

**Supplementary table 1 Demographics of patients and tissues used for isolating bacteria**

age	gender	pH	Gastric atrophy*	lesion	Biopsy region bacterial strain isolated				
					HP	HAE	NEI	FUS	VEI
27	Male	6.4	C3	None	antrum		antrum	antrum	antrum
63	Female	7.7	O1	None		corpus	corpus	antrum	antrum
58	Male	7.5	O1	GUS	antrum	antrum	antrum	antrum	antrum
59	Female	7.7	O2	None	antrum	antrum	antrum		
26	Male	6.8	C3	None				antrum	antrum
56	Male	7.9	O2	None		antrum		antrum	antrum
54	Female	2.7	O1	DU		antrum	corpus		

GUS, gastric ulcer scar; DU, duodenal ulcer; HP, *H. pylori*; HAE, *Haemophilus spp.*; NEI, *N. subflava*; FUS, *Fusobacterium spp.*; VEI, *Veillonella spp.*;

\* Kimura-Takemoto classification of mucosal change in stomach

**Supplementary Table 2 Primers and their targets**

Primer	Primer sequence 5'-3'
<i>Fusobacterium spp.</i>	
9F	GAGTTTGGATCCTGGCT
785F	GGATTAGATACCCTG GTA
802R	ACTACCAGGGTATCTAATCCTG-3
1510R	CCTTCYGCAGGTTACCTAC
<i>Neisseria spp.</i>	
8F	AGAGTTTGATCCTGGCTCAG
357F	CCTACGGGATCGCAGCAG
515F	GTGCCAGCMGCCGCGGTAA
338R	CTGCTGCCTCCCGTAGGAGT
544R	ATTACCGCGGCTGCTGG
926R	CCGTCAATTCCMTTRAGTT
<i>Veillonella spp.</i>	
9F	GAGTTTGGATCCTGGCT
785F	GGATTAGATACCCTG GTA
536R	GTATTACCGCGGCTGCTG
802R	ACTACCAGGGTATCTAATCCTG-3
926R	CCGTCAATTYYTTTRAGTTT
1510R	CCTTCYGCAGGTTACCTAC

**Supplementary Table 3. Large scale cultures of gastric bacterial strains**

Organism	<i>H. pylori</i>	<i>Haemophilus</i>	<i>Neisseria</i>	<i>Fusobacterium</i>	<i>Veillonella</i>
		7.5 L of			7.5 L of
	200 plates of	BHI broth			GAM broth
Culture medium	BHI* agar with 5% (v/v) horse serum	supplemented with 1.5% (w/v) hematine and 1.5%(w/v)NAD‡	100 plates of BHI agar	15 L of GAM† broth	supplemented with 0.6% (w/v) lactic acid
Culture condition	37 °C microaerobic stationary	37 °C aerobic with shaking	37 °C microaerobic stationary	37 °C anaerobic stationary	37 °C anaerobic stationary
Culture time	5 days	3 days	3 days	3 days	3 days

\* BHI: brain heart infusion † GAM: Gifu anaerobic medium ‡ NAD: nicotinamide adenine dinucleotide

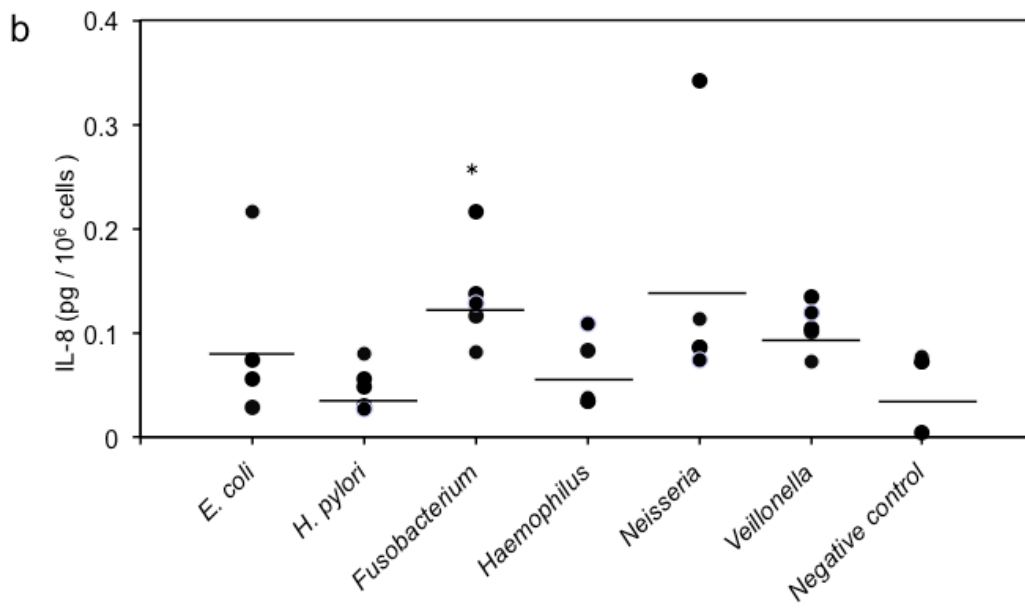
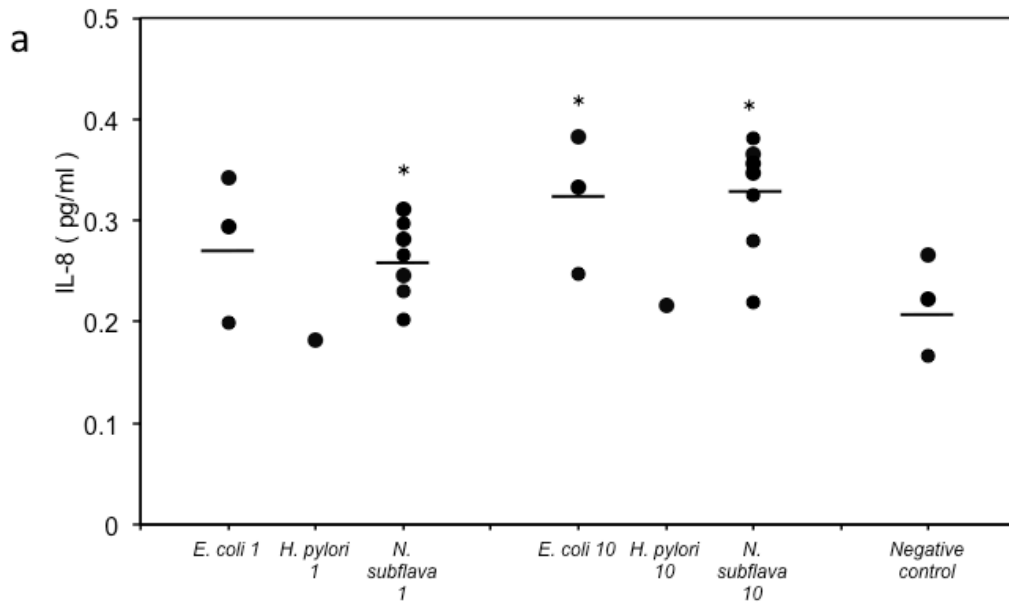
**Supplementary Table 4. PCR primers used for RT-PCR assays.**

Primer	The sequence of primers		PCR amplification condition		
			Temperature (°C)	Time (sec)	Cycle number
TLR2	Forward	5'ATTGTGCCCATGCTCTTTC3'	94	45	35
	Reverse	5'TTCTTCCTTGGAGAGGCTGA3'	60	45	
72			60		
TLR4	Forward	5'AATCCCCTGAGGCATTTAGG3'	94	45	35
	Reverse	5'CCCATCTTCAATTGTCTGG3'	60	45	
72			60		
MD2	Forward	5'GAATCTTCCAAAGCGCAAAG3'	94	45	35
	Reverse	5'AGGATGACAAACTCCAAGCA3'	54	45	
72			60		
CD14	Forward	5'GGTGCCGCTGTAGGAAAGA3'	94	45	30
	Reverse	5'GGTCCTCGAGCGTCAGTTCCT3'	60	45	
72			60		

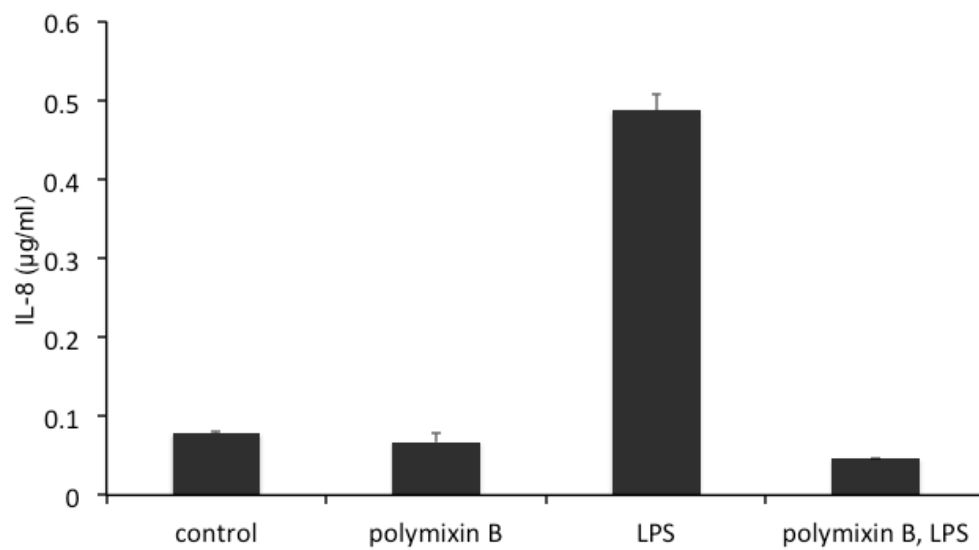
**Supplementary Table 4. The levels of 16S rRNA sequence similarity of clinical isolates of *Neisseria subflava* with standard strain of *N. subflava* (NJ9702 and NJ9703) and *N. flavescense* (LO6168)**

Sequenced region		<i>N. subflava</i> (NJ9702)	<i>N. subflava</i> (NJ9703)	<i>N. flavescense</i> (LO6168)
V1	<i>Neisseria 1</i>	99	99	97
	<i>Neisseria 2</i>	99	99	97
	<i>Neisseria 3</i>	99	99	98
	<i>Neisseria 4</i>	99	100	97
V2	<i>Neisseria 1</i>	99	99	98
	<i>Neisseria 2</i>	99	99	99
	<i>Neisseria 3</i>	99	99	99
	<i>Neisseria 4</i>	99	99	98
V4	<i>Neisseria 1</i>	98	98	97
	<i>Neisseria 2</i>	99	99	98
	<i>Neisseria 3</i>	99	99	97
	<i>Neisseria 4</i>	99	97	98
V5	<i>Neisseria 1</i>	98	98	96
	<i>Neisseria 2</i>	98	98	96
	<i>Neisseria 3</i>	99	99	97
	<i>Neisseria 4</i>	98	98	96

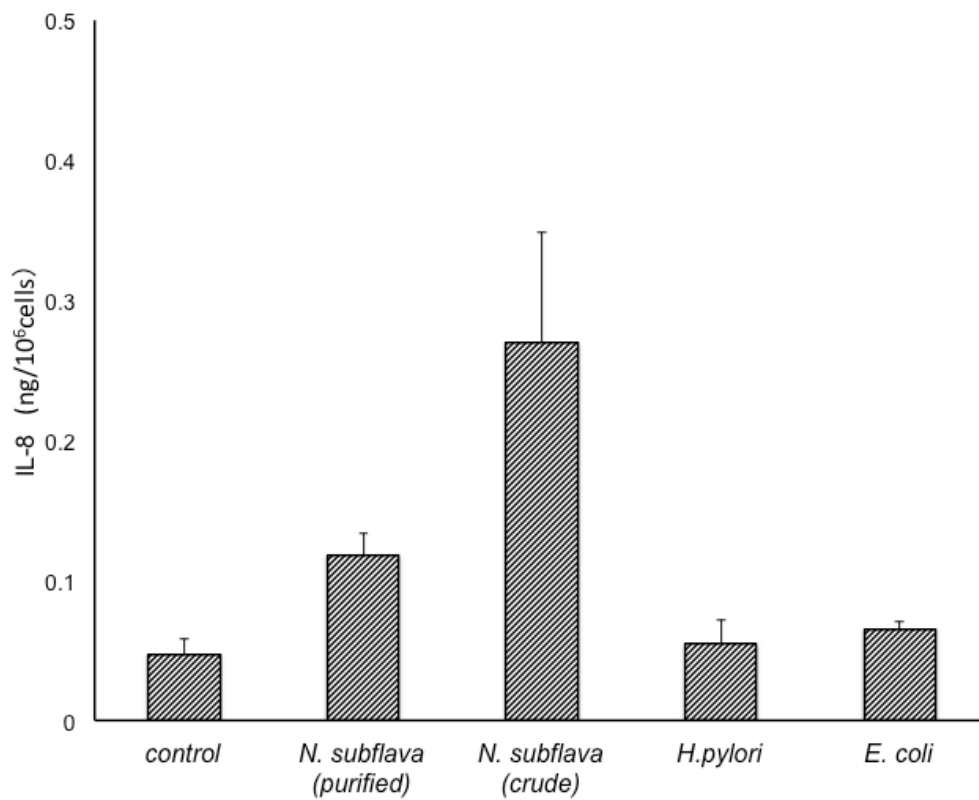
NJ9702, NJ9703, LO6168: NCBI nucleotide accession number.



**Supplementary Figure 1.** IL-8 secretion from AGS stimulated with LPS from *E. coli*, *H. pylori*, *N. subflava*, 1 or 10  $\mu\text{g/ml}$  for 6 hrs. \* $P < 0.05$  vs. control (a). IL-8 secretion from MKN28 cells treated with either purified LPS (*H. pylori* and *E. coli*) or crude LPS from various bacterial species at a concentration of 10  $\mu\text{g/ml}$  for 24 hrs. \* $P < 0.05$  vs. control (b).

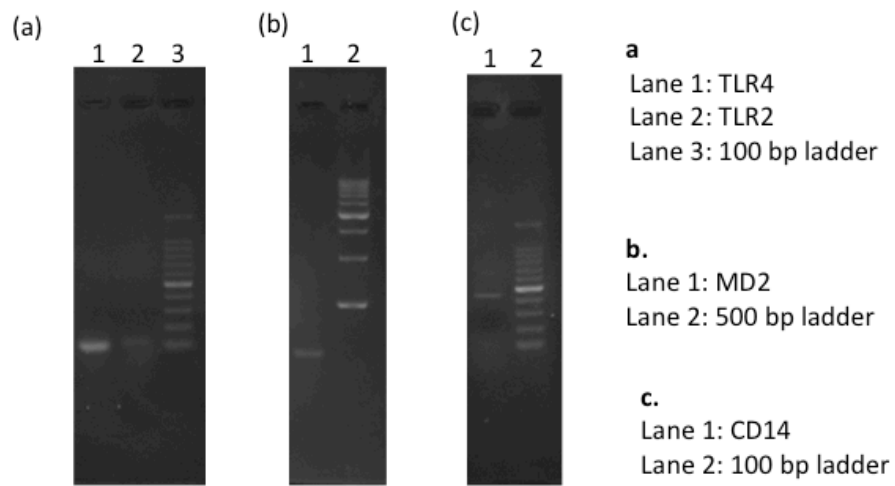


**Supplementary Figure 2.** IL-8 secretion from MKN45 stimulated with *N. subflava* LPS 1  $\mu\text{g/ml}$  for 6 hrs, or LPS preincubated with polymixin B 10  $\mu\text{g/ml}$ .

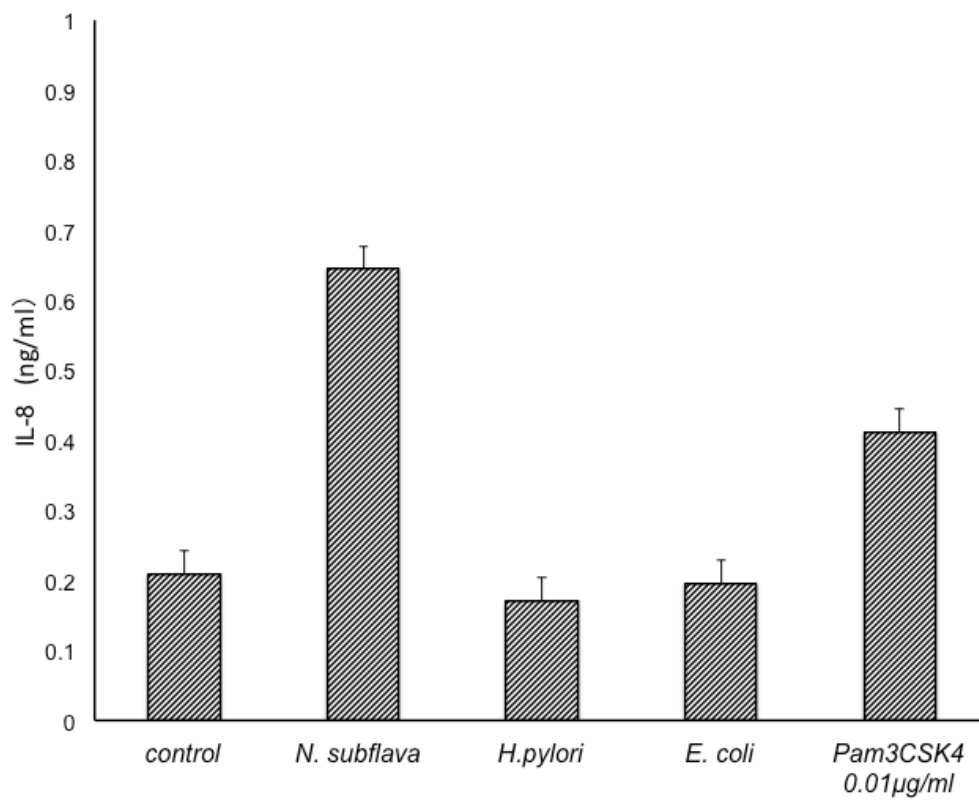


**Supplementary Figure 3** IL-8 secretion from MKN45 stimulated with 1  $\mu\text{g/ml}$  purified *N. subflava* LPS, crude *N. subflava* LPS, *H. pylori* LPS, or *E. coli* LPS for 6 hrs.





**Supplementary Figure 4.** RT-PCR analysis of mRNA for TLR2, TLR4, MD2, and CD14 in MKN45.



**Supplementary Figure 5.** IL-8 secretion from MKN45 stimulated with 1 μg/ml purified *N. subflava* LPS, *H. pylori* LPS, *E. coli* LPS, or 0.01 μg/ml Pam3CSK4 for 6 hrs.