

Supplementary table 9**Comparison of microbial interactions between *Helicobacter pylori* -positive and –negative samples at gastric cancer stages.**HPP: *Helicobacter pylori* positiveHPN: *Helicobacter pylori* negative

Diagnosis	HPP		HPN		p value
	Number of significant OTUs	Ratio of significant OTUs	Number of significant OTUs	Ratio of significant OTUs	
SG	431	3.43%	1553	12.35%	<0.0001
AG	592	4.71%	3648	29.04%	<0.0001
IM	574	4.57%	1966	15.65%	<0.0001

Fisher's exact test was performed to compare the ratio of significant co-occurrence and co-excluding correlations coefficients (> 0.2 or < -0.2 , $q < 0.05$)

SG: Superficial gastritis

AG: Atrophic gastritis

IM: Intestinal metaplasia