

Simultaneous Analysis of MLH1, MSH2, MSH6, PMS2 and KRAS in Patients with Gastric and Colon Cancer Using Stochastic Sensors

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Table S1. Determination of MLH1, MSH2, MSH6, PMS2 and KRAS in tissue samples (N=10).

Sample No.	Sensor	MLH1 ng mL ⁻¹	MSH2 pg mL ⁻¹	MSH6 pg mL ⁻¹	PMS2 ng mL ⁻¹	KRAS µg mL ⁻¹
1	MD/SPEXF84	27.53±0.02	727.44±0.03	24.10±0.02	1.20±0.03	1.10±0.01
	MD/SPEXF88	26.94±0.03	730.32±0.04	24.24±0.03	1.21±0.02	1.09±0.02
2	MD/SPEXF84	101.70±0.02	516.89±0.02	17.77±0.02	61.20±0.03	11.36±0.04
	MD/SPEXF88	99.47±0.03	517.03±0.03	17.31±0.04	61.21±0.02	11.25±0.02
3	MD/SPEXF84	61.98±0.02	369.89±0.01	50.01±0.04	105.35±0.02	4.39±0.03
	MD/SPEXF88	62.00±0.03	368.87±0.02	49.08±0.02	106.00±0.03	4.21±0.02
4	MD/SPEXF84	101.70±0.03	13.98±0.01	97.53±0.03	3.47±0.03	22.28±0.02
	MD/SPEXF88	100.96±0.02	13.99±0.03	98.82±0.02	3.52±0.01	22.32±0.03
5	MD/SPEXF84	47.74±0.03	727.48±0.04	18.67±0.02	2.20±0.02	2.90±0.01

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	MD/SPEXF88	48.32±0.02	729.60±0.03	18.27±0.03	2.35±0.02	2.50±0.03
6	MD/SPEXF84	14.39±0.02	180.95±0.03	21.20±0.03	814.00±0.04	7.73±0.02
	MD/SPEXF88	14.00±0.06	181.60±0.02	22.40±0.02	813.95±0.02	7.29±0.03
7	MD/SPEXF84	89.53±0.02	220.03±0.04	23.48±0.07	1.70±0.03	0.79±0.02
	MD/SPEXF88	89.94±0.07	218.98±0.03	22.60±0.02	1.73±0.02	0.81±0.02
8	MD/SPEXF84	67.46±0.03	1198.48±0.02	16.20±0.02	1.80±0.07	3.53±0.02
	MD/SPEXF88	67.98±0.02	1199.60±0.03	16.18±0.03	1.73±0.01	3.50±0.01
9	MD/SPEXF84	88.41±0.02	54.44±0.02	14.70±0.01	350.09±0.03	20.06±0.02
	MD/SPEXF88	90.02±0.03	55.02±0.02	14.35±0.03	351.11±0.02	19.76±0.03
10	MD/SPEXF84	14.67±0.01	450.67±0.02	22.59±0.01	46.50±0.03	2.50±0.03
	MD/SPEXF88	14.70±0.03	449.20±0.03	22.60±0.03	46.48±0.04	2.32±0.04
11	MD/SPEXF84	67.46±0.02	323.40±0.03	272.90±0.02	513.97±0.03	0.16±0.02
	MD/SPEXF88	67.00±0.03	322.73±0.05	271.14±0.03	515.04±0.05	0.15±0.03
12	MD/SPEXF84	32.00±0.01	1198.74±0.02	19.20±0.04	4.87±0.03	5.61±0.02
	MD/SPEXF88	31.69±0.02	1199.60±0.03	19.15±0.02	4.84±0.02	5.04±0.02
13	MD/SPEXF84	92.98±0.03	860.34±0.02	9.94±0.02	5.01±0.02	8.24±0.01
	MD/SPEXF88	91.73±0.02	862.26±0.02	10.20±0.03	4.84±0.03	8.04±0.03
14	MD/SPEXF84	55.58±0.02	732.35±0.02	27.33±0.03	1.69±0.01	13.00±0.01
	MD/SPEXF88	56.00±0.03	730.46±0.02	27.34±0.02	1.70±0.03	12.95±0.02
15	MD/SPEXF84	16.99±0.02	380.79±0.03	13.53±0.01	3.60±0.03	12.71±0.01
	MD/SPEXF88	15.93±0.07	381.89±0.02	13.81±0.01	3.57±0.02	13.03±0.03
16	MD/SPEXF84	10.43±0.03	1130.10±0.02	18.65±0.03	2.60±0.04	11.15±0.01
	MD/SPEXF88	9.87±0.07	1132.14±0.08	18.70±0.02	2.67±0.03	11.20±0.03

Supplementary Material

17	MD/SPEXF84	11.32±0.02	101.77±0.03	18.12±0.02	3.02±0.03	1.97±0.02
	MD/SPEXF88	11.13±0.03	100.92±0.02	18.70±0.04	2.66±0.01	1.90±0.02
18	MD/SPEXF84	35.55±0.01	184.58±0.02	157.00±0.02	5.95±0.02	5.20±0.01
	MD/SPEXF88	36.06±0.02	185.02±0.03	156.37±0.01	6.02±0.03	5.10±0.04
19	MD/SPEXF84	12.32±0.04	803.96±0.04	19.30±0.04	3.97±0.02	1.47±0.03
	MD/SPEXF88	12.12±0.02	804.02±0.02	19.31±0.02	3.95±0.03	1.45±0.05
20	MD/SPEXF84	35.55±0.02	51.61±0.03	27.31±0.02	21.14±0.03	2.40±0.02
	MD/SPEXF88	35.60±0.03	52.00±0.02	27.40±0.03	21.20±0.02	2.42±0.01
21	MD/SPEXF84	90.66±0.02	860.47±0.03	18.73±0.03	4.90±0.03	3.72±0.02
	MD/SPEXF88	91.02±0.03	862.26±0.02	19.00±0.02	4.98±0.02	3.33±0.02
22	MD/SPEXF84	83.06±0.01	109.99±0.01	14.00±0.03	3.95±0.02	5.02±0.04
	MD/SPEXF88	84.02±0.08	110.02±0.03	14.72±0.02	3.97±0.04	5.00±0.07
23	MD/SPEXF84	131.30±0.02	113.01±0.02	19.40±0.01	4.02±0.03	3.20±0.02
	MD/SPEXF88	129.47±0.03	113.15±0.07	19.31±0.02	4.40±0.05	3.27±0.04
24	MD/SPEXF84	131.28±0.03	299.16±0.03	15.00±0.02	3.55±0.03	3.40±0.03
	MD/SPEXF88	130.49±0.07	297.43±0.02	15.03±0.03	3.57±0.02	3.39±0.04
T-TEST		2.11	2.09	2.08	2.10	1.47

Supplementary Material

Table S2. Determination of MLH1, MSH2, MSH6, PMS2 and KRAS in saliva samples (N=10).

Sample No.	Sensor	MLH1 ng mL ⁻¹	MSH2 pg mL ⁻¹	MSH6 pg mL ⁻¹	PMS2 ng mL ⁻¹	KRAS µg mL ⁻¹
1	MD/SPEXF84	46.87±0.03	1682.60±0.03	16.57±0.02	3.42±0.03	7.49±0.02
	MD/SPEXF88	46.89±0.02	1683.12±0.04	16.92±0.03	3.31±0.05	7.18±0.03
2	MD/SPEXF84	671.47±0.03	349.51±0.02	43.47±0.03	3.70±0.03	1.42±0.04
	MD/SPEXF88	673.25±0.02	346.57±0.04	43.45±0.05	3.62±0.02	1.83±0.07
3	MD/SPEXF84	57.64±0.02	1027.28±0.04	9.30±0.04	3.05±0.02	4.37±0.02
	MD/SPEXF88	57.40±0.03	1026.95±0.07	9.38±0.02	3.03±0.04	4.30±0.03
4	MD/SPEXF84	46.87±0.03	4.36±0.04	24.50±0.04	20.31±0.03	14.30±0.03
	MD/SPEXF88	46.50±0.02	4.81±0.02	24.46±0.03	20.74±0.02	14.75±0.02
5	MD/SPEXF84	78.09±0.02	21.47±0.03	17.84±0.04	0.98±0.05	37.85±0.04
	MD/SPEXF88	80.19±0.07	21.50±0.04	17.44±0.02	0.96±0.02	37.23±0.03
6	MD/SPEXF84	78.09±0.03	986.11±0.03	17.51±0.04	3.63±0.01	11.36±0.03
	MD/SPEXF88	78.24±0.05	984.87±0.04	17.31±0.02	3.86±0.03	11.40±0.02
7	MD/SPEXF84	46.87±0.03	1828.90±0.03	19.87±0.03	2.59±0.04	2.64±0.04
	MD/SPEXF88	47.02±0.07	1830.04±0.02	20.60±0.05	2.20±0.03	2.97±0.03
8	MD/SPEXF84	135.03±0.02	623.03±0.02	14.27±0.03	1.39±0.02	28.18±0.03
	MD/SPEXF88	134.97±0.02	623.91±0.03	14.93±0.02	1.53±0.01	28.09±0.02
9	MD/SPEXF84	60.48±0.03	4.46±0.03	37.88±0.04	5.10±0.02	11.36±0.04
	MD/SPEXF88	61.03±0.04	4.81±0.02	37.48±0.02	5.14±0.04	11.72±0.05
10	MD/SPEXF84	27.53±0.03	2.53±0.04	36.70±0.03	1.83±0.03	5.96±0.03
	MD/SPEXF88	27.40±0.02	2.51±0.01	36.64±0.02	1.87±0.02	5.90±0.02

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11	MD/SPEXF84	60.48±0.02	516.89±0.03	37.48±0.05	759.14±0.02	13.99±0.03
	MD/SPEXF88	61.07±0.05	518.10±0.05	37.50±0.03	759.36±0.01	14.02±0.02
12	MD/SPEXF84	48.62±0.03	603.77±0.05	18.15±0.04	62.35±0.04	14.59±0.02
	MD/SPEXF88	48.17±0.05	603.46±0.02	18.70±0.02	62.69±0.03	14.18±0.03
13	MD/SPEXF84	65.05±0.04	16.51±0.03	34.40±0.03	14.84±0.02	3.27±0.03
	MD/SPEXF88	65.40±0.02	16.40±0.02	34.24±0.01	14.50±0.03	3.15±0.02
14	MD/SPEXF84	86.23±0.02	487.23±0.04	27.40±0.03	3.55±0.04	1.47±0.03
	MD/SPEXF88	86.40±0.01	489.50±0.03	27.08±0.02	3.52±0.01	1.50±0.02
15	MD/SPEXF84	37.42±0.02	229.03±0.01	18.59±0.02	23.71±0.05	19.38±0.02
	MD/SPEXF88	37.40±0.01	228.57±0.03	18.70±0.03	23.68±0.03	19.31±0.04
16	MD/SPEXF84	49.83±0.02	2460.12±0.05	35.02±0.01	24.16±0.02	25.15±0.01
	MD/SPEXF88	50.02±0.04	2458.80±0.03	34.29±0.02	24.10±0.04	26.02±0.04
17	MD/SPEXF84	49.22±0.02	88.43±0.02	22.14±0.03	320.15±0.04	3.29±0.01
	MD/SPEXF88	50.03±0.02	88.21±0.03	22.21±0.02	324.36±0.03	3.80±0.05
18	MD/SPEXF84	27.92±0.02	290.92±0.03	13.76±0.02	53.54±0.03	5.77±0.02
	MD/SPEXF88	27.80±0.03	291.11±0.02	13.74±0.03	53.87±0.02	5.70±0.03
19	MD/SPEXF84	49.22±0.02	2507.94±0.02	12.97±0.02	8.31±0.02	19.39±0.03
	MD/SPEXF88	50.07±0.03	2508.30±0.03	13.32±0.02	8.48±0.02	18.34±0.02
20	MD/SPEXF84	50.44±0.03	290.03±0.03	4.85±0.03	51.85±0.02	0.78±0.01
	MD/SPEXF88	49.87±0.04	287.82±0.04	5.96±0.05	51.65±0.03	0.77±0.03
21	MD/SPEXF84	65.05±0.02	87.93±0.02	18.79±0.04	2.36±0.02	0.27±0.04
	MD/SPEXF88	65.40±0.03	88.21±0.04	18.41±0.02	2.66±0.03	0.30±0.01
22	MD/SPEXF84	15.24±0.03	293.14±0.02	19.03±0.02	13.66±0.03	2.95±0.02

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	MD/SPEXF88	15.15±0.07	291.14±0.02	18.45±0.03	13.32±0.02	2.97±0.03
23	MD/SPEXF84	52.95±0.03	291.12±0.03	27.65±0.03	54.35±0.02	26.08±0.02
	MD/SPEXF88	53.00±0.04	849.60±0.03	27.08±0.04	53.75±0.03	27.03±0.04
24	MD/SPEXF84	3.64±0.02	1710.12±0.04	22.19±0.03	16.48±0.02	2.52±0.01
	MD/SPEXF88	3.63±0.01	1709.70±0.01	22.21±0.01	16.50±0.03	2.50±0.03
25	MD/SPEXF84	117.60±0.02	101.97±0.04	14.12±0.03	6.64±0.03	35.16±0.03
	MD/SPEXF88	117.15±0.03	102.85±0.03	14.40±0.02	6.84±0.02	35.02±0.08
26	MD/SPEXF84	168.69±0.03	100.05±0.02	27.00±0.02	55.36±0.02	26.44±0.03
	MD/SPEXF88	170.02±0.05	99.87±0.07	27.34±0.04	54.97±0.04	27.00±0.05
27	MD/SPEXF84	8.46±0.02	61.11±0.03	18.50±0.02	37.47±0.03	15.87±0.04
	MD/SPEXF88	9.02±0.07	62.00±0.05	18.41±0.03	38.05±0.04	15.19±0.02
28	MD/SPEXF84	54.91±0.03	1748.96±0.07	9.14±0.07	21.48±0.04	12.19±0.03
	MD/SPEXF88	55.00±0.04	1750.60±0.03	9.02±0.03	20.96±0.03	13.00±0.02
29	MD/SPEXF84	35.10±0.02	1821.60±0.04	14.14±0.02	10.47±0.03	12.59±0.04
	MD/SPEXF88	34.97±0.06	1820.97±0.03	14.30±0.04	11.02±0.02	12.40±0.03
30	MD/SPEXF84	80.04±0.03	1055.86±0.02	11.70±0.03	37.47±0.05	1.97±0.04
	MD/SPEXF88	79.87±0.04	1052.90±0.08	12.09±0.05	38.02±0.04	2.00±0.02
31	MD/SPEXF84	78.09±0.03	319.22±0.03	18.37±0.04	21.47±0.03	11.49±0.04
	MD/SPEXF88	80.02±0.05	320.14±0.02	18.70±0.03	22.05±0.02	11.37±0.02
32	MD/SPEXF84	80.04±0.02	632.17±0.02	12.00±0.04	25.94±0.03	10.48±0.03
	MD/SPEXF88	79.93±0.07	635.40±0.04	11.04±0.05	26.00±0.02	11.02±0.05
33	MD/SPEXF84	51.68±0.02	2823.10±0.02	14.19±0.06	23.46±0.02	12.15±0.02
	MD/SPEXF88	52.00±0.01	2824.96±0.03	14.30±0.02	23.52±0.02	12.00±0.01

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34	MD/SPEXF84	78.09±0.03	245.03±0.02	12.17±0.04	21.47±0.03	15.71±0.02
	MD/SPEXF88	80.00±0.02	243.97±0.03	12.32±0.03	20.97±0.01	15.60±0.01
35	MD/SPEXF84	19.78±0.03	84.45±0.03	5.70±0.03	12.97±0.02	12.47±0.03
	MD/SPEXF88	20.03±0.05	85.02±0.02	5.68±0.02	13.02±0.05	12.59±0.02
36	MD/SPEXF84	224.27±0.03	1727.60±0.02	50.02±0.03	429.40±0.04	11.49±0.02
	MD/SPEXF88	225.04±0.05	1730.25±0.04	49.79±0.04	427.36±0.03	11.32±0.05
37	MD/SPEXF84	240.79±0.03	2227.20±0.03	22.48±0.04	53.47±0.02	10.48±0.03
	MD/SPEXF88	238.40±0.02	2226.98±0.04	22.60±0.03	54.02±0.03	10.49±0.02
38	MD/SPEXF84	161.04±0.02	2509.02±0.04	24.98±0.04	37.61±0.04	12.34±0.02
	MD/SPEXF88	160.95±0.03	2508.30±0.02	26.99±0.01	40.02±0.05	12.67±0.04
39	MD/SPEXF84	143.12±0.04	327.02±0.02	18.68±0.04	53.47±0.04	12.11±0.04
	MD/SPEXF88	140.08±0.02	330.00±0.08	18.70±0.02	53.00±0.02	12.97±0.02
40	MD/SPEXF84	121.48±0.02	13.87±0.03	18.32±0.03	27.47±0.03	13.74±0.03
	MD/SPEXF88	120.79±0.03	12.98±0.05	18.59±0.05	27.59±0.03	13.02±0.04
41	MD/SPEXF84	37.46±0.02	868.13±0.02	36.00±0.02	24.03±0.01	13.02±0.04
	MD/SPEXF88	37.42±0.03	870.40±0.02	35.81±0.03	24.14±0.02	12.96±0.03
42	MD/SPEXF84	19.15±0.02	632.17±0.02	18.56±0.04	1.87±0.02	14.02±0.07
	MD/SPEXF88	20.00±0.04	630.10±0.04	18.70±0.02	1.99±0.03	13.97±0.02
43	MD/SPEXF84	51.06±0.03	1727.60±0.03	17.49±0.03	2.04±0.02	11.00±0.04
	MD/SPEXF88	51.42±0.02	1724.84±0.08	17.31±0.01	2.00±0.03	10.49±0.03
44	MD/SPEXF84	54.91±0.03	1160.99±0.03	27.30±0.04	2.85±0.08	26.44±0.02
	MD/SPEXF88	55.00±0.02	1163.41±0.02	27.34±0.02	2.70±0.03	26.70±0.04

Supplementary Material

T- TEST		2.04	2.12	2.11	1.47	1.03
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Supplementary Material

Table S3. Determination of MLH1, MSH2, MSH6, PMS2 and KRAS in urine samples (N=10).

Sample No.	Sensor	MLH1 ng mL ⁻¹	MSH2 pg mL ⁻¹	MSH6 pg mL ⁻¹	PMS2 ng mL ⁻¹	KRAS µg mL ⁻¹
1	MD/SPEXF84	185.64±0.03	952.96±0.04	20.19±0.03±	132.01±0.01	2.96±0.02
	MD/SPEXF88	186.47±0.05	956.61±0.02	20.43±0.01	132.99±0.03	3.00±0.01
2	MD/SPEXF84	254.94±0.04	1414.15±0.08	26.08±0.03	61.30±0.02	86.22±0.01
	MD/SPEXF88	255.11±0.02	1402.50±0.03	27.34±0.02	60.39±0.04	87.58±0.03
3	MD/SPEXF84	78.09±0.01	526.03±0.02	17.48±0.03	2.00±0.02	28.20±0.02
	MD/SPEXF88	79.40±0.04	527.00±0.04	17.44±0.01	2.35±0.02	28.13±0.05
4	MD/SPEXF84	35.99±0.01	996.75±0.01	44.87±0.04	2.10±0.05	2.62±0.01
	MD/SPEXF88	36.07±0.04	996.51±0.03	44.02±0.01	2.06±0.02	2.70±0.03
5	MD/SPEXF84	36.01±0.02	106.99±0.03	27.47±0.05	13.72±0.02	17.73±0.01
	MD/SPEXF88	36.15±0.03	106.98±0.04	27.08±0.03	13.32±0.04	17.96±0.04
6	MD/SPEXF84	78.09±0.01	597.32±0.01	18.12±0.05	6.56±0.03	8.33±0.03
	MD/SPEXF88	78.06±0.03	594.41±0.03	18.70±0.01	6.71±0.01	8.26±0.02
7	MD/SPEXF84	78.10±0.02	603.29±0.05	32.74±0.03	379.32±0.02	11.36±0.02
	MD/SPEXF88	78.12±0.05	603.46±0.03	33.50±0.02	370.45±0.05	11.90±0.02
8	MD/SPEXF84	46.87±0.02	575.99±0.02	17.84±0.03	88.79±0.01	17.53±0.02
	MD/SPEXF88	46.21±0.07	576.63±0.03	17.85±0.01	87.97±0.04	20.09±0.03
9	MD/SPEXF84	60.49±0.03	1652.40±0.07	42.93±0.05	88.79±0.02	37.87±0.01
	MD/SPEXF88	59.73±0.07	1651.00±0.03	44.13±0.02	88.37±0.05	38.14±0.02
0.010	MD/SPEXF84	35.99±0.02	432.80±0.04	22.37±0.05	3.62±0.06	14.29±0.03
	MD/SPEXF88	35.47±0.02	434.91±0.01	22.40±0.04	3.57±0.01	14.40±0.05

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11	MD/SPEXF84	27.53±0.01	616.56±0.02	45.09±0.04	1.30±0.03	11.12±0.04
	MD/SPEXF88	27.14±0.03	612.63±0.04	44.61±0.01	1.33±0.01	11.36±0.02
12	MD/SPEXF84	46.87±0.01	99.07±0.05	35.39±0.08	43.04±0.02	2.62±0.01
	MD/SPEXF88	49.85±0.03	99.38±0.02	34.63±0.02	42.91±0.05	2.73±0.04
13	MD/SPEXF84	36.48±0.01	840.56±0.08	412.84±0.03	2.70±0.03	1.09±0.02
	MD/SPEXF88	37.02±0.03	837.12±0.04	412.71±0.02	2.66±0.01	1.13±0.02
14	MD/SPEXF84	36.48±0.02	870.14±0.08	22.84±0.03	13.40±0.02	22.01±0.04
	MD/SPEXF88	39.08±0.09	862.26±0.03	22.40±0.01	12.72±0.01	23.08±0.01
15	MD/SPEXF84	27.43±0.03	749.73±0.01	57.48±0.08	627.89±0.03	14.30±0.02
	MD/SPEXF88	26.84±0.03	749.20±0.03	61.87±0.02	625.81±0.04	13.50±0.02
16	MD/SPEXF84	20.11±0.02	1267.42±0.02	45.59±0.04	1.03±0.01	11.17±0.03
	MD/SPEXF88	19.93±0.03	1256.46±0.04	44.02±0.03	1.59±0.02	10.97±0.01
17	MD/SPEXF84	15.24±0.01	220.36±0.03	370.42±0.03	8.31±0.02	0.33±0.04
	MD/SPEXF88	15.33±0.05	216.63±0.04	378.85±0.08	8.69±0.04	0.29±0.01
18	MD/SPEXF84	42.45±0.01	880.62±0.02	22.40±0.03	5.20±0.02	12.00±0.03
	MD/SPEXF88	42.19±0.03	886.23±0.02	22.79±0.02	4.97±0.04	11.97±0.04
19	MD/SPEXF84	37.90±0.02	1640.23±0.04	43.58±0.04	4.01±0.02	2.21±0.01
	MD/SPEXF88	37.43±0.04	1623.65±0.03	44.60±0.02	4.84±0.04	2.23±0.04
20	MD/SPEXF84	87.31±0.01	57.47±0.02	64.16±0.03	1.12±0.01	0.74±0.02
	MD/SPEXF88	87.00±0.03	57.30±0.04	61.87±0.01	1.10±0.03	0.72±0.05
21	MD/SPEXF84	13.02±0.01	772.49±0.02	231.42±0.02	2.64±0.02	50.49±0.04
	MD/SPEXF88	12.87±0.03	768.98±0.04	232.96±0.04	2.60±0.03	51.10±0.02
22	MD/SPEXF84	52.95±0.02	1705.60±0.03	27.93±0.03	4.28±0.02	12.11±0.03

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	MD/SPEXF88	51.87±0.05	1704.97±0.02	27.04±0.04	4.31±0.05	12.52±0.03
23	MD/SPEXF84	52.31±0.03	341.84±0.04	14.59±0.01	4.30±0.02	10.14±0.01
	MD/SPEXF88	51.94±0.02	340.92±0.02	14.73±0.04	4.31±0.07	10.11±0.08
24	MD/SPEXF84	79.06±0.02	108.51±0.04	12.96±0.02	47.51±0.02	12.59±0.02
	MD/SPEXF88	78.87±0.06	108.32±0.03	12.21±0.07	47.32±0.03	12.47±0.01
25	MD/SPEXF84	19.78±0.02	334.22±0.04	59.43±0.03	2.02±0.04	1.01±0.02
	MD/SPEXF88	20.05±0.03	337.06±0.02	59.14±0.05	2.01±0.03	1.04±0.05
26	MD/SPEXF84	67.45±0.01	580.29±0.03	22.14±0.05	9.14±0.03	1.09±0.02
	MD/SPEXF88	67.42±0.03	585.46±0.02	22.02±0.03	9.03±0.07	1.10±0.03
27	MD/SPEXF84	52.31±0.02	1750.60±0.03	37.49±0.02	4.64±0.02	2.47±0.01
	MD/SPEXF88	51.49±0.03	1749.98±0.02	37.40±0.05	4.32±0.04	2.40±0.02
28	MD/SPEXF84	82.04±0.03	1114.90±0.03	24.32±0.02	45.46±0.03	7.69±0.03
	MD/SPEXF88	81.97±0.04	1115.00±0.02	24.68±0.02	46.00±0.04	7.83±0.02
29	MD/SPEXF84	89.53±0.01	279.37±0.04	499.79±0.03	25.08±0.02	0.22±0.01
	MD/SPEXF88	90.02±0.02	280.17±0.03	499.08±0.01	24.97±0.04	0.24±0.01
30	MD/SPEXF84	241.51±0.03	1149.92±0.03	43.09±0.03	123.84±0.03	7.00±0.03
	MD/SPEXF88	240.97±0.02	1145.80±0.02	43.45±0.02	124.69±0.05	7.15±0.02
31	MD/SPEXF84	51.68±0.03	174.77±0.05	13.27±0.02	2.14±0.02	0.69±0.04
	MD/SPEXF88	50.97±0.02	172.71±0.03	13.33±0.04	2.10±0.03	0.72±0.02
32	MD/SPEXF84	163.54±0.02	2453.82±0.04	18.15±0.03	2.14±0.03	0.70±0.01
	MD/SPEXF88	164.02±0.04	2458.80±0.03	18.41±0.02	2.67±0.05	0.73±0.01
33	MD/SPEXF84	371.19±0.02	282.68±0.02	15.19±0.03	2.60±0.02	20.67±0.04
	MD/SPEXF88	369.42±0.03	280.47±0.08	15.59±0.02	2.67±0.03	20.23±0.02

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34	MD/SPEXF84	168.69±0.03	82.11±0.03	32.94±0.03	58.25±0.03	20.76±0.03
	MD/SPEXF88	167.43±0.04	80.89±0.02	33.83±0.02	57.75±0.02	19.93±0.02
35	MD/SPEXF84	55.58±0.02	595.30±0.02	26.53±0.05	58.25±0.02	4.14±0.01
	MD/SPEXF88	57.20±0.03	594.27±0.03	26.54±0.02	58.40±0.04	4.74±0.03
36	MD/SPEXF84	125.91±0.01	392.47±0.03	14.49±0.03	523.41±0.03	0.68±0.02
	MD/SPEXF88	127.19±0.08	400.55±0.02	15.37±0.02	520.15±0.05	0.71±0.02
37	MD/SPEXF84	85.16±0.02	1176.70±0.04	34.97±0.02	34.42±0.02	1.95±0.05
	MD/SPEXF88	84.97±0.03	1175.93±0.02	35.01±0.03	34.20±0.04	1.97±0.01
38	MD/SPEXF84	9.44±0.02	1110.33±0.02	26.48±0.04	3.77±0.02	0.57±0.03
	MD/SPEXF88	9.37±0.05	1111.50±0.04	26.57±0.02	3.35±0.02	0.58±0.02
39	MD/SPEXF84	90.66±0.03	572.97±0.02	43.03±0.03	53.54±0.03	2.14±0.01
	MD/SPEXF88	92.77±0.02	576.63±0.03	37.02±0.01	54.63±0.04	2.20±0.04
40	MD/SPEXF84	22.10±0.02	712.81±0.03	37.15±0.04	47.32±0.02	1.97±0.03
	MD/SPEXF88	21.97±0.03	713.00±0.02	37.02±0.02	48.00±0.05	1.90±0.03
41	MD/SPEXF84	54.91±0.03	1821.60±0.02	25.62±0.03	37.14±0.02	2.34±0.02
	MD/SPEXF88	54.47±0.02	1820.47±0.03	25.60±0.02	37.22±0.04	2.32±0.05
42	MD/SPEXF84	54.91±0.03	1870.50±0.02	20.20±0.01	23.44±0.03	4.17±0.03
	MD/SPEXF88	53.97±0.02	1871.25±0.03	19.15±0.03	22.97±0.02	4.69±0.02
43	MD/SPEXF84	131.17±0.02	2991.60±0.01	37.42±0.03	24.15±0.05	3.29±0.02
	MD/SPEXF88	130.97±0.05	2990.47±0.03	37.07±0.01	24.39±0.07	3.47±0.01
44	MD/SPEXF84	127.66±0.03	1773.90±0.02	25.42±0.03	15.49±0.02	4.95±0.03
	MD/SPEXF88	126.93±0.04	1772.45±0.03	25.36±0.02	15.35±0.04	4.70±0.03
45	MD/SPEXF84	82.04±0.02	1773.90±0.03	25.40±0.02	13.49±0.01	5.32±0.02

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	MD/SPEXF88	81.96±0.03	1172.45±0.03	25.35±0.01	13.40±0.02	5.35±0.03
46	MD/SPEXF84	160.00±0.03	181.25±0.04	30.47±0.03	111.37±0.04	2.89±0.02
	MD/SPEXF88	159.02±0.02	181.60±0.03	30.25±0.03	112.79±0.03	2.97±0.02
47	MD/SPEXF84	52.95±0.02	286.13±0.04	25.72±0.02	13.13±0.02	1.94±0.03
	MD/SPEXF88	53.00±0.03	287.09±0.02	25.36±0.03	13.29±0.02	1.923±0.02
T-TEST		1.98	2.03	2.05	2.12	1.34

Supplementary Material

Table S4. Determination of MLH1, MSH2, MSH6, PMS2 and KRAS in whole blood samples (N=10).

Sample No.	Sensor	MLH1 ng mL ⁻¹	MSH2 pg mL ⁻¹	MSH6 pg mL ⁻¹	PMS2 ng mL ⁻¹	KRAS µg mL ⁻¹
1	MD/SPEXF84	60.49±0.03	942.02±0.03	34.98±0.02	7.29±0.03	17.73±0.04
	MD/SPEXF88	61.05±0.05	942.48±0.02	36.64±0.05	7.62±0.05	17.96±0.03
2	MD/SPEXF84	47.34±0.04	386.49±0.02	17.12±0.02	13.39±0.04	11.36±0.06
	MD/SPEXF88	48.00±0.02	385.65±0.05	17.31±0.03	12.99±0.03	11.79±0.04
3	MD/SPEXF84	78.08±0.03	738.56±0.04	19.48±0.06	13.30±0.04	28.92±0.04
	MD/SPEXF88	78.35±0.03	722.89±0.03	20.26±0.04	12.98±0.03	28.06±0.03
4	MD/SPEXF84	60.48±0.04	295.75±0.05	19.78±0.06	13.39±0.02	2.61±0.03
	MD/SPEXF88	61.74±0.08	296.68±0.03	20.43±0.03	13.64±0.04	2.71±0.04
5	MD/SPEXF84	131.27±0.03	690.44±0.06	17.94±0.05	1.79±0.05	14.13±0.02
	MD/SPEXF88	130.95±0.02	690.53±0.03	17.31±0.03	1.20±0.03	14.98±0.05
6	MD/SPEXF84	60.48±0.03	523.51±0.03	37.29±0.02	2.30±0.02	7.35±0.04
	MD/SPEXF88	60.15±0.04	524.00±0.05	37.06±0.04	2.35±0.04	7.33±0.02
7	MD/SPEXF84	135.03±0.02	50.41±0.04	24.16±0.04	7.23±0.03	22.28±0.02
	MD/SPEXF88	133.98±0.08	50.19±0.03	24.46±0.03	7.05±0.08	21.97±0.04
8	MD/SPEXF84	47.45±0.05	501.71±0.04	20.47±0.03	3.97±0.05	1.12±0.02
	MD/SPEXF88	47.80±0.03	501.95±0.03	20.43±0.04	3.91±0.01	1.65±0.04
9	MD/SPEXF84	4.26±0.03	1703.30±0.04	2.78±0.04	13.39±0.02	9.14±0.02
	MD/SPEXF88	4.20±0.01	1702.98±0.07	2.69±0.02	13.68±0.07	9.79±0.03
10	MD/SPEXF84	36.48±0.04	11.31±0.05	20.85±0.02	2.37±0.04	9.14±0.02
	MD/SPEXF88	36.13±0.04	10.90±0.02	20.77±0.04	2.35±0.02	9.33±0.05

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11	MD/SPEXF84	78.00±0.03	158.40±0.08	20.46±0.03	30.04±0.02	17.20±0.04
	MD/SPEXF88	78.00±0.05	155.41±0.03	20.43±0.05	29.86±0.06	17.53±0.02
12	MD/SPEXF84	101.70±0.04	362.27±0.08	30.60±0.05	87.17±0.04	13.89±0.04
	MD/SPEXF88	100.98±0.07	368.01±0.03	29.86±0.04	89.18±0.02	13.92±0.02
13	MD/SPEXF84	36.48±0.03	75.02±0.08	87.09±0.02	3.87±0.04	11.31±0.04
	MD/SPEXF88	36.15±0.04	73.74±0.02	86.30±0.07	3.91±0.03	11.45±0.03
14	MD/SPEXF84	27.43±0.03	200.53±0.03	654.87±0.07	585.20±0.07	14.30±0.04
	MD/SPEXF88	27.21±0.05	200.41±0.07	651.93±0.08	587.35±0.04	14.27±0.02
15	MD/SPEXF84	101.70±0.02	2227.20±0.04	14.75±0.04	20.31±0.04	17.53±0.04
	MD/SPEXF88	101.37±0.05	2225.97±0.03	14.93±0.02	20.49±0.02	18.00±0.03
16	MD/SPEXF84	101.69±0.04	200.53±0.04	29.65±0.05	43.04±0.05	22.01±0.03
	MD/SPEXF88	102.05±0.07	198.47±0.08	29.86±0.03	42.64±0.08	21.98±0.05
17	MD/SPEXF84	101.69±0.04	172.76±0.05	25.52±0.07	43.04±0.02	37.85±0.05
	MD/SPEXF88	100.47±0.08	174.81±0.02	24.46±0.03	44.57±0.04	36.96±0.07
18	MD/SPEXF84	23.15±0.02	985.54±0.02	947.88±0.03	324.36±0.02	39.05±0.03
	MD/SPEXF88	24.04±0.08	983.98±0.04	945.05±0.05	325.00±0.07	39.94±0.08
19	MD/SPEXF84	78.09±0.03	973.02±0.05	24.57±0.08	30.04±0.02	9.14±0.02
	MD/SPEXF88	78.84±0.07	970.97±0.07	24.46±0.03	31.45±0.05	9.74±0.04
20	MD/SPEXF84	61.23±0.03	150.97±0.04	24.66±0.04	30.58±0.04	17.53±0.07
	MD/SPEXF88	60.95±0.07	151.18±0.02	24.46±0.08	30.69±0.02	17.48±0.02
21	MD/SPEXF84	27.53±0.03	985.54±0.7	95.75±0.02	11.03±0.02	22.42±0.04
	MD/SPEXF88	27.49±0.05	987.03±0.05	95.30±0.04	10.95±0.07	22.59±0.07
22	MD/SPEXF84	60.49±0.03	200.53±0.07	35.47±0.07	2.20±0.02	56.13±0.02

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	MD/SPEXF88	58.75±0.07	200.32±0.05	36.64±0.02	2.35±0.03	56.51±0.02
23	MD/SPEXF84	78.09±0.05	152.09±0.02	15.75±0.03	20.31±0.05	22.33±0.04
	MD/SPEXF88	78.40±0.03	151.84±0.04	15.51±0.03	23.50±0.04	22.33±0.04
24	MD/SPEXF84	100.39±0.02	503.04±0.07	4.51±0.01	43.04±0.02	22.28±0.04
	MD/SPEXF88	98.99±0.07	501.95±0.03	4.40±0.03	42.29±0.03	22.54±0.06
25	MD/SPEXF84	50.26±0.03	102.97±0.05	11.92±0.08	1.09±0.04	0.13±0.04
	MD/SPEXF88	50.49±0.03	103.17±0.02	13.81±0.02	1.07±0.02	0.12±0.01
26	MD/SPEXF84	119.02±0.04	26.98±0.04	10.98±0.02	13.01±0.03	0.83±0.05
	MD/SPEXF88	119.27±0.03	26.55±0.03	10.43±0.04	12.09±0.05	0.78±0.02
27	MD/SPEXF84	104.04±0.08	29.48±0.02	59.46±0.06	3.66±0.04	2.97±0.04
	MD/SPEXF88	103.98±0.03	29.15±0.03	59.12±0.08	3.62±0.05	2.90±0.07
28	MD/SPEXF84	52.31±0.02	2.48±0.03	43.40±0.07	4.90±0.08	3.29±0.04
	MD/SPEXF88	52.40±0.03	2.56±0.02	44.60±0.03	4.84±0.03	3.33±0.02
29	MD/SPEXF84	47.34±0.03	23.47±0.04	27.00±0.04	13.05±0.04	4.92±0.03
	MD/SPEXF88	47.50±0.03	23.50±0.07	26.07±0.02	13.43±0.07	4.74±0.02
30	MD/SPEXF84	157.70±0.03	99.68±0.02	26.00±0.07	57.03±0.05	1.23±0.04
	MD/SPEXF88	159.70±0.02	100.03±0.05	25.60±0.03	57.21±0.03	1.15±0.03
31	MD/SPEXF84	29.46±0.03	51.17±0.03	4.47±0.05	10.15±0.03	21.47±0.03
	MD/SPEXF88	30.00±0.02	51.24±0.04	4.32±0.02	10.23±0.04	21.53±0.04
32	MD/SPEXF84	766.03±0.07	10.36±0.05	2.15±0.04	4.56±0.02	1.97±0.02
	MD/SPEXF88	764.97±0.07	10.42±0.03	2.12±0.03	4.73±0.07	1.95±0.04
33	MD/SPEXF84	82.04±0.03	131.39±0.06	2.60±0.07	13.29±0.04	2.95±0.05
	MD/SPEXF88	81.97±0.07	130.40±0.07	2.58±0.04	13.40±0.06	2.97±0.07

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34	MD/SPEXF84	228.39±0.04	41.95±0.02	90.78±0.02	12.47±0.07	11.43±0.03
	MD/SPEXF88	229.98±0.02	41.43±0.05	91.40±0.05	12.52±0.05	11.15±0.02
35	MD/SPEXF84	11.70±0.03	705.60±0.03	11.93±0.02	13.13±0.04	10.49±0.02
	MD/SPEXF88	11.29±0.05	705.48±0.04	11.48±0.03	13.29±0.02	10.15±0.02
36	MD/SPEXF84	21.00±0.02	18.22±0.03	20.00±0.04	12.49±0.03	9.47±0.03
	MD/SPEXF88	20.99±0.01	18.29±0.02	19.15±0.03	12.73±0.05	9.52±0.01
37	MD/SPEXF84	131.27±0.03	29.92±0.04	37.42±0.05	460.02±0.03	8.76±00.4
	MD/SPEXF88	130.98±0.04	29.40±0.02	36.95±0.03	459.93±0.05	8.92±0.03
38	MD/SPEXF84	85.16±0.03	2991.60±0.04	38.47±0.02	641.61±0.01	9.47±0.03
	MD/SPEXF88	86.37±0.02	2990.97±0.02	39.00±0.03	641.70±0.02	9.50±0.02
39	MD/SPEXF84	113.47±0.07	850.02±0.02	22.80±0.05	2.20±0.03	10.15±0.05
	MD/SPEXF88	112.98±0.05	849.60±0.03	22.79±0.04	2.15±0.04	10.27±0.03
40	MD/SPEXF84	35.55±0.03	380.79±0.02	14.15±0.07	10.14±0.02	11.59±0.03
	MD/SPEXF88	35.40±0.02	379.80±0.04	14.72±0.03	10.13±0.06	11.47±0.05
41	MD/SPEXF84	41.93±0.02	106.50±0.03	22.51±0.03	2.17±0.04	8.15±0.03
	MD/SPEXF88	41.20±0.04	106.98±0.02	22.79±0.02	2.15±0.02	8.23±0.07
42	MD/SPEXF84	54.91±0.03	1145.00±0.03	25.40±0.03	4.95±0.04	10.59±0.03
	MD/SPEXF88	54.48±0.02	1144.78±0.02	25.36±0.04	4.87±0.07	10.47±0.05
43	MD/SPEXF84	82.04±0.02	1137.00±0.04	29.47±0.03	3.05±0.03	11.47±0.04
	MD/SPEXF88	82.47±0.04	1138.12±0.07	30.15±0.02	3.03±0.01	11.52±0.02
44	MD/SPEXF84	54.91±0.03	934.07±0.04	14.15±0.02	12.19±0.04	11.49±0.04
	MD/SPEXF88	54.23±0.04	936.21±0.05	14.71±0.03	13.02±0.02	10.97±0.03
45	MD/SPEXF84	53.60±0.02	199.95±0.02	10.47±0.03	1.40±0.04	1.92±0.03

Supplementary Material

	MD/SPEXF88	52.97±0.03	199.86±0.03	10.33±0.02	1.36±0.02	1.94±0.03
46	MD/SPEXF84	30.32±0.02	33.03±0.03	10.37±0.04	492.92±0.05	0.80±0.02
	MD/SPEXF88	29.44±0.03	32.71±0.04	10.33±0.02	493.70±0.03	0.79±0.01
47	MD/SPEXF84	52.95±0.03	863.00±0.02	22.85±0.03	2.12±0.02	1.14±0.03
	MD/SPEXF88	53.60±0.02	862.26±0.03	22.79±0.02	2.15±0.03	1.17±0.02
48	MD/SPEXF84	119.02±0.01	424.15±0.05	78.02±0.05	840.19±0.08	7.89±0.02
	MD/SPEXF88	120.14±0.02	422.23±0.04	77.96±0.04	842.31±0.03	7.95±0.01
49	MD/SPEXF84	123.46±0.03	33.92±0.04	25.47±0.03	21.75±0.04	8.02±0.03
	MD/SPEXF88	122.59±0.02	34.00±0.03	25.60±0.02	21.50±0.03	8.00±0.02
50	MD/SPEXF84	52.92±0.02	10.85±0.03	14.15±0.03	11.93±0.02	10.14±0.04
	MD/SPEXF88	52.14±0.03	10.14±0.02	14.72±0.02	12.07±0.03	10.12±0.03
T-TEST		2.19	2.18	2.23	2.47	1.98