Supplementary Table 1. Ovarian cancer patient characteristics

		OS			DFS		
		N	P	HR (95%CI)	N	P	HR (95%CI)
Age mean (min-max)		135 56 (22-84)	0.01	1.03 1.01-1.05		0.0024	1.03 1.01-1.05
Stage	I, II	32	<0.0001	11.82 3.68-37.9		<0.0001	10.28 3.68-28.74
	III, IV	103					
Debulking	Optimal	82	0.001	0.45 0.28-0.72		0.0002	0.41 0.26-0.66
	Suboptimal	52					
Grade	< 2	28	0.002	2.95 1.48-5.86		0.0001	3.98 1.95-8.14
	$\geq$ 2	106					
Histology*	Serous	97	0.13	0.50 0.20-1.25		NS	0.59 0.26-1.38
	Endometrioid	14					
	Others	20					
CD8	High	67	0.2085	0.73 0.45-1.19		NS	0.83 0.53-1.30
	Low	68					
CD8$^+$EZH2$^+$	High	64	0.0027	0.46 0.28-0.77		0.008	0.53 0.33-0.85
	Low	71					
EZH2$^+$ (% in CD8$^+$)	High	66	<0.0001	0.30 0.18-0.50		0.0045	0.51 0.32-0.81
	Low	67					

Note: Optimal debulking is defined as residual implants $\leq$ 1 cm. DFI, disease-free interval;

* endometrioid vs serous+others; NS: P > 0.1

Supplementary Table 2. Multivariate survival analysis

	P	HR (95%CI)
Age	0.029	1.026 (1.003, 1.050)
FIGO Stage	0.001	7.311 (2.167, 24.658)
Grade	NS	1.609 (0.755, 3.430)
Histology*	NS	0.953 (0.354, 2.564)
Debulking	NS	0.780 (0.463, 1.314)
CD8	0.085	0.621 (0.361, 1.068)

* endometrioid vs others; NS: P > 0.1

Supplementary Table 3. Multivariate survival analysis

	P	HR (95%CI)
Age	0.043	1.024 (1.001, 1.047)
FIGO Stage	0.002	7.130 (2.120, 23.975)
Grade	NS	1.400 (0.664, 2.952)
Histology*	NS	0.860 (0.320, 2.309)
Debulking	NS	0.779 (0.462, 1.312)
CD8$^+$EZH2$^+$	0.036	0.554 (0.319, 0.963)

* endometrioid vs others; NS: P > 0.1

Supplementary Table 4. Multivariate survival analysis

	P	HR (95%CI)
Age	NS	1.013 (0.990, 1.036)
FIGO Stage	0.002	7.345 (2.123, 25.406)
Grade	NS	1.130 (0.523, 2.441)
Histology*	NS	1.207 (0.437, 3.334)
Debulking	0.060	0.595 (0.351, 1.007)
EZH2$^+$ (% in CD8$^+$)	< 0.0001	0.343 (0.202, 0.581)

* endometrioid vs others; NS: P > 0.1

Supplementary Table 5. Sequences of primers for PCR and ChIP assay and shRNAs

RT-PCR primers

Name	Forward	Reverse
Ezh2	TGCAGTTGCTTCAGTACCCATAAT	ATCCCCGTGTACTTTCCCATCATAAT
GAPDH	GAAGGTGAAGGTCGGAGT	GAAGATGGTGATGGGATTTC
Bcl2	TGTGGAGAGCGTCAACCGGGAG	GCAAGCTCCCACCAGGGCCAAA
Hes1	GCAGATGACGGCTGCGCTGA	AAGCGGGTCACCTCGTTCATGC
Hey1	TGAGAAGGCTGGTACCCAGTGCT	TCCATAGCAAGGGCGTGCGC
Hey2	AGAGAAAAGGCGTCGGGATCGGA	CCATGGCAAGAGCGTGTGCG
Numb	AGCGCAAGCAGAAGCGGGAG	CGGCGTGGGATGGCATGAGG
Fbxw7	GGCGCCGCGGCTCTTTTCTA	GCTGCCCACAGAGAGCAGTTCC
Bak1	GACGCCCATTCCTGGAAACT	CTTGCCCCGAAGCCATTTTT
Bax1	TGCTTCAGGGTTTCATCCAG	GGCGGCAATCATCCTCTG
Bim1	ACTCTCGGACTGAGAAACGC	CTTCACCTCCGTGATTGCCT

ChIP primers

Numb	GCGTCTGCCCCTCCTTTGCT	TACCCGCCCGTCATCGCTCT
Fbxw7	CCGGGAGAAGTGGCCCTGGA	GAAGCGGTGCTCGTGTCGCT

EZH2 shRNA sequences

1	aaG AGG TTC AGA CGA GCT GAT ga
2	aaA GAC TCT GAA TGC AGT TGC tt