

**Supplementary Data S1. Diagnosis vs predicted status for all false positive / negative findings by CA125.** Predicted vs actual diagnosis and pathology information for each sample mis-diagnosed by CA125. (A) post-menopausal, and (B) pre-menopausal patients.

<b>A. Post-menopausal patients</b>								<b>Predicted malignant (1=yes, 0=no)</b>	
<b>Sample Identifier</b>	<b>menopausal status</b>	<b>Diagnosis</b>	<b>Pathology</b>	<b>Grade</b>	<b>Stage</b>	<b>Pre-OP CA125</b>	<b>MMP Index</b>	<b>CA125 <math>\geq 35</math>U/ml</b>	<b>MMP Index <math>\geq 3.648</math></b>
66	post	Malignant	serous	1	3C	8	1.853	0	0
526	post	Malignant	endometroid	3	1A	9	7.501	0	1
999	post	Malignant	mucinous	1	1A	14	2.091	0	0
452	post	Malignant	serous papillary/some squamoid appearance	3	3C	20	7.007	0	1
976	post	Malignant	serous	3	3C	21.3	8.775	0	1
986	post	Malignant	serous	3	3C	23.8	8.784	0	1
33	post	Malignant	serous	2	3C	34	6.091	0	1
26	post	Benign	cystadenoma	n/a	n/a	35	0.715	1	0
EP0392	post	Benign	simple cyst	n/a	n/a	35	0.898	1	0
140	post	Benign	mucinous fibroma & Brenner tumour	n/a	n/a	35	3.451	1	0
1082	post	Benign	serous adenofibroma& Brenner tumour	n/a	n/a	35.1	1.784	1	0
620	post	Benign	fibrothecoma	n/a	n/a	39	7.209	1	1
753	post	Benign	cystadenoma	n/a	n/a	43	0.096	1	0
646	post	Benign	fibroma	n/a	n/a	56	3.158	1	0
922	post	Benign	fibroma	n/a	n/a	63	1.333	1	0
560	post	Benign	fibroma	n/a	n/a	71	0.582	1	0
98	post	Benign	simple cyst	n/a	n/a	102	2.155	1	0
47	post	Benign	cystadenoma	n/a	n/a	146	4.084	1	1
352	post	Benign	Haemorrhagic ovarian torsion	n/a	n/a	179	8.880	1	1
788	post	Benign	fibroma	n/a	n/a	268	1.394	1	0
775	post	Benign	Papillary adenofibroma	n/a	n/a	274	0.897	1	0
615	post	Benign	cystadenoma	n/a	n/a	282.5	9.692	1	1
843	post	Benign	cystadenofibroma	n/a	n/a	345	9.252	1	1
512	post	Benign	simple cyst	n/a	n/a	767	9.102	1	1

B. Pre-menopausal patients								Predicted malignant (1=yes, 0=no)			
Sample Identifier	menopausal status	Diagnosis	Pathology	Grade	Stage	Pre-OP CA125	MMP Index	CA125 ≥67U/ml	CA125 ≥200U/ml	CA125 ≥250U/ml	MMP Index ≥3.648
343	pre	Benign	fibroma	n/a	n/a	1841	0.128	1	1	1	0
845	pre	Malignant	mucinous	2	1A	15	0.173	0	0	0	0
388	pre	Malignant	Granulosa cell tumour	2	1A	10	0.244	0	0	0	0
287	pre	Benign	Xanthogranulomatous	n/a	n/a	538	0.377	1	1	1	0
1016	pre	Malignant	serous	3	3B	25	0.755	0	0	0	0
450	pre	Malignant	serous	2	3B	130	1.545	1	0	0	0
847	pre	Benign	Lipoid cell tumour	n/a	n/a	245	3.249	1	1	0	0
301	pre	Malignant	serous / clear cell	3	3C	58	3.684	0	0	0	1
649	pre	Malignant	dysgerminoma	2	1B	80	4.583	1	0	0	1
56	pre	Malignant	mucinous	1	1C	62	5.324	0	0	0	1
30	pre	Benign	cystadenomata	n/a	n/a	546	5.569	1	1	1	1
136	pre	Malignant	clear cell	3	1C	132	7.825	1	0	0	1
336	pre	Malignant	serous	2	3C	120	9.393	1	0	0	1
147	pre	Malignant	serous	3	3C	40	9.537	0	0	0	1
317	pre	Malignant	serous	3	3C	80	9.967	1	0	0	1