

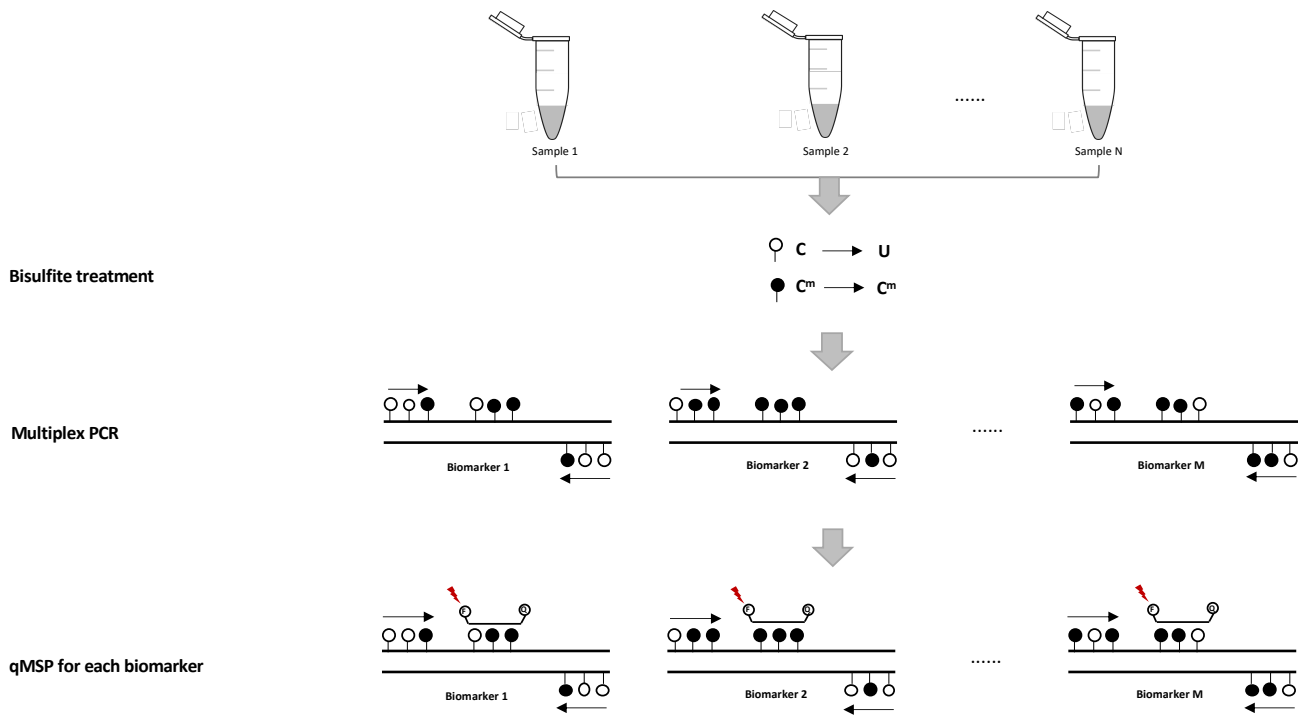


Figure S1 The strategy of using mPCRs followed by quantitative methylation-specific PCR (qPCR) quantification for each candidate marker used in the study.

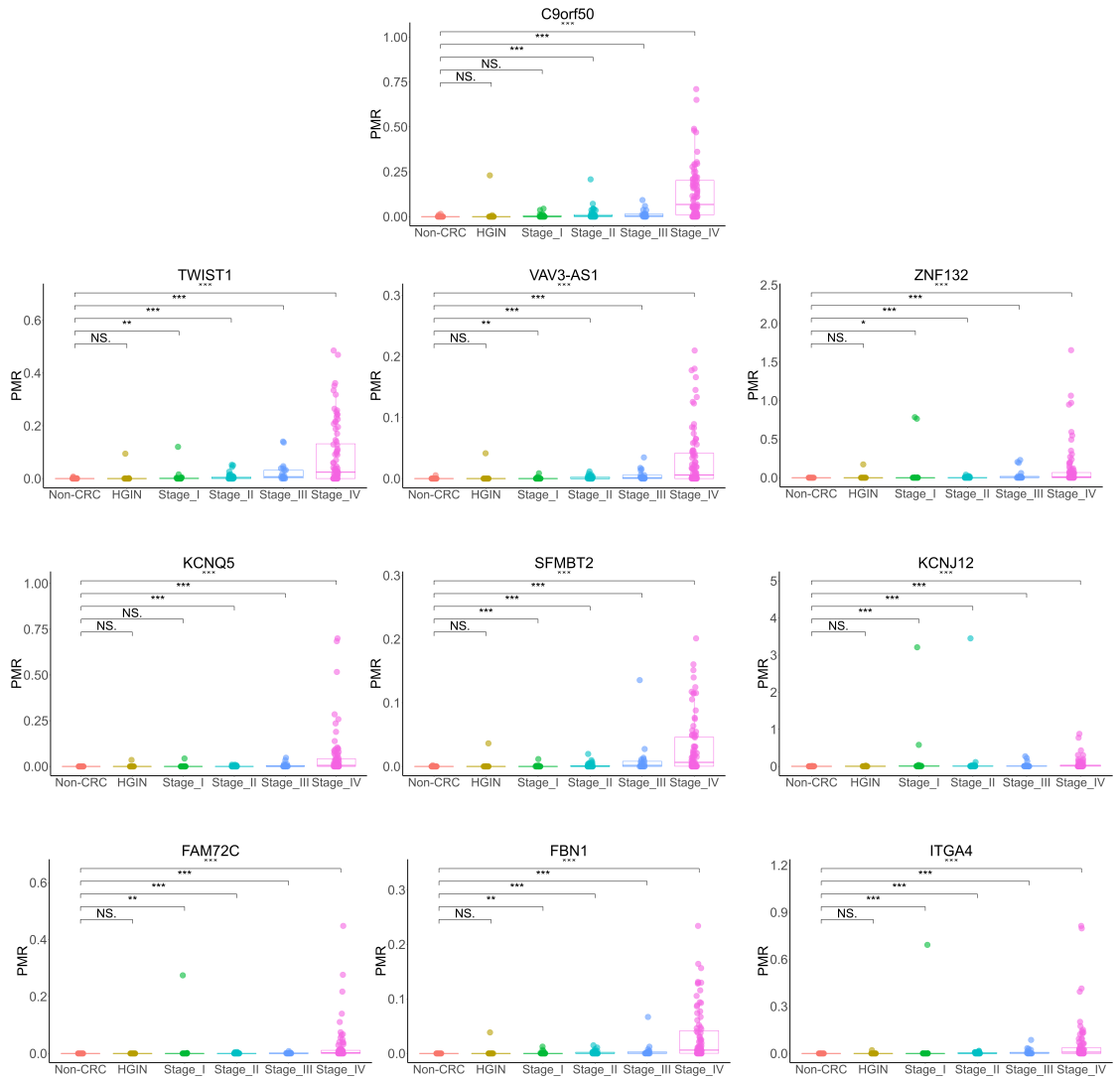
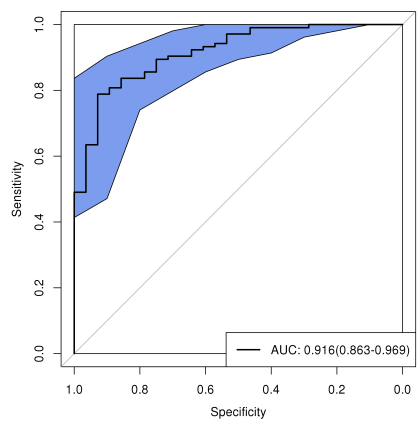
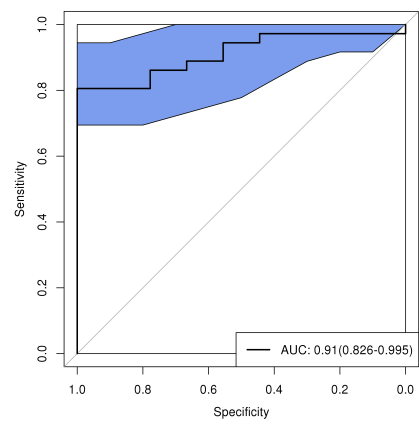


Figure S2 The PMR value of 10 markers in different stages of CRC. * p<0.05 ** p<0.01 * p<0.001**

A.



B.



C.

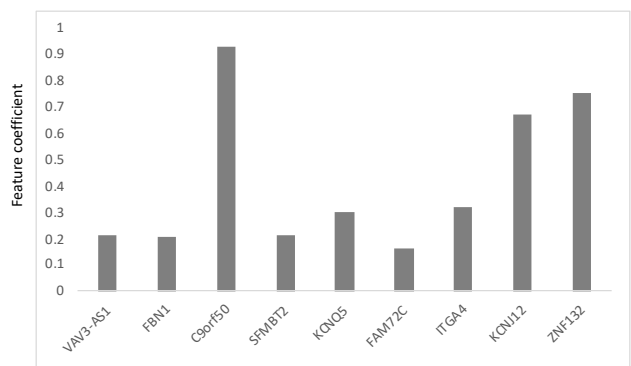
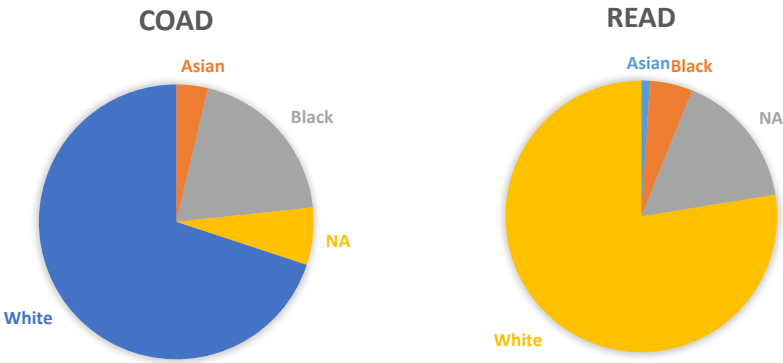
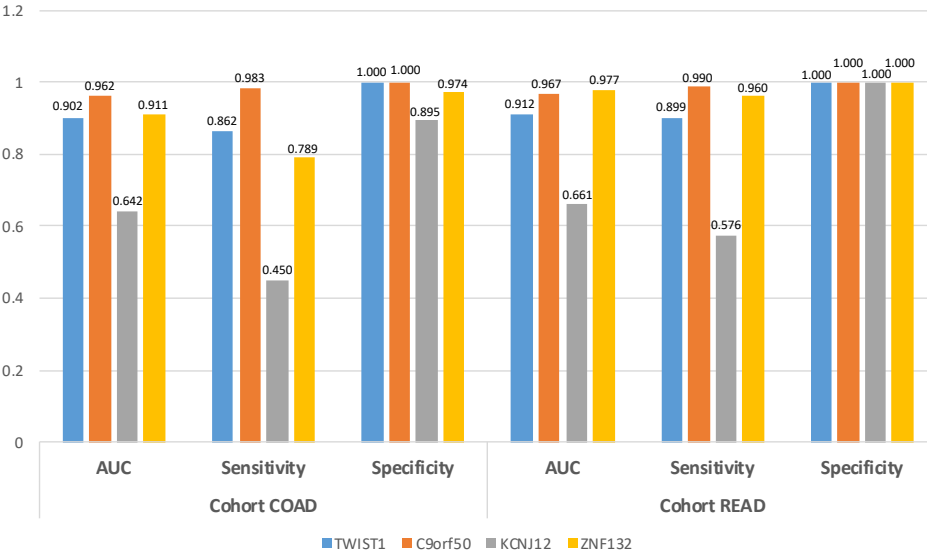


Figure S3 The diagnostic performance of 10-marker LR model. (A) In the training set, the AUC was 0.916 (B) In the test set, the AUC was 0.910 (C) The feature coefficient of the 10-marker model

A.



B.



C.

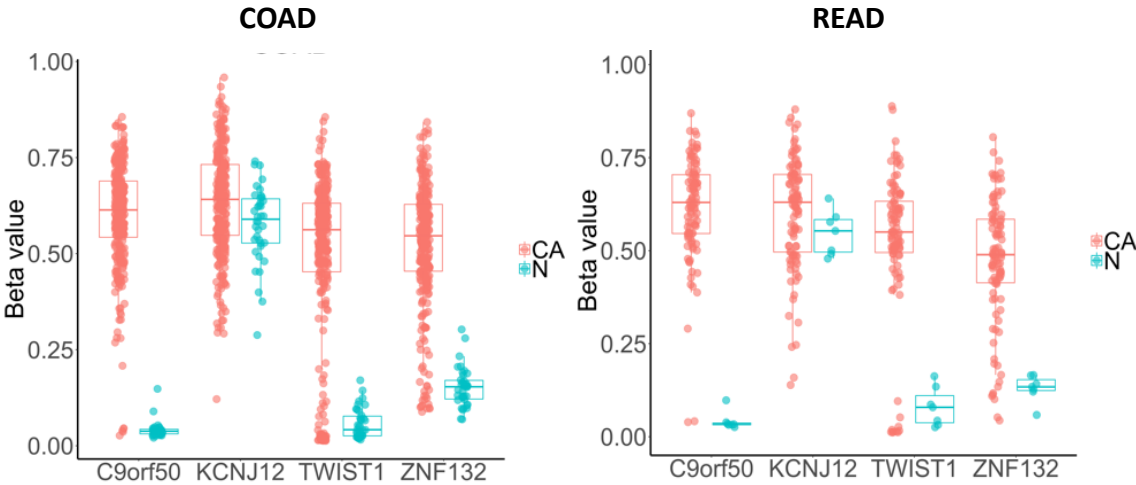


Figure S4 The diagnostic performance of 4 marker in colon adenocarcinoma (COAD) and rectum adenocarcinoma (READ) populations from TCGA. (A) Ethnic summary of TCGA cohort COAD (N=334) and cohort READ (N=105) (B) Performance of individual marker in TCGA cohort COAD (Normal N=38, Case N=296) and cohort READ (Normal N=7, Case N=98) (C) Methylation level distribution for each marker in case group (CA) and control group (N)

Table S1 Primers and probes used in the study

Target	Primer & Probe	Sequence5' _3'
ITGA4	ITGA4-F	TGCGGAGGCGTAGGGTC
	ITGA4-R	CAACCGAAATTCCTCAACG
	ITGA4-P	CCTACAACCGCGCGTAAACAAAAACG
TWIST1	TWIST1-F	GTAGCGCGGCGAACGT
	TWIST1-R	AAACGCAACGAATCATAACCAAC
	TWIST1-P	CCAACGCACCCAATCGCTAAACGA
FBN1	FBN1-F	GCGATTTTTAGTAGACGTTTTTCGAC
	FBN1-R	AACCCCGAACGCGACA
	FBN1-P	ACGACGAAAACCGATAACGACTCGACATC
SFMBT2	SFMBT2b-F	AAAACGTTTTTAGGTATTGGTCG
	SFMBT2b-R	ACGATCCCCGAACTAACG
	SFMBT2-P	CTCCTCCGAACCCGCGAACCTAATC
C9orf50	C9orf50-F	GACGCGTCCCGAAAATC
	C9orf50-R	TTTTTTAGGAAGGCGTTTAAGAAGT
	C9orf50-P	AAAACGCGAACGCCCCCGA
ZNF132	ZNF132-F	GGAATGGCGTTTATTGCGTC
	ZNF132-R	CCCGAAAATACCTATCTCCTCGA
	ZNF132-P	CAACCCTAAAACACGCGAAAATCCTTC
KCNQ5	KCNQ5-F	CTCTACAACCCCTCCTTCCC
	KCNQ5-R	CGTTCGTTAGTTAGAGATTTTGTAGTC
	KCNQ5-P	CCCCGAAACCCGAACGATTACTAACTACC
VAV3-AS1	VAV3-AS1-F	CCTTACGAAACTCACGCAACC
	VAV3-AS1-R	GGGTTTTGGGGATTTTATCG
	VAV3-AS1-P	CCTAAAAATCTTCTCTCGAAACGACTTCCCG
FAM72C	FAM72C-F	TTGGTCGTTGAGTTTGGTTTC
	FAM72C-R	CACTTTCACTAAAACATAAAATTTACCG
	FAM72C-P	AACCTCCGAAACCGACCAATAAAATCGAA
KCNJ12	KCNJ12-F	AAAAACAAAACTACCTAAATTTACAACGC
	KCNJ12-R	GATTTGTTTGCGCGTTTCGAG
	KCNJ12-P	AACCTCCCTAAAACCTGACGACCGCCCTA
ACTB	ACTB-F	GTGATGGAGGAGGTTTAGTAAGTT
	ACTB-R	CCAATAAACCTACTCTCCCTTAA
	ACTB-P	ACCACCACCAACACACAATAACAAACACA

Table S2 The demographic and clinical characteristics of patients in training, test and validation sets

	Training	Testing	Validation
Total (n)	132	45	91
Age - yr	55(29-83)	60.5(27-89)	58.5(24-86)
Gender – no.(%)			
Male	63	20	42
Female	69	25	49
Histology			
Normal	17	7	32
Hyperplastic Polys	5	1	0
LGIN	6	1	2
HGIN	0	0	22
Tumor			
Stage I	14	6	6
Stage II	34	5	5
Stage III	11	5	5
Stage IV	45	20	19

Table S3 Feature coefficient of the 4-marker model

TWIST1	C9orf50	KCNJ12	ZNF132
0.688	0.965	0.714	0.809