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## SUPPLEMENTAL DATA

# Systemic analysis of the expression and prognostic significance of USP31 in endometrial cancer

Table S1. Univariate Cox logistic regression analysis of recurrence-free survival.

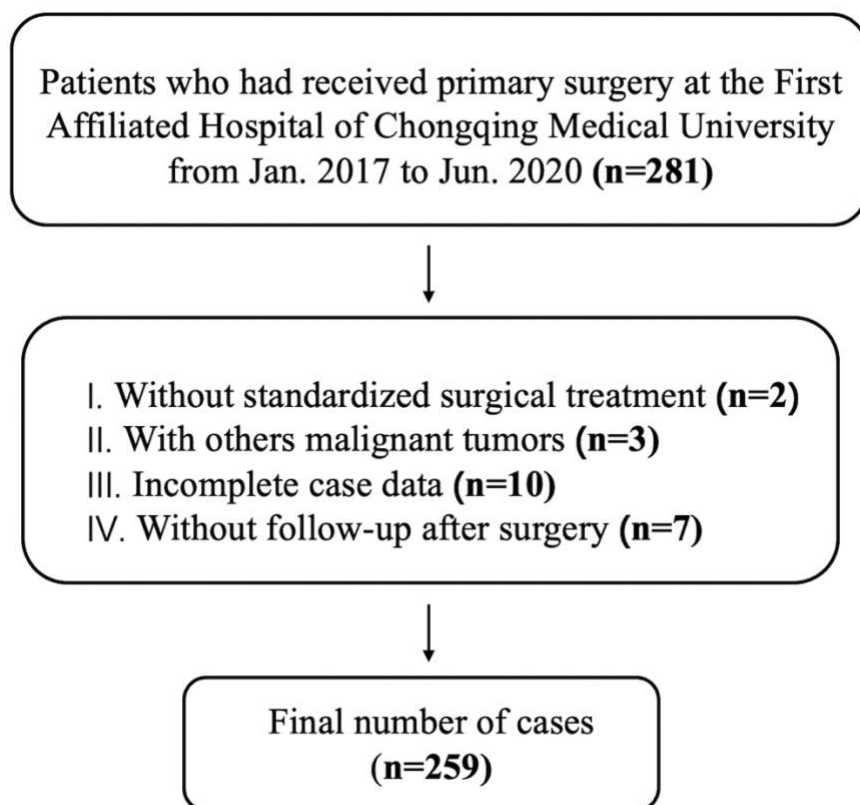
Variates	HR	95%CI	P value
Age	1.043	1.006-1.082	0.024
BMI	0.925	0.836-1.024	0.133
Cervical stromal invasion (ref. No)	6.313	3.179-12.538	<0.001
Myometrial invasion (ref. No)	3.675	1.851-7.296	<0.001
FIGO Staging (ref. I)			<0.001
FIGO II	1.796	0.523-6.163	0.352
FIGO III	12.059	5.860-24.813	<0.001
Grade (ref. G1)			0.005
G2	3.874	1.419-10.576	0.008
G3	5.649	1.989-16.042	0.001
ER $\alpha$ (ref. High)	11.690	5.875-23.259	<0.001
PR (ref. High)	5.598	2.750-11.394	<0.001
p53 (ref. Low)	4.530	2.155-9.519	<0.001
Ki67 (ref. Low)	2.020	1.020-3.998	0.044
USP31 (ref. Low)	0.340	0.140-0.823	0.017

FIGO: International Federation of Gynecology and Obstetrics; ER $\alpha$ : Estrogen receptor  $\alpha$ ; PR: Progesterone receptor; USP31: Ubiquitin-specific protease 31; BMI: Body mass index; HR: Hazard ratio; CI: Confidence interval.

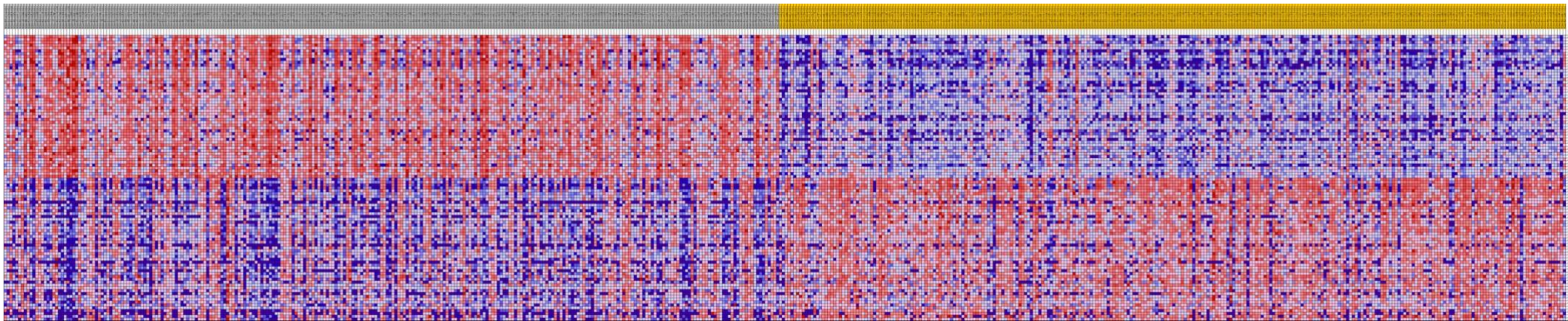
**Table S2. Univariate Cox logistic regression analysis of overall survival**

<b>Variates</b>	<b>HR</b>	<b>95%CI</b>	<b>P value</b>
<b>Age</b>	1.044	1.000-1.090	0.053
<b>BMI</b>	0.901	0.795-1.022	0.105
<b>Cervical stromal invasion (ref. No)</b>	4.485	1.945-10.365	<0.001
<b>Myometrial invasion (ref. No)</b>	3.174	1.399-7.202	0.006
<b>FIGO Staging (ref. I)</b>			<0.001
FIGO II	0.784	0.102-6.028	0.815
FIGO III	9.590	4.133-22.250	<0.001
<b>Grade (ref. G1)</b>			0.114
G2	2.599	0.903-7.481	0.077
G3	3.179	1.009-10.018	0.048
<b>ER<math>\alpha</math> (ref. High)</b>	9.486	4.174-21.561	<0.001
<b>PR (ref. High)</b>	6.218	2.686-14.395	<0.001
<b>p53 (ref. Low)</b>	5.440	2.144-13.804	<0.001
<b>Ki67 (ref. Low)</b>	1.622	0.711-3.700	0.251
<b>USP31 (ref. Low)</b>	0.437	0.162-1.178	0.102

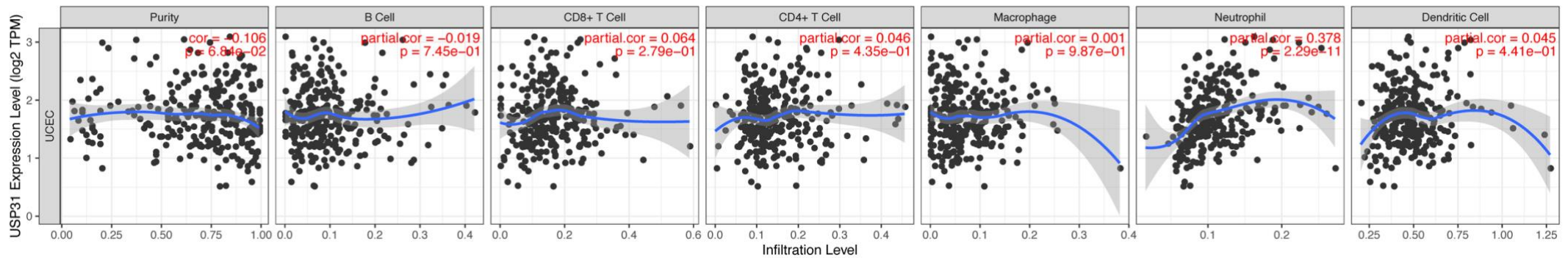
FIGO: International Federation of Gynecology and Obstetrics; ER $\alpha$ : Estrogen receptor  $\alpha$ ; PR: Progesterone receptor; USP31: Ubiquitin-specific protease 31; BMI: Body mass index; HR: Hazard ratio; CI: Confidence interval.



**Figure S1. Patients' enrollment and exclusion criteria**



**Figure S2. Heat map of transcriptional expression profiles of 100 significant genes with positive and negative correlation with *USP31*. Gene set enrichment analysis (GSEA). USP31: Ubiquitin-specific protease 31.**



**Figure S3. Correlation of USP31 expression and immune infiltration. USP31: Ubiquitin-specific protease 31**