta <sup>-/-</sup> )	002122
B-Cell <sup>-/-</sup> (IgH <sup>muMT</sup> )	002288
<i>Il10</i> <sup>-/-</sup>	002251

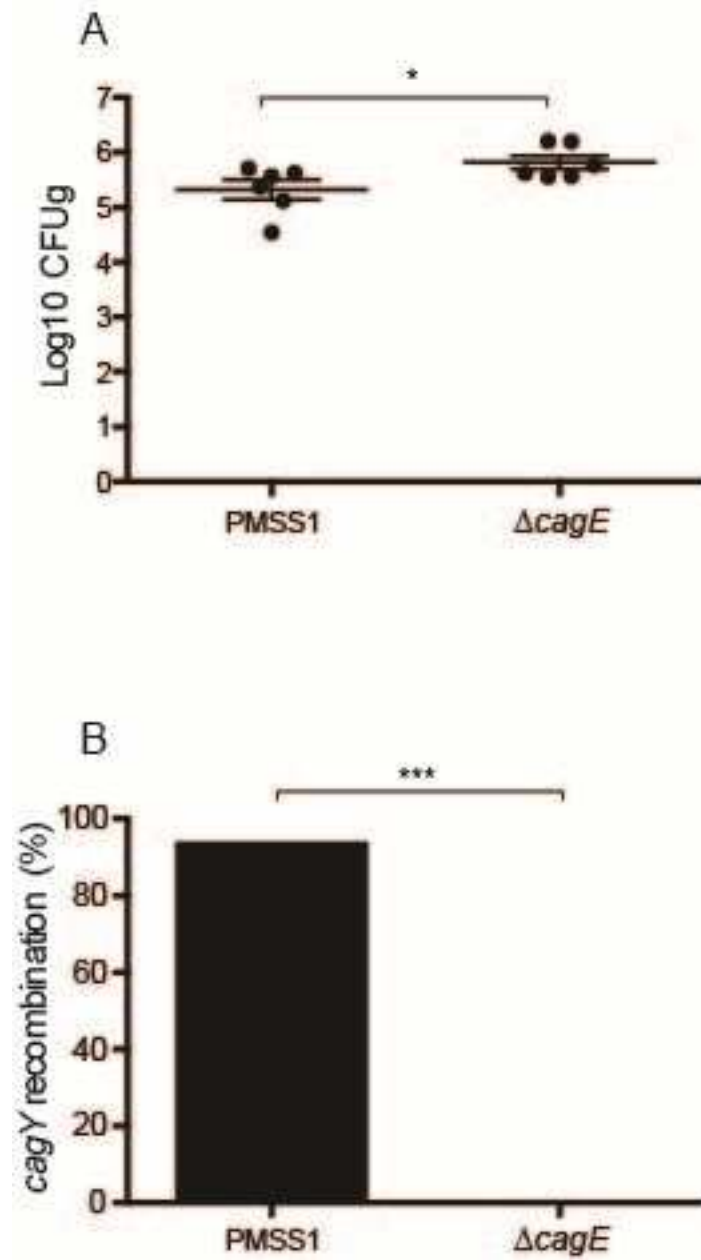
<sup>1</sup>Jackson Labs

Figure S1



ACC

Figure S2



**Table S1. Bacterial Strains**

Strain	Description	Antibiotic Resistance <sup>a</sup>	Source (Reference)
PMSS1	Wild Type		(1)
PMSS1 $\Delta$ cagE	PMSS1 with <i>cagE</i> replaced by <i>cat</i>	Cm	(1)
PMSS1 $\Delta$ cagY	PMSS1 with <i>cagY</i> replaced by <i>cat::rpsL</i>	Cm	This study
PMSS1 $\Delta$ cagY[PMSS1]	PMSS1 $\Delta$ cagY replaced with <i>cagY</i> from PMSS1	Str, Km	This study
PMSS1 $\Delta$ cagY[SS1]	PMSS1 $\Delta$ cagY replaced with <i>cagY</i> from SS1	Str, Cm	This study
PMSS1 Out 1	PMSS1 mouse output 8 weeks PI		This study
PMSS1 Out 2	PMSS1 mouse output 8 weeks PI		This study
PMSS1 Out 3	PMSS1 mouse output 8 weeks PI		This study
PMSS1 $\Delta$ cagY[Out 1]	PMSS1 $\Delta$ cagY replaced with <i>cagY</i> from PMSS1 Out1	Str	This study
PMSS1 $\Delta$ cagY[Out 2]	PMSS1 $\Delta$ cagY replaced with <i>cagY</i> from PMSS1 Out2	Str	This study
PMSS1 $\Delta$ cagY[Out 3]	PMSS1 $\Delta$ cagY replaced with <i>cagY</i> from PMSS1 Out3	Str	This study
J166	Wild type		(2)
KUS13A	Clinical isolate from patient KUS13		(3)
KUS13B	Isolate from patient KUS13 7.4 yrs after isolate A		(3)
KUS13A $\Delta$ cagY	KUS13A with <i>cagY</i> replaced by <i>cat::rpsL</i>	Cm	This study
KUS13B $\Delta$ cagY	KUS13B with <i>cagY</i> replaced by <i>cat::rpsL</i>	Cm	This study
KUS13A $\Delta$ cagY[KUS13B]	KUS13A $\Delta$ cagY replaced with <i>cagY</i> from KUS13B	Str	This study
KUS13A $\Delta$ cagY[KUS13A]	KUS13A $\Delta$ cagY replaced with <i>cagY</i> from KUS13A	Str	This study
KUS13B $\Delta$ cagY[KUS13A]	KUS13B $\Delta$ cagY replaced with <i>cagY</i> from KUS13A	Str	This study
KUS13B $\Delta$ cagY[KUS13B]	KUS13B $\Delta$ cagY replaced with <i>cagY</i> from KUS13B	Str	This study
<i>E. coli</i> Top10	Cloning strain		Invitrogen

<sup>a</sup>Cm, chloramphenicol; Str, streptomycin; Ap, ampicillin; Km, kanamycin

1. Arnold, I.C., Lee, J.Y., Amieva, M.R., Roers, A., Flavell, R.A., Sparwasser, T., and Muller, A. 2010. Tolerance rather than immunity protects from *Helicobacter pylori*-induced gastric preneoplasia. *Gastroenterol* 140:199-209.
2. Dubois, A., Berg, D.E., Incecik, E.T., Fiala, N., Heman-Ackah, L.M., Perez-Perez, G.I., and Blaser, M.J. 1996. Transient and persistent experimental infection of nonhuman primates with *Helicobacter pylori*: Implications for human disease. *Infect Immun* 64:2885-2891.
3. Morelli, G., Didelot, X., Kusecek, B., Schwarz, S., Bahlawane, C., Falush, D., Suerbaum, S., and Achtman, M. 2010. Microevolution of *Helicobacter pylori* during prolonged infection of single hosts and within families. *PLoS Genet* 6:e1001036.

**Table S2. Bacterial Plasmids**

Plasmid	Description	Antibiotic Resistance <sup>a</sup>	Source (Reference)
pBluescript SK-	Cloning vector	Ap	Stratagene
pJ261	pBluescript SK- with <i>CAT_rpsL</i> replacing J166 <i>cagY</i> (bp 13-6,135), and flanked by upstream (1,348 bp) and downstream (1,122 bp) DNA	Ap, Cm	(1)
pJ318	pBluescript SK- with kanamycin resistance gene replacing PMSS1 <i>rdxA</i> (bp 343-360), and flanked by upstream (1,194 bp) and downstream (904 bp) DNA	Ap, Km	This study
pJ319	pBluescript SK- with chloramphenicol resistance gene replacing PMSS1 <i>rdxA</i> (bp 343-360), and flanked by upstream (1,194 bp) and downstream (904 bp) DNA	Ap, Cm	This study

<sup>a</sup>Cm, chloramphenicol; Str, streptomycin; Ap, ampicillin; Km, kanamycin

1. Barrozo RM, Cooke CL, Hansen LM, Lam AM, Gaddy JA, Johnson EM, Cariaga TA, Suarez G, Peek RM, Jr., Cover TL, et al. Functional plasticity in the type IV secretion system of *Helicobacter pylori*. *PLoS pathogens*. 2013;9(2):e1003189.

**Table S4. Primers used for PCR and cloning**

<b>Name</b>	<b>Sequence (5' to 3')</b>
Contrasélection for genetic exchange of <i>cagY</i>	
<i>RpsLF</i>	AAC GAG CTC GAT GCT TTA TAA CTA TGG ATT AAA CAC
<i>C2CamR</i>	AAC GGA TCC TTA TCA GTG CGA CAA ACT GGG AT
<i>cagXF</i>	AAC CTC GAG TAA AGG TTG GAG TAT TGT GCC TA
<i>cagYR</i>	AAC GAG CTC TTC TTC ATT CAT GTC TTA ACG C
<i>cagYF</i>	AAC GGA TCC CAT GAA GAA ATC ACC ACA AGC C
<i>virB11R</i>	AAC GCG GCC GCC ATT CGC TAA ATT GCT GCT CA
Cloning to introduce kanamycin or chloramphenicol resistance cassette into <i>rdxA</i>	
<b>HP0955:1U22</b>	AAC GCG GCC GCA TGA ACG CTT GGA ATA CGA TTT
<b>HP0954:318L25</b>	AAC CTG CAG AAA ATC GAT GAT CAC TCT AAC TTT ATA AGA CTC C
<b>HP0954:361U21</b>	AAC GTC GAC CTT GGC GTG AGA TTC AAC CAC
<b>HP0953:547L21</b>	AAC CTC GAG CTA CCT TAA CGC ACA AAC GCT
<b>Kan-F</b>	AAT CTG CAG GGT ACC CGG GTG AC
<b>Kan-R</b>	AAC GTC GAC TCT AGA GGA TCC CC
<b>CAT-F</b>	AAC CTG CAG GCG GAC AAC GAG TAA AAG AG
<b>CAT-R</b>	AAC GTC GAC GCA GGA CGC ACT ACT CTC G
<i>cagY</i> amplification for PCR-RFLP	
<b><i>cagY</i>:5157L24</b>	CCG TTC ATG TTC CAT ACA TCT TTG
<b><i>cagX</i>:1515U22</b>	CTA TGG TGA ATT GGA GCG TGT G