Supplementary materials

Table 1. Relative expression levels of lncRNA MEG3 and miR-424 isoforms in blood and tissue samples across study groups.

	Control-B	**Control-T**	**Patients-B**	**Patients-T**	*p*- value #
MEG3	1.008[a,b] 0.912 to 1.120	1.107[c] 0.884 to 1.207	0.748[a] 0.595 to 0.843	0.811[b,c] 0.726 to 0.941	<0.0001
MiR-424-3p	1.020[a,b] 0.955 to 1.085	1.025[c] 0.932 to 1.164	1.691[a] 1.402 to 2.141	1.761[b,c] 1.476 to 2.191	<0.0001
MiR-424-5p	1.001[a,b] 0.902 to 1.209	1.174[c] 0.556 to 1.633	1.376[a] 1.165 to 1.549	3.345[b,c] 2.201 to 6.385	<0.0001

Data are: Median, 25-75 percentiles. # Kruskal-Wallis test
a groups with the same letter differ significantly in the post-hoc test according to Conover.
Control-B & Patients-B: B, Blood sample. Control-T & Patients-T: T, Tissue sample

Table 2. Diagnostic performance of *MEG3* and *miR-424* isoforms for CRC detection across blood and tissue samples.

Parameter	**AUC**	**95% CI**	**Cutoff**	**Sensitivity (%)**	**Specificity (%)**	**Youden index**
MEG3_B	0.898	0.779–0.965	≤0.902	88	76	0.64
MEG3_T	0.738	0.594–0.852	≤0.957	84	72	0.56
miR-424-3p_B	0.934	0.827–0.985	>1.179	92	96	0.88
miR-424-3p_T	0.878	0.755–0.954	>1.17	88	92	0.80
miR-424-5p_B	0.814	0.679–0.910	>1.001	96	52	0.48
miR-424-5p_T	0.930	0.821–0.983	>1.649	96	80	0.76

AUC, Area under curve; CI, Confidence interval; T, tissue sample; B, blood sample; MEG3, Maternally Expressed Gene 3; miR, microRNA

Table 3. DeLong test comparisons of ROC AUC differences between MEG3 and miR-424 indicators.

Pair (1st vs. 2nd)	ΔAUC	SE	95% CI	p value
MEG3-T vs. miR-424-5p-T	0.193	0.0836	0.0290 to 0.357	0.0210 *
MEG3-T vs. miR-424-3p-B	0.197	0.0920	0.0164 to 0.377	0.0325 *
MEG3-B vs. MEG3-T	0.160	0.0910	-0.0184 to 0.338	0.0788
miR-424-3p-B vs. miR-424-5p-B	0.120	0.0690	-0.0152 to 0.255	0.0819
MEG3-T vs. miR-424-3p-T	0.141	0.0972	-0.0497 to 0.331	0.1475
miR-424-5p-B vs. miR-424-5p-T	0.116	0.0779	-0.0367 to 0.269	0.1366
MEG3-B vs. miR-424-5p-B	0.083	0.0806	-0.0747 to 0.241	0.3019
MEG3-B vs. miR-424-5p-T	0.033	0.0576	-0.0801 to 0.146	0.5690
MEG3-B vs. miR-424-3p-B	0.037	0.0658	-0.0922 to 0.166	0.5760
miR-424-3p_T vs. miR-424-5p_T	0.052	0.0603	-0.0662 to 0.170	0.3886
MEG3_B vs. miR-424-3p_T	0.019	0.0772	-0.132 to 0.171	0.8037
miR-424-3p_B vs. miR-424-3p_T	0.056	0.0719	-0.0849 to 0.197	0.4359
miR-424-3p_T vs. miR-424-5p_B	0.064	0.0868	-0.106 to 0.234	0.4610
MEG3_T vs. miR-424-5p_B	0.077	0.0952	-0.110 to 0.263	0.4197
miR-424-3p_B vs. miR-424-5p_T	0.004	0.0525	-0.0989 to 0.107	0.9393

ΔAUC, difference between the areas under the receiver operating characteristic (ROC) curves.SE, standard error.CI, confidence interval. MEG3, Maternally Expressed Gene 3.miR, microRNA.3p and 5p, mature microRNA strands derived from the 3′ and 5′ arms of the precursor microRNA, respectively. T, tissue sample. B, blood sample. Statistically significant at $P < 0.05$.

Table 4. Univariate logistic regression analysis of study variables associated with CRC status.

Variable	Odds Ratio (95% CI)	P-value
Age	1.03 (0.97–1.10)	0.3085
Smoking	4.85 (1.29–18.26)	0.0197
miR-424-5P_T	8.40 (2.16–32.60)	0.0021
miR-424-5P_B	215.77 (8.16–5705.80)	0.0013
miR-424-3P_T	64.21 (6.89–598.84)	0.0003
miR-424-3P_B	12755.05 (38.64–4210052.33)	0.0014
MEG3_T	0.032 (0.002–0.427)	0.0092
MEG3_B	0.000 (4.10×10^{-9}–0.0039)	0.0004
RBC	1.05 (0.91–1.20)	0.5289
PLT	1.01 (1.004–1.019)	0.0047
HB	0.614 (0.404–0.935)	0.0228
WBC	0.750 (0.565–0.994)	0.0456

OR, odds ratio; CI, confidence interval; HB, hemoglobin; RBC, red blood cell count; WBC, white blood cell count; PLT, platelet count; MEG3, Maternally Expressed Gene 3; miR, microRNA; 3p and 5p represent mature microRNA strands derived from the 3′ and 5′ arms of the precursor microRNA, respectively; T, tissue sample; B, blood sample. An OR >1 indicates an increased likelihood of the outcome, whereas an OR <1 indicates a decreased likelihood of the outcome. Statistical significance was considered at $P < 0.05$.

Table 5. Spearman rank correlation coefficient among study parameters.

Variable - Correlates with	ρ (rho value)	p value
HB - RBC	0.574	<0.0001 **
HB - MEG3-B	0.288	0.0428 *
RBC - MEG3-B	0.327	0.0207 *
WBC - MEG3-T	0.391	0.0049 **
PLT - MEG3-B	-0.529	0.0001 **
MEG3-B - MEG3-T	0.295	0.0374 *
MEG3-B - miR-424-3p_B	-0.520	0.0001 **
miR-424-3p_B - miR-424-3p_T	0.402	0.0038 **
miR-424-3p_B - miR-424-5p_B	0.442	0.0013 **
miR-424-3p_B - miR-424-5p_T	0.673	<0.0001 **
miR-424-3p_T - miR-424-5p_B	0.308	0.0293 *
miR-424-3p_T - miR-424-5p_T	0.651	<0.0001 **
PLT - miR-424-5p_T	0.372	0.0078 **

HB, hemoglobin; RBC, red blood cell count; WBC, white blood cell count; PLT, platelet count; MEG3, Maternally Expressed Gene 3; miR, microRNA; 3p and 5p represent mature microRNA strands derived from the 3′ and 5′ arms of the precursor microRNA, respectively; T, tissue sample; B, blood sample; ρ (rho), Spearman's rank correlation coefficient. Positive ρ values indicate a direct correlation, whereas negative ρ values indicate an inverse correlation. Statistical significance was considered at $P < 0.05$; $P < 0.05$ (*), $P < 0.01$ (**).