

Supplementary materials

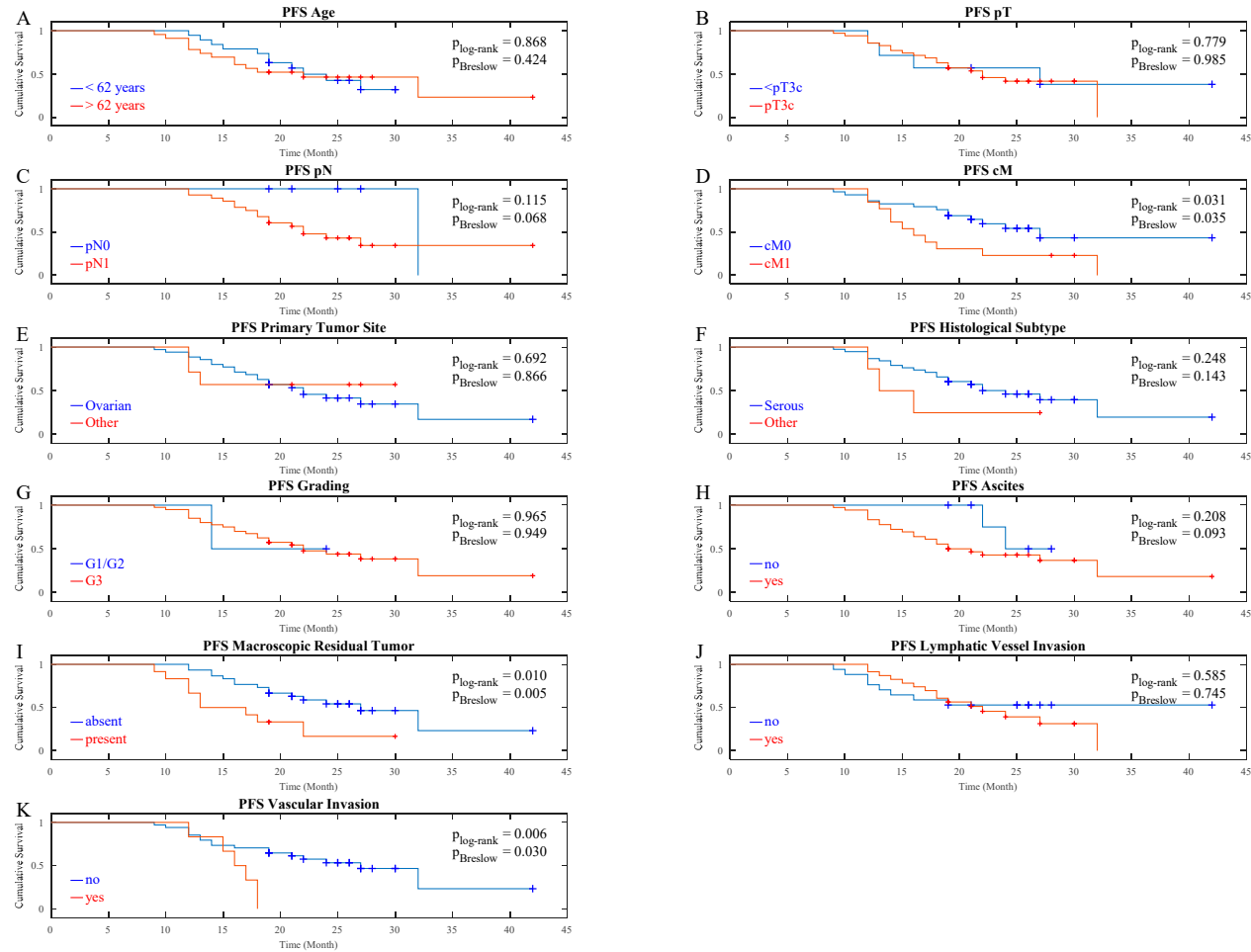


Figure S1. Kaplan-Meier-Curves for progression free interval (PFS) of different clinicopathological parameters. (A) Age (B) pT (C) pN (D) cM (E) Primary Tumor Site (F) Histological Subtype (G) Grading (H) Ascites (I) Macroscopic Residual Tumor (J) Lymphatic Vessel Invasion (K) Vascular Invasion. p: pathological, c: clinical, T: extent of primary tumor, N: regional lymph node metastasis, M: distant metastasis. *p*-values calculated by log-rank-test and Breslow-test.

Table S1. Clinicopathological factors in relation to platinum-sensitivity.

	n	Platinum-Sensitivity*		<i>p</i> [#]
		reduced	full	
Age	42			0.191
≤ 62 years		4	15	
> 62 years		10	13	
pT	42			0.668
< pT3c		3	4	
pT3c		11	24	
pN	33			0.559
pN0		0	5	
pN1		7	21	
cM	42			0.015
cM0		6	23	
cM1		8	5	
Primary Tumor Site	42			0.668
Ovarian		11	24	
Other		3	4	
Histological Subtype	42			0.1
Serous		11	27	
Other		3	1	
Grading	42			1
G1/G2		1	1	
G3		13	27	
Ascites	42			0.083
No		0	6	
Yes		14	22	
Macroscopic Residual Tumor after Surgery	42			0.067
Absent		7	23	
Present		7	5	
Lymphatic Vessel Invasion	40			0.521
No		7	10	
Yes		7	16	
Vascular Invasion	40			0.159
No		10	24	
Yes		4	2	

n: number of patients, p: pathological, c: clinical, T: extent of primary tumor, N: regional lymph node metastasis, M: distant metastasis. *Platinum-sensitivity was defined as follows: reduced (relapse ≤12 months after chemotherapy) and full (relapse >12 months after chemotherapy), [#]*p*-value calculated by Fisher's exact two-tailed test.

Table S2. Immune cell phenotypes in primary tumor in relation to clinicopathological factors.

	Age			pT			pN			cM			Primary Tumor Site			Histological Subtype			Grading			Ascites		Macroscopic Residual Tumor		Lymphytic Vessel Invasion		Vascular Invasion											
	n	≤62	>62	p [#]	n	<pT3c	pT3c	p [#]	n	pN0	pN1	p [#]	n	cM0	cM1	p [#]	n	Ovarian	Oth	p [#]	n	G1/G2	G3	p [#]	n	n	ye	p [#]	n	absent	present	p [#]	n	no	yes	p [#]	n	n	ye
CD45 stromal	49	7	7	0.54	4	1	13	0.41	3	8	0.15	4	0.04	4	2	9	0.70	4	2	9	0.61	4	6	9	0.49	4	1	49	1	47	0.528	4	7	4	0.24				
Low		7	7		1	13		3	8	0.15	4	0.04	4	2	9	0.70	4	2	9	0.61	4	6	9	0.49	4	1	49	1	47	0.528	4	7	4	0.24					
High		14	21		7	28		6	21		22	13		27	8		12	2			12	2	1	13	2	12		10	4		5	9		13	1				
CD45 intratumoral	49	11	16	0.77	4	4	23	0.41	3	8	0.66	4	1	4	9	1	4	9	1	4	9	1	4	9	1	4	0.00	6	49	1	47	0.239	4	7	6	0.48			
Low		11	16		4	23		4	16		19	8		21	6		21	6			24	3	1	26	8	19		19	8		14	12		22	4				
High		10	12		4	18		2	16		16	6		18	4		18	4			20	2	1	21	0	22		16	6		7	14		16	5				
CD3 stromal	49	15	13	0.14	4	6	22	0.43	3	8	0.68	4	0.22	4	2	9	1	4	9	0.37	4	6	9	0.5	4	0.71	49	0.222	47	0.374	4	7	5	0.46					
Low		15	13		6	22		3	19		22	6		22	6		22	6			24	4	2	26	4	24		22	6		14	13		23	4				
High		6	15		2	19		3	13		13	8		17	4		17	4			20	1	0	21	4	17		13	8		7	13		15	5				
CD3 intratumoral	49	14	13	0.24	4	5	22	0.71	3	8	0.39	4	0.53	4	9	0.15	4	2	9	0.05	4	6	9	1	4	1	49	0.207	47	0.076	4	7	3	0.26					
Low		14	13		5	22		4	14		18	9		19	8		19	8			22	5	1	26	4	23		17	10		15	11		23	3				
High		7	15		3	19		2	18		17	5		20	2		20	2			22	0	1	21	4	18		18	4		6	15		15	6				
CD8 stromal	49	13	15	0.77	4	6	22	0.43	3	8	0.39	4	0.22	4	2	9	0.72	4	6	9	0.37	4	6	9	1	4	0.26	3	49	0.542	47	1	4	7	5	0.46			
Low		13	15		6	22		2	18		22	6		23	5		24	5			24	4	1	27	3	25		21	7		12	15		23	4				
High		8	13		2	19		4	14		13	8		16	5		16	5			20	1	1	20	5	16		14	7		9	11		15	5				
CD8 intratumoral	49	17	14	0.03	4	6	25	0.69	3	8	1	4	0.52	4	9	0.72	4	6	9	0.14	4	3	9	1	4	1	49	0.744	47	0.562	4	7	4	0.27					
Low		17	14		6	25		3	8		1	4	0.52	4	9	0.72	4	6	9	0.14	4	3	9	1	4	1	49	0.744	47	0.562	4	7	4	0.27					
High		4	14		2	16		2	12		14	4		15	3		15	3			18	0	1	17	3	15		12	6		7	11		13	5				
PD-1 stromal	49	15	20	1	4	4	31	0.20	3	8	0.15	4	1	4	9	0.70	4	2	9	1	4	9	1	4	1	49	0.294	47	0.528	4	7	3	0.01						
Low		15	20		4	31		2	23		25	10		27	8		31	4			31	4	2	33	6	29		23	12		16	17		30	3				
High		6	8		4	10		4	9		10	4		12	2		13	1			13	1	0	14	2	12		12	2		5	9		8	6				
PD-1 intratumoral	49	15	18	0.76	4	4	29	0.41	3	8	0.39	4	0.50	4	9	0.46	4	4	9	1	4	9	1	4	1	49	1	47	0.355	4	7	1	0.12						
Low		15	18		4	29		3	22		25	8		25	8		29	4			29	4	2	31	6	27		23	10		16	16		28	4				
High		6	10		4	12		3	10		10	6		14	2		15	1			15	1	0	16	2	14		12	4		5	10		10	5				
PD-L1 Positivity	49	10	9	0.37	4	3	16	1	3	8	0.37	4	0.04	4	9	1	4	9	1	4	9	1	4	5	9	1	49	1	47	0.775	4	7	8	0.27					
No		10	9		3	16		1	15		17	2		15	4		17	2			17	2	2	17	3	16		14	5		9	10		17	2				
Yes		11	19		5	25		5	17		18	12		24	6		27	3			27	3	0	30	5	25		21	9		12	16		21	7				

n: number of patients, p: pathological, c: clinical, T: extent of primary tumor, N: regional lymph node metastasis, M: distant metastasis, PD-1: programmed cell-death protein 1, PD-L1: programmed cell-death ligand 1. *p-value calculated by Fisher's exact two-tailed test.

Table S3. Comparison of the immune cell phenotypes between primary tumor and corresponding lesions.

	n PT > OM	n PT = OM	n PT < OM	<i>p</i>[#]	n PT > PE	n PT = PE	n PT < PE	<i>p</i>[#]
CD45 stromal	2	9	12	0.007	3	9	3	0.739
CD45 intratumoral	3	18	2	0.655	4	10	1	0.48
CD3 stromal	7	0	16	0.005	4	1	10	0.331
CD3 intratumoral	8	1	14	0.221	8	0	7	0.82
CD8 stromal	7	0	16	0.012	8	0	7	0.82
CD8 intratumoral	7	1	15	0.131	4	2	9	0.124
PD-1 stromal	7	1	15	0.013	8	1	6	0.95
PD-1 intratumoral	9	7	7	0.569	10	3	2	0.054
PD-L1 Expression	4	15	4	0.944	1	10	4	0.078

n: number of analyzed tumor samples, PT: Primary tumor, OM: Omental lesion, PE: Peritoneal lesion, PD-1: programmed cell-death protein 1, PD-L1: programmed cell-death ligand 1.

[#] *p*-value calculated by Wilcoxon signed-rank test.

Table S4. Ratios of immune cell phenotypes between primary tumor and omental lesion in relation to clinicopathological factors.

	Age		pT			pN			cM		Primary Tumor Site			Histological Subtype			Grading		Ascites		Macroscopic Residual Tumor		Lymphytic Vessel Invasion			Vascular Invasion																		
	n	≤6	p [†]	n	<pT3	pT3	p [†]	n	pN	pN	p [†]	n	cM	cM	p [†]	n	Ovaria	Othe	p [†]	n	Serous	Other	p [†]	n	G1/G	G	p [†]	n	ye	s	p [†]	n	absent	present	p [†]	n	no	yes	p [†]	n	no	yes	p [†]	
CD45 stromal	2		0.19	2			1	1		0.01	2			0.59	2				0.06	23				1	2			0.47	2			0.59	23			1	22			0.395	22			0.476
OM ≤ PT	2	9		1	10			4	4			9	2			6	5			10	1			0	11			2	9			8	3			7	4			11	0			
OM > PT	6	6		1	11			0	11			11	1			11	1			10	2			2	10			1	11			8	4			4	7			9	2			
CD45 intratumoral	2		1	2			1	1			1	2		0.24	2				1	23				1	2			0.17	2			1	23			1	22			1	22			1
OM ≤ PT	7	14		2	19			4	13			19	2			15	6			18	3			1	20			3	18			14	7			10	11			19	2			
OM > PT	1	1		0	2			0	2			1	1			2	0			2	0			1	1			0	2			2	0			1	0			1	0			
CD3 stromal	2			2			1			0.03	2				2					23				1	2			1	2			1	23			1	22			1	22			1
OM ≤ PT	1	6		0	7			3	2			6	1			4	3			6	1			0	7			1	6			5	2			4	3			6	1			
OM > PT	7	9		2	14			1	13			14	2			13	3			14	2			2	14			2	14			11	5			7	8			14	1			
CD3 intratumoral	2		0.08	2			0.14	1			0.60	2			1	2			0.64	23				1	2			0.50	2			0.53	23			0.176	22			0.659	22			0.515
OM ≤ PT	1	8		2	7			2	5			8	1			6	3			8	1			0	9			2	7			8	1			5	3			8	0			
OM > PT	7	7		0	14			2	10			12	2			11	3			12	2			2	12			1	13			8	6			6	8			12	2			
CD8 stromal	2		1	2			1	1		0.27	2			0.52	2				0.31	23				1	2			1	2			0.20	23			0.626	22			1	22			1
OM ≤ PT	2	5		0	7			2	3			7	0			4	3			6	1			0	7			2	5			4	3			4	3			6	1			
OM > PT	6	10		2	14			2	12			13	3			13	3			14	2			2	14			1	15			12	4			7	8			14	1			
CD8 intratumoral	2		0.17	2			0.11	1			0.55	2			1	2			0.62	23				1	2			1	2			0.26	23			0.345	22			1	22			0.515
OM ≤ PT	1	7		2	6			2	4			7	1			5	3			7	1			1	7			2	6			7	1			4	4			8	0			
OM > PT	7	8		0	15			2	11			13	2			12	3			13	2			1	14			1	14			9	6			7	7			12	2			
PD-1 stromal	2		0.65	2			1	1		0.07	2				1	2			0.62	23				1	2			0.52	2			1	23			0.657	22			1	22			0.121
OM ≤ PT	2	6		1	7			3	3			7	1			5	3			7	1			0	8			1	7			5	3			4	4			6	2			
OM > PT	6	9		1	14			1	12			13	2			12	3			13	2			2	13			2	13			11	4			7	7			14	0			
PD-1 intratumoral	2		1	2			1	1		0.25	2			0.52	2				0.62	23				1	2			0.52	2			1	23			1	22			1	22			1
OM ≤ PT	6	10		2	14			4	9			13	3			11	5			14	2			1	15			2	14			11	5			8	7			13	2			
OM > PT	2	5		0	7			0	6			7	0			6	1			6	1			1	6			1	6			5	2			3	4			7	0			
PD-L1 Positivity	2		0.25	2			1	1			2			0.45	2				0.53	23				1	2			0.32	2			1	23			1	22			0.586	22			1
OM ≤ PT	8	11		2	17			3	13		0.53	17	2			13	6			16	3			1	18			3	16			13	6			10	8			16	2			
OM > PT	0	4		0	4			1	2			3	1			4	0			4	0			1	3			0	4			3	1			1	3			4	0			

n: number of patients, PT: Primary tumor, OM: Omental lesion, p: pathological, c: clinical, T: extent of primary tumor, N: regional lymph node metastasis, M: distant metastasis, PD-1: programmed cell-death protein 1, PD-L1: programmed cell-death ligand 1. [†]p-value calculated by Fisher's exact two-tailed test.

Table S5. Ratios of immune cell phenotypes between primary tumor and peritoneal lesion in relation to clinicopathological factors.

	Age			pT			pN			cM			Primary Tumor Site			Histological Subtype			Grading			Ascites			Macroscopic Residual Tumor			Lymphytic Vessel Invasion			Vascular Invasion																	
	n	≤62	>62	p [†]	n	<pT3	pT3	p [†]	n	pN0	pN1	p [†]	n	cM0	cM1	p [†]	n	Ovaria	Othe	p [†]	n	Serous	Other	p [†]	n	G1/G2	G3	p [†]	n	n	ye	s	p [†]	n	absent	present	p [†]	n	no	yes	p [†]	n	no	yes	p [†]	n	no	yes
CD45 stromal	1			1	1		0.37	1				1	1			1	1			0.51	15			1	1			1	1			0.24	15			1	14			0.176	14			1				
PE ≤ PT	6	6			1	11				10		7	5			10	2			12				12	3	9		9	3			2	9			2	9			9	2							
PE > PT	1	2			1	2			1		2	1			2	1		2	1		3			3	2	1		2	1			2	1			2	1			2	1							
CD45 intratumoral	1		0.46	1	1		1	1				1	1			1	1			1	15			1	1			0.33	15			1	14			1	14			1	14			1				
PE ≤ PT	6	8			2	12				10		8	6			11	3			14				14	4	10		10	4			4	9			4	9			10	3							
PE > PT	1	0			0	1			1		1	0			1	0		1	0		1			1	1	0		1	0			0	1			0	1			1	0							
CD3 stromal	1		0.28	1	1		0.52	1				1	1			0.32	1			1	15			1	1			1	15			1	14			0.520	14			1	14			1				
PE ≤ PT	1	4			0	5				4		2	3			4	1			5				5	2	3		4	1			2	2			2	2			3	1							
PE > PT	6	4			2	8			7		7	3			8	2				10				10	3	7		7	3			7	3			2	8			8	2							
CD3 intratumoral	1		0.61	1	1		0.46	1				1	1			0.11	1			1	15			1	1			1	15			0.569	14			0.559	14			1	14			1				
PE ≤ PT	3	5			2	6				4		3	5			6	2			8				8	3	5		5	3			3	4			3	4			5	2							
PE > PT	4	3			0	7			7		6	1			6	1				7				7	2	5		6	1			1	6			1	6			6	1							
CD8 stromal	1		0.61	1	1		0.2	1				1	1			0.60	1			0.2	15			1	1			1	15			0.569	14			0.559	14			1	14			1				
PE ≤ PT	3	5			0	8				6		4	4			5	3			8				8	3	5		5	3			3	4			3	4			5	2							
PE > PT	4	3			2	5			5		5	2			7	0				7				7	2	5		6	1			1	6			1	6			6	1							
CD8 intratumoral	1		0.11	1	1		0.48	1				1	1			0.62	1			0.52	15			1	1			0.32	15			1	14			0.245	14			1	14			1				
PE ≤ PT	1	5			0	6				4		3	3			4	2			6				6	3	3		4	2			3	3			3	3			5	1							
PE > PT	6	3			2	7			7		6	3			8	1				9				9	2	7		7	2			1	7			1	7			6	2							
PD-1 stromal	1		0.11	1	1		0.48	1				1	1			0.62	1			0.22	15			1	1			0.58	15			0.604	14			0.085	14			0.085	14			0.538				
PE ≤ PT	6	3			2	7				6		6	3			6	3			9				9	4	5		6	3			4	4			4	4			7	1							
PE > PT	1	5			0	6			5		3	3			6	0				9				6	1	5		5	1			0	6			0	6			4	2							
PD-1 intratumoral	1		0.20	1	1		1	1				1	1			0.48	1			0.37	15			1	1			1	15			1	14			0.505	14			0.505	14			1				
PE ≤ PT	5	8			2	11				9		7	6			11	2			13				13	4	9		9	4			3	9			3	9			9	3							
PE > PT	2	0			0	2			2		2	0			1	1				2				2	1	1		2	0			1	1			1	1			2	0							
PD-L1 Positivity	1		1	1	1		1	1				1	1			0.60	1			1	15			1	1			0.23	15			1	14			0.251	14			0.251	14			0.505				
PE ≤ PT	5	6			2	9				8		6	5			9	2			11				11	5	6		8	3			4	6			4	6			7	3							
PE > PT	2	2			0	4			3		3	1			3	1				4				4	0	4		3	1			0	4			0	4			4	0							

n: number of patients, PT: Primary tumor, PE: Peritoneal lesion, p: pathological, c: clinical, T: extent of primary tumor, N: regional lymph node metastasis, M: distant metastasis, PD-1: programmed cell-death protein 1, PD-L1: programmed cell-death ligand 1. [†]p-value calculated by Fisher's exact two-tailed test.

Table S6. Description of primary tumor site and corresponding lesions per patient.

Patient Number	Primary Tumor Site—According to Pathological Report	Location of Corresponding Lesions	
		Omentum	Peritoneum
5064	Ovary	Greater Omentum	
5085	Ovary		Peritoneum*
5188	Ovary	Greater Omentum	
4747	Ovary	Greater Omentum	Sigma
4757	Ovary		Peritoneum*
4976	Ovary		Peritoneum*
5074	Ovary	Greater Omentum	
5146	Ovary	Greater Omentum	
5196	Ovary	Greater Omentum	
5199	Ovary	Greater Omentum	
5243	Ovary	Greater Omentum	
5306	Ovary	Greater Omentum	Peritoneum*
4751	Fallopian Tube	Greater Omentum	
4754	Ovary		Peritoneum*
5072	Ovary	Greater Omentum	Sigma
5082	Fallopian Tube		Sigma
5097	Ovary	Greater Omentum	
5170	Fallopian Tube	Greater Omentum	
5216	Fallopian Tube	Greater Omentum	
5264	Ovary	Greater Omentum	Diaphragm
5266	Fallopian Tube	Greater Omentum	
5277	Peritoneum	Greater Omentum	Uterus
5281	Peritoneum	Greater Omentum	Diaphragm
4843	Ovary	Greater Omentum	
4940	Ovary		Peritoneum*
5075	Ovary		Liver Capsule
5242	Ovary	Greater Omentum	
5070	Ovary	Greater Omentum	
5088	Ovary	Greater Omentum	
5103	Ovary		Sigma
5121	Ovary	Greater Omentum	
5137	Ovary		Peritoneum*

* not further specified.

Table 7. Description of rating method.

Rating	Individual Cells	Cluster
0	none	none
1	scattered	none
2	a few	none
3	a few	small, locally restricted
4	many	small and big, locally restricted
5	many	big, confluent