

Table SI. Distribution of the serum levels of seven detection indexes in different groups.

Group	Tumor marker						
	CST4 (U/ml)	AFP (ng/ml)	CEA (ng/ml)	CA199 (U/ml)	CA125 (U/ml)	CA153 (U/ml)	CA724 (U/ml)
Observation	87.96 (56.30, 132.20)	2.75 (1.80, 4.27)	3.48 (1.97, 5.84)	8.19 (4.30, 52.28)	19.10 (11.18, 35.23)	10.45 (7.53, 17.08)	1.78 (1.16, 4.33)
Control	49.95 (32.14, 81.63)	2.48 (1.75, 3.23)	2.24 (1.36, 3.50)	5.24 (2.54, 11.53)	13.45 (9.60, 19.05)	8.35 (6.93, 12.03)	1.33 (0.79, 2.57)
Gastrointestinal polyps	49.89 (30.58, 81.44)	2.76 (2.29, 3.28)	1.95 (1.34, 4.07)	4.91 (2.31, 12.44)	12.60 (9.50, 16.60)	8.70 (7.45, 11.75)	1.93 (0.84, 3.01)
Non-gastrointestinal polyps	48.34 (35.14, 86.35)	1.94 (1.54, 3.14)	2.60 (1.36, 3.47)	6.35 (3.12, 10.84)	14.80 (9.60, 21.30)	8.0 (6.70, 13.20)	1.13 (0.75, 2.03)
Metastasis	96.02 (65.26, 172.42)	2.75 (1.80, 4.68)	4.32 (2.05, 34.81)	26.48 (6.81, 135.30)	28.25 (13.33, 76.30)	12.20 (7.70, 18.13)	2.22 (1.07, 8.88)
Non-metastasis	80.49 (35.48, 113.54)	2.72 (1.82, 4.22)	2.86 (1.93, 4.80)	5.77 (3.60, 17.09)	15.60 (10.55, 27.10)	10.00 (7.10, 16.80)	1.65 (1.15, 3.92)
Esophageal cancer	85.29 (38.09, 203.67)	2.80 (1.80, 4.13)	2.27±1.62	7.99 (3.69, 13.74)	27.10 (11.50, 84.20)	10.31±4.98	3.32 (1.29, 5.85)
Stomach cancer	78.27 (48.71, 107.65)	2.86 (1.74, 4.50)	3.40 (1.97, 8.96)	6.47 (4.10, 52.28)	19.90 (10.25, 33.93)	9.75 (7.05, 14.65)	2.17 (1.21, 2.96)
Pancreatic cancer	187.05±116.85	3.02±1.59	2.92 (1.87, 4.83)	72.89 (19.01, 931.15)	41.90 (10.95, 125.15)	17.55 (14.28, 23.45)	1.73 (1.09, 11.46)
Colon cancer	111.37±64.45	2.98 (2.18, 5.70)	4.38 (2.63, 40.67)	18.81 (4.55, 80.38)	15.35 (11.43, 31.73)	12.00 (8.83, 17.85)	1.06 (0.55, 2.08)
Rectal cancer	80.75 (33.38, 107.26)	2.88±1.15	2.73 (1.41, 7.96)	5.10 (2.68, 13.54)	15.70 (10.90, 22.80)	8.30 (7.25, 18.05)	1.58 (1.18, 13.94)

CST4, cystatin-S; AFP, α -fetoprotein; CEA, carcinoembryonic antigen; CA, carbohydrate antigen.

Table SII. Comparison of the sensitivity of CST4 and related tumor markers in digestive system diagnosis.

Tumor marker	CST4		P-value
	Positive	Negative	
AFP			
Positive	2	3	<0.001
Negative	36	59	
CEA			
Positive	14	17	1.000
Negative	24	45	
CA199			
Positive	14	12	0.783
Negative	24	50	
CA125			
Positive	16	9	0.353
Negative	22	53	
CA153			
Positive	3	2	<0.001
Negative	35	60	
CA724			
Positive	9	9	0.020
Negative	29	53	
Group A			
Positive	42	18	1.000
Negative	24	44	
Group B			
Positive	25	25	0.875
Negative	13	37	
Group C			
Positive	29	33	0.003
Negative	9	29	
Group D			
Positive	38	18	<0.001
Negative	0	44	
Group E			
Positive	38	25	<0.001
Negative	0	37	
Group F			
Positive	38	33	<0.001
Negative	0	29	

CST4, cystatin-S; AFP, α -fetoprotein; CEA, carcinoembryonic antigen; CA, carbohydrate antigen.

Table SIII. Comparison of the specificity of CST4 and related tumor markers in digestive system diagnosis.

Tumor marker	CST4		P-value
	Positive	Negative	
AFP			
Positive	0	17	0.002
Negative	1	82	
CEA			
Positive	1	9	1.000
Negative	16	74	
CA199			
Positive	1	1	0.003
Negative	16	82	
CA125			
Positive	2	3	0.090
Negative	15	80	
CA153			
Positive	0	0	0.001
Negative	17	83	
CA724			
Positive	1	5	0.319
Negative	16	78	
Group A			
Positive	1	10	1.000
Negative	16	73	
Group B			
Positive	4	9	1.000
Negative	13	74	
Group C			
Positive	5	18	1.000
Negative	12	65	
Group D			
Positive	17	10	0.023
Negative	0	73	
Group E			
Positive	71	9	0.047
Negative	0	74	
Group F			
Positive	17	18	<0.001
Negative	0	65	

CST4, cystatin-S; AFP, α -fetoprotein; CEA, carcinoembryonic antigen; CA, carbohydrate antigen.

Table SIV. Comparison of the sensitivity between group A and group D in digestive system diagnosis.

Group A	Group D		P-value
	Positive	Negative	
Positive	32	0	<0.001
Negative	24	44	

Table SV. Comparison of the sensitivity between group B and group E in digestive system diagnosis.

Group B	Group E		P-value
	Positive	Negative	
Positive	50	0	<0.001
Negative	13	37	

Table SVI. Comparison of the sensitivity between group C and group F in digestive system diagnosis.

Group C	Group F		P-value
	Positive	Negative	
Positive	62	0	0.012
Negative	9	29	

Table SVII. Comparison of the specificity between group A and group D in digestive system diagnosis.

Group A	Group D		P-value
	Positive	Negative	
Positive	11	0	<0.001
Negative	16	73	

Table SVIII. Comparison of the specificity between group B and group E in digestive system diagnosis.

Group B	Group E		P-value
	Positive	Negative	
Positive	13	0	<0.001
Negative	13	74	

Table SIX. Comparison of the specificity between group C and group F in digestive system diagnosis.

Group C	Group F		P-value
	Positive	Negative	
Positive	23	0	0.001
Negative	12	65	