

**Supplementary Table S1. Patients' characteristics in the esophageal and colorectal cancer cohorts**

<b>EC cohort</b>	<b>HC (n=90)</b>	<b>EC (n=25)</b>	<b>P value</b>
Median age [IQR] (years)	70 [62–74]	69 [65–76]	0.721 <sup>†</sup>
Sex			
Female	8 (8.9%)	2 (8.0%)	1.000 <sup>§</sup>
Male	82 (91.1%)	23 (92.0%)	
Median serum Cr [IQR] (mg/dl)	0.85 [0.77–0.95]	0.84 [0.76–0.96]	0.822 <sup>†</sup>
Stage			
I		13 (52.0%)	
II		3 (12.0%)	
III		4 (16.0%)	
IV		5 (20.0%)	
Histological type			
Adenocarcinoma (well to moderately)		3 (12.0%)	
Adenocarcinoma (poorly)		1 (4.0%)	
SCC (well to moderately)		20 (80.0%)	
SCC (poorly)		1 (4.0%)	
T stage			
T1		15 (60.0%)	
T2		1 (4.0%)	
T3		5 (20.0%)	
T4		4 (16.0%)	
<b>CRC cohort</b>	<b>HC (n=92)</b>	<b>CRC (n=96)</b>	<b>P value</b>
Median age [IQR] (years)	69 [66–74]	72 [64–78]	0.115 <sup>†</sup>
Sex			0.851 <sup>‡</sup>
Female	39 (42.4%)	42 (43.8%)	
Male	53 (57.6%)	54 (56.3%)	
Median serum Cr [IQR] (mg/dl)	0.78 [0.67–0.87]	0.73 [0.63–0.87]	0.212 <sup>†</sup>
Stage			
0		17 (17.7%)	
I		14 (14.6%)	
II		20 (20.8%)	
III		21 (21.9%)	
IV		24 (25.0%)	
Histological type			
Differentiated		86 (89.6%)	
Undifferentiated		10 (10.4%)	
T stage			
Tis		17 (17.7%)	
T1		10 (10.4%)	
T2		6 (6.3%)	
T3		39 (40.6%)	
T4		24 (25%)	

<sup>†</sup>, Mann-Whitney U test

<sup>‡</sup>, the  $\chi^2$  test

<sup>§</sup>, Fisher's exact probability test

HC, healthy control; EC, esophageal cancer; CRC, colorectal cancer; IQR, interquartile range; Cr, creatinine; Differentiated, well to moderately differentiated adenocarcinoma; Undifferentiated, poorly differentiated adenocarcinoma

**Supplementary Table S2. Serum exosomal Dicer in the gastrointestinal cancer**

	Serum exosomal Dicer (ng/ml)		<i>P</i> value
	Median [IQR]		
	HC	Cancer	
<b>GC cohort</b>	196.4	206.0	0.004 <sup>†</sup>
	[173.0–218.1]	[192.7–220.5]	
<b>EC cohort</b>	191.4	196.9	0.576 <sup>†</sup>
	[173.4–205.5]	[182.4–205.7]	
<b>CRC cohort</b>	191.2	199.0	0.432 <sup>†</sup>
	[174.2–213.9]	[173.6–222.0]	

<sup>†</sup>, Mann-Whitney U test

IQR, interquartile range

HC, healthy control; GC, gastric cancer, EC, esophageal cancer; CRC, colorectal cancer

**Supplementary Table S3. Serum exosomal Dicer of whole stage I gastric cancer cohort**

	Median [IQR]		<i>P</i> value
	HC	Stage I GC	
<b>Serum exosomal Dicer (ng/ml)</b>	196.4	204.7	0.010 <sup>†</sup>
	[173.0–218.1]	[193.2–220.6]	

<sup>†</sup>, Mann-Whitney U test

IQR, interquartile range; HC, healthy control; GC, gastric cancer

**Supplementary Table S4. Serum exosomal Dicer of stage I differentiated gastric cancer cohort**

	Median [IQR]		<i>P</i> value
	HC	Stage I differentiated GC	
<b>Serum exosomal Dicer (ng/ml)</b>	196.4	204.7	0.011 <sup>†</sup>
	[173.0–218.1]	[192.9–221.9]	

<sup>†</sup>, Mann-Whitney U test

IQR, interquartile range; HC, healthy control; GC, gastric cancer

**Supplementary Table S5. Diagnostic power of each biomarker**

<b>Whole stage differentiated GC</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>AUC [95% CI]</b>
<b>CEA</b>	8.5% (6/71)	86.7% (78/90)	0.497 [0.406-0.588]
<b>CA19-9</b>	19.7% (14/71)	88.9% (80/90)	0.576 [0.485-0.667]
<b>Serum exosomal Dicer + <i>H. pylori</i></b>	77.5% (55/71)	62.2% (56/90)	0.762 [0.689-0.835]
<b>Stage I differentiated GC</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>AUC [95% CI]</b>
<b>CEA</b>	3.5% (2/57)	86.7% (78/90)	0.473 [0.377-0.569]
<b>CA19-9</b>	12.3% (7/57)	88.9% (80/90)	0.533 [0.435-0.631]
<b>Serum exosomal Dicer + <i>H. pylori</i></b>	71.9% (41/57)	62.2% (56/90)	0.758 [0.678-0.838]

GC, gastric cancer; *H. pylori*, *Helicobacter pylori*; AUC, area under the curve; 95% CI, 95% confidence interval; CEA, carcinoembryonic antigen; CA19-9, cancer antigen 19-9.

Cut-off values for GC: CEA >5.0 ng/ml; CA19-9 >37.0 U/ml

**Supplementary Table S6. Internal cross-validation of serum exosomal Dicer + *H. pylori***

	<b>Training set AUC [95 % CI]</b>	<b>Test set AUC [95% CI]</b>
<b>Differentiated GC</b>	0.761 [0.617-0.872]	0.749 [0.732-0.792]
<b>Stage I differentiated GC</b>	0.758 [0.729-0.788]	0.756 [0.629-0.873]

GC, gastric cancer; AUC, area under the curve; 95% CI, 95% confidence interval