Figure S1 Representative picture delineating the boundary of CT and IM area in a liver metastasis specimen. The black line representing the borderline between CT and IM area. (scale bar =100 μm). CT, core tumor; IM, invasive margin.
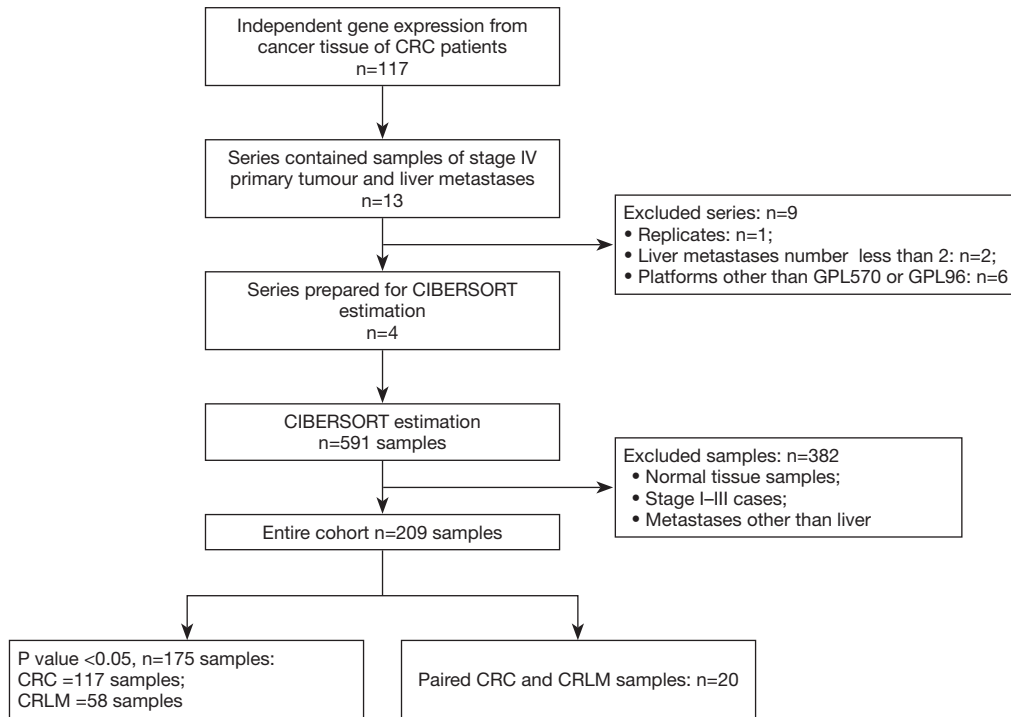

Figure S2 Flowchart of GEO dataset collection and sample selection. GEO, Gene Express Omnibus.

Table S1 Median densities and interquartile ranges of the four indexes of immune score in primary tumor and liver metastasis

Indexes	Median densities of infiltrated lymphocytes (IQR) cells/mm^2	
	Primary tumor	liver metastases
CD3$^+$ cells in CT	48.86 (0.00–172.64)	16.13 (0.00–94.09)
CD3$^+$ cells in IM	417.40 (62.20–1,066.04)	300.00 (118.71–524.40)
CD8$^+$ cells in CT	22.80 (0.00–110.75)	10.75 (0.00–83.33)
CD8$^+$ cells in IM	302.20 (26.22–828.67)	290.63 (149.02–419.56)

CT, core tumor; IM, invasive margin; IQR, interquartile range.

Table S2 Median densities and interquartile ranges of the four indexes in primary tumors according to patients clinicopathological characteristics

Characteristics	Median density (IQR) cells/mm^2			
	CD3$^+$ cells in CT	CD3$^+$ cells in IM	CD8$^+$ cells in CT	CD8$^+$ cells in IM
Synchronous metastases				
Present	50.49 (0.00–175.08)	411.40 (77.31–1,049.43)	24.43 (0.00–112.38)	304.16 (30.92–846.88)
Absent	39.09 (0.00–169.38)	459.18 (7.43–1,330.57)	9.77 (0.00–148.21)	123.97 (16.12–928.90)
Preoperative chemotherapy status				
Yes	97.72 (1.63–309.45)	540.67 (150.04–1,190.09)	71.66 (17.92–294.79)	500.00 (87.46–1,151.66)
No	9.77 (0.00–140.07)	268.56 (36.50–1,058.51)	6.51 (0.00–50.49)	159.44 (9.54–714.72)
Primary tumor location				
Right-sided	26.06 (0.00–175.08)	406.13 (77.31–976.46)	35.83 (0.00–86.32)	226.63 (13.17–699.14)
Left-sided	55.37 (0.00–175.90)	459.18 (58.25–1,122.72)	19.54 (0.00–136.81)	348.12 (29.36–943.40)
Resection status				
Synchronous resection	42.35 (0.00–201.95)	394.87 (107.48–1,047.24)	22.80 (0.00–117.26)	295.77 (26.22–901.52)
Heterochronous resection	55.37 (0.00–145.77)	479.87 (32.77–1,128.26)	21.17 (0.00–109.12)	313.57 (24.12–815.42)

CT, core tumor; IM, invasive margin; IQR, interquartile range.

Table S3 All regression coefficients in multivariate Cox regression analyses in *Tables 3,4*

Characteristics	Regression coefficients
Age (>65 s *vs.* ≤65 years)	1.183
Gender (male *vs.* female)	1.664
BMI (≥24 *vs.* <24 kg/m^2)	1.359
Primary tumor grade (G3 *vs.* G1–2)	1.260
Primary tumor location (right-sided *vs.* left-sided)	1.771
T-stage (pT4 *vs.* pT1–3)	1.450
N-stage (pN1–2 *vs.* pN0)	1.611
Synchronous metastases (present *vs.* absent)	1.130
Resection status (heterochronous *vs.* synchronous)	0.458
Preoperative chemotherapy before primary tumor resection (yes *vs.* no)	0.405
Immune score LM (high *vs.* low)	0.427
Immune score PT (high *vs.* low)	0.389

BMI, body mass index; LM, liver metastases; PT, primary tumor.