

**Supplementary Table S1.** List of custom probes used for the NanoString mRNA gene expression analysis.

| <b>Gene</b>     | <b>Accession Number</b> | <b>Class Name</b> |
|-----------------|-------------------------|-------------------|
| ATM             | NM_138292.3             | Endogenous        |
| CDH1            | NM_004360.2             | Endogenous        |
| CTNNB1          | NM_001098210.1          | Endogenous        |
| CTNND1          | NM_001331.2             | Endogenous        |
| EBER1           | KP195701.1              | Endogenous        |
| EGF             | NM_001963.4             | Endogenous        |
| EGFR            | NM_201282.1             | Endogenous        |
| GSK3B           | NM_002093.2             | Endogenous        |
| HER2            | NM_001005862.1          | Endogenous        |
| KLRG1           | NM_001329099.1          | Endogenous        |
| MDM2            | NM_001145337.1          | Endogenous        |
| MDM4            | NM_001204172.1          | Endogenous        |
| MLH1            | NM_000249.2             | Endogenous        |
| MMP2            | NM_004530.5             | Endogenous        |
| MMP9            | NM_004994.2             | Endogenous        |
| MSH2            | NM_000251.1             | Endogenous        |
| MSH6            | NM_000179.1             | Endogenous        |
| PMS2            | NM_000535.5             | Endogenous        |
| RARa            | NM_001033603.1          | Endogenous        |
| RARb            | NM_000965.3             | Endogenous        |
| RARg            | NM_000966.3             | Endogenous        |
| RXRa            | NM_002957.4             | Endogenous        |
| RXRb            | NM_021976.3             | Endogenous        |
| RXRg            | NM_006917.3             | Endogenous        |
| SNAI1           | NM_005985.2             | Endogenous        |
| SNAI2           | NM_003068.3             | Endogenous        |
| SRC             | NM_005417.3             | Endogenous        |
| TIPE1oTNFAIP8L1 | NM_001167942.1          | Endogenous        |
| TIPE3oTNFAIP8L3 | NM_207381.2             | Endogenous        |
| TP53            | NM_000546.2             | Endogenous        |
| TWIST1          | NM_000474.3             | Endogenous        |
| VCL             | NM_014000.2             | Endogenous        |
| Wnt1            | NM_005430.2             | Endogenous        |
| Wnt2            | NM_003391.2             | Endogenous        |
| Wnt3            | NM_030753.3             | Endogenous        |
| Wnt5a           | NM_003392.3             | Endogenous        |
| Wnt7a           | NM_004625.3             | Endogenous        |
| ZEB1            | NM_001128128.1          | Endogenous        |
| B2M             | NM_004048.2             | Housekeeping      |
| GAPDH           | NM_001256799.1          | Housekeeping      |
| HPRT1           | NM_000194.1             | Housekeeping      |
| RPL19           | NM_000981.3             | Housekeeping      |

**Supplementary Table S2.** Considering all subjects, higher PGII serum level is associated with H. pylori infection, independently of rs9471643 polymorphism genotype.

| rs9471643  | <i>H. pylori-positive</i> |                  | <i>H. pylori-negative</i> |                | <i>p</i> * |
|------------|---------------------------|------------------|---------------------------|----------------|------------|
|            | Cases, n                  | PGII, ng/mL §    | Cases, n                  | PGII, ng/mL §  |            |
| C/C        | 8                         | 20.4 (16.0–37.0) | 10                        | 9.8 (7.1–14.9) | 0.02       |
| C/G        | 64                        | 16.1 (13.8–20.5) | 26                        | 7.1 (5.1–9.5)  | <0.0001    |
| G/G        | 104                       | 16.0 (10.0–28.7) | 58                        | 8.0 (5.7–12.5) | <0.0001    |
| <i>p</i> * |                           | 0.36             |                           | 0.18           |            |

§ Median (IQR); Kruskal-Wallis test. \*, P value.

**Supplementary Table S3.** PGII serum level shows an increasing trend in preneoplastic ACAG diseases and GCs <sup>a</sup>.

| rs9471643  | Controls |               | FDR-GC |                 | ACAG |                  | GC |                  | <i>p</i> & |
|------------|----------|---------------|--------|-----------------|------|------------------|----|------------------|------------|
|            | n        | PGII §        | n      | PGII §          | n    | PGII §           | n  | PGII §           |            |
| C/C        | 3        | 6.6 (6.3–6.8) | 4      | 9.8 (8.2–10.9)  | 3    | 18.4 (16.6–25.5) | 8  | 22.3 (17.8–40.0) | 0.0001     |
| C/G        | 18       | 5.8 (4.6–6.8) | 31     | 7.6 (6.7–14.6)  | 18   | 9.5 (8.0–12.7)   | 23 | 17.4 (10.3–23.2) | <0.0001    |
| G/G        | 31       | 5.7 (4.7–7.8) | 39     | 10.0 (7.2–12.5) | 41   | 10.2 (7.1–14.8)  | 49 | 17.0 (11.0–34.3) | <0.0001    |
| <i>p</i> * |          | 0.58          |        | 0.79            |      | 0.08             |    | 0.26             |            |

P \* and §, p value and Median (IQR), by Kruskal-Wallis test; p &, p value by Jonckheere-Terpstra trend test. <sup>a</sup> Patients with dysplasia were not reported because we have only 2 cases.