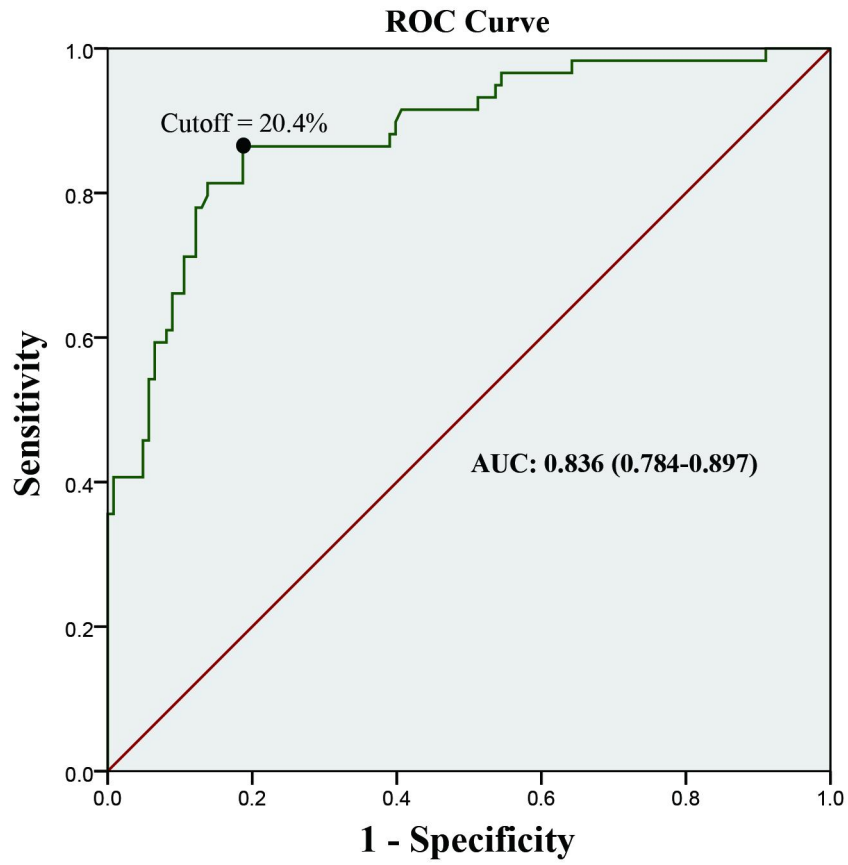


## Supplementary Figure

Supplementary Figure S1. The cut-off value of 5hmC relative expression level in the ROC curve



**Supplementary Table s1. Clinical characteristics of enrolled patients in development cohort and validation cohort.**

<b>Variables</b>	<b>Development cohort (n=310)</b>	<b>Validation cohort (n=77)</b>	<b>p value</b>
<b>Age (years), n (%)</b>			0.837
Average/Median	61.8±13.5/64	60.9±14.8/63	
< 65	161 (51.9)	41 (53.2)	
≥ 65	149 (48.1)	36 (46.8)	
<b>Gender, n (%)</b>			0.481
Female	114 (36.8)	25 (32.5)	
Male	196 (63.2)	52 (67.5)	
<b>Tumor Size (cm), n (%)</b>			0.758
Average/Median	6.2±3.7/5.0	6.0±3.8/5.1	
≤ 5	159 (51.3)	41 (53.2)	
> 5	151 (48.7)	36 (46.8)	
<b>Capsule Invasion, n (%)</b>			0.246
No	226 (72.9)	51 (66.2)	
Yes	84 (27.1)	26 (33.8)	
<b>Vein Invasion, n (%)</b>			0.095
No	252 (81.3)	56 (72.7)	
Yes	58 (18.7)	21 (27.3)	
<b>T Stage, n (%)</b>			0.775
T1	179 (57.7)	47 (61.0)	
T2	25 (8.1)	5 (6.5)	
T3	102 (32.9)	22 (28.6)	
T4	4 (1.3)	3 (3.9)	
<b>N Stage, n (%)</b>			0.140
N0/Nx	298 (96.1)	73 (94.8)	
N1	6 (1.9)	3 (3.9)	
N2	6 (1.9)	1 (1.3)	
<b>M Stage, n (%)</b>			0.840
M0/Mx	288 (92.9)	73 (94.8)	
M1	22 (7.1)	4 (5.2)	
<b>Clinical Stage, n (%)</b>			0.901
1	175 (56.5)	42 (54.5)	
2	25 (8.1)	7 (9.1)	
3	85 (27.4)	23 (29.9)	
4	25 (8.1)	5 (6.5)	
<b>Furhman Grade, n (%)</b>			0.652
1	64 (20.6)	17 (22.1)	
2	122 (39.4)	29 (37.7)	
3	89 (28.7)	24 (31.2)	
4	35 (11.3)	7 (9.1)	
<b>5hmC%, n (%)</b>			0.577
Average/Median	28.2±25.0/20	30.6±23.1/22	
Low (≤20%)	168 (54.2)	39 (50.6)	
High (>20%)	142 (45.8)	38 (49.4)	

**Supplementary table s2. Correlations between 5hmC expression and clinicopathological factors of RCC patients in validation cohort.**

Characteristics	5hmC expression (RCC)		<i>p</i> value
	Low (n=39)	High (n=38)	
<b>Age (years), n</b>			0.742
< 65	23	21	
≥ 65	16	17	
<b>Gender, n</b>			0.501
Female	13	10	
Male	26	28	
<b>Tumor Size (cm), n</b>			0.050
≤ 5	17	25	
> 5	22	13	
<b>Capsule Invasion, n</b>			0.044
No	25	32	
Yes	14	6	
<b>Vein Invasion, n</b>			0.050
No	28	34	
Yes	11	4	
<b>T Stage, n</b>			0.020
T1-T2	21	30	
T3-T4	18	8	
<b>N Stage, n</b>			0.571
N0/Nx	37	37	
N1-N2	2	1	
<b>M Stage, n</b>			0.028
M0/Mx	32	37	
M1	7	1	
<b>Clinical Stage, n</b>			0.022
1-2	20	29	
3-4	19	9	
<b>Furhman Grade, n</b>			0.285
1-2	21	25	
3-4	18	13	

**Supplementary table s3. External data validation of the OS prediction of RCC.**

		10-year OS (Validation cohort)		Total
		Alive	Dead	
10-year OS (Prediction nomogram)	Alive	34	10	44
	Dead	6	27	33
Total		40	37	77

Sensitivity =  $34/(34+10)=77.3\%$

Specificity =  $27/(27+6)=81.8\%$

**Supplementary table s4. External data validation of the OS prediction of ccRCC.**

		10-year OS (Validation cohort)		Total
		Alive	Dead	
10-year OS (Prediction nomogram)	Alive	23	7	30
	Dead	5	24	29
Total		28	31	59

Sensitivity =  $23/(23+7)=76.7\%$

Specificity =  $24/(24+5)=82.8\%$