

Beta Diversities: measured by Braycurtis- dissimilarity distance matrices and Jaccard similarity coefficient, analyzed using analysis of molecular variance (AMOVA).

**Supplementary table 2: Biopsy site**

Phenotype	Biopsy site	p- value (Braycurtis)	p-value (Jaccard)
SG	Antrum-Body-Fundus	0.93	0.221
AG	Antrum-Body-Fundus	0.97	0.903
IM	Antrum-Body-Fundus	0.56	0.083
GC	Cardia-Noncardia	0.86	0.456

**Supplementary table 3: Disease Phenotype**

Category	p- value (Braycurtis)	p-value (Jaccard)
SG-AG	0.99	0.96
SG-IM	0.31	0.14
SG-GC	0.031*	0.018*
AG-IM	0.21	0.29
AG-GC	0.031*	0.082
IM-GC	0.038*	0.0023*

SG: Superficial gastritis  
 AG: Atrophic gastritis  
 IM: Intestinal metaplasia  
 GC: Gastric cancer