Supplementary Information

Table of contents

Supplementary Table 1. The survival data for ovarian cancer patients enrolled in IHC experiment and Kaplan-Meier analysis.

Patient No.	Organ	Diagnosis	Follow-up result	Follow-up months	FBXL7 low_1, high_2
4	Ovary	serous cystadenocarcinoma	1	125	2
6	Ovary	granulosa cell tumor	0	187	2
7	Ovary	endometrioid carcinoma	1	72	2
8	Ovary	mucinous cystadenoma of borderline malignancy	1	160	2
9	Ovary	serous cystadenofibroma	1	78	2
12	Ovary	papillary serous cystadenocarcinoma	1	153	2
13	Ovary	endometrioid carcinoma	1	83	1
15	Ovary	papillary serous cystadenocarcinoma	1	42	2
16	Ovary	papillary serous cystadenocarcinoma	1	26	2
17	Ovary	struma ovarii	0	180	1
18	Ovary	endometrioid adenoacanthofibroma	1	156	2
20	Ovary	papillary serous cystadenocarcinoma	1	48	2
21	Ovary	undifferentiated carcinoma	1	164	1
22	Ovary	clear cell carcinoma	1	30	2
24	Ovary	common epithelial carcinoma , poorly differentiated	0	174	1
25	Ovary	malignant muellerian mixed tumor	0	174	1
26	Ovary	dysgerminoma	0	174	1
28	Ovary	papillary serous cystadenocarcinoma	0	172	1
29	Ovary	sertoli-leydig cell tumor	1	82	1
32	Ovary	papillary serous cystadenocarcinoma	1	21	2
35	Ovary	granulosa-theca cell tumor	1	136	1
38	Ovary	clear cell carcinoma	0	161	1
39	Ovary	malignant muellerian mixed tumor	1	18	1
40	Ovary	clear cell carcinoma	0	159	1
41	Ovary	embryonal carcinoma	1	14	2
42	Ovary	granulosa cell tumor	0	157	1

43	Ovary	dysgerminoma	0	150	1
44	Ovary	papillary serous cystadenocarcinoma	1	34	2
47	Ovary	adenocarcinoma from salpinx	0	136	1
51	Ovary	serous cystadenocarcinoma, moderately differentiated	1	45	1
53	Ovary	serous cystadenocarcinoma, moderately differentiated	0	47	1
54	Ovary	endometrioid carcinoma	0	47	1
56	Ovary	adenocarcinoma, poorly differentiated	0	45	2
57	Ovary	clear cell carcinoma	0	45	1
59	Ovary	clear cell carcinoma	0	44	1

Supplementary Table 2. List of consensus genes with 1.5-fold changes in KURAMOCHI and OVSAHO cells following treatment with paclitaxel.

Probe ID	KURAMOCHI	OVSAHO	Gene Symbol
202859_x_at	1.928295	0.595535	CXCL8
234989_at	1.783833	0.857776	MIR612
211506_s_at	1.710674	0.617805	CXCL8
225239_at	1.548148	0.870925	MIR612
236841_at	1.373972	0.913855	LOC100134445
240971_x_at	1.341825	0.973964	
213813_x_at	1.243734	1.340563	
220295_x_at	1.214665	0.633918	DEPDC1
209118_s_at	1.154372	0.615633	TUBA1A
237238_at	1.074866	1.037621	WWC1
214041_x_at	1.068836	1.045738	RPL37A
224771_at	1.067367	1.182241	NAV1
235577_at	1.060006	0.951836	ZNF652
235984_at	1.040285	0.608362	
214001_x_at	0.974973	0.91309	RPS10
243981_at	0.974575	0.596066	STK4
236533_at	0.956902	0.783482	ASAP1
224559_at	0.950349	0.69671	MALAT1
211074_at	0.939653	1.029186	
231199_at	0.92521	0.721866	RP11-271C24.3
228613_at	0.918065	0.640564	RAB11FIP3
235757_at	0.913377	0.645474	
231211_s_at	0.911837	1.002266	YIF1B
238299_at	0.910261	0.626524	
235952_at	0.907732	-0.77104	DGKH
218995_s_at	0.90641	0.765953	EDN1
224321_at	0.88726	1.37545	TMEFF2
240307_at	0.867401	0.756256	
222576_s_at	0.861625	0.781863	AGO1
242431_at	0.85313	0.661743	
212952_at	0.828935	1.395851	CTC-425F1.4
229483_at	0.813105	0.607034	
243037_at	0.807443	0.591735	
232865_at	0.806242	0.683887	AFF4
241617_x_at	0.798709	0.63713	

223185_s_at	0.787555	0.629345	BHLHE41
202648_at	0.762096	0.659284	TCF3
213826_s_at	0.758109	0.580755	H3F3A
227223_at	0.73448	0.670256	RBM39
215450_at	0.730616	0.908543	SNRPE
213736_at	0.72742	0.960418	COX5B
242110_at	0.725183	0.682279	
232264_at	0.716572	0.906203	
237006_at	0.69366	0.67368	
239655_at	0.679654	0.644959	
222413_s_at	0.654935	0.664361	KMT2C
223217_s_at	0.654782	0.861758	NFKBIZ
216246_at	0.651939	0.628325	
241775_at	0.642129	0.715711	
242121_at	0.617583	1.013166	
239597_at	0.606089	0.715479	
219858_s_at	0.60532	-0.92256	MFSD6
213249_at	0.60182	-0.5879	FBXL7
221419_s_at	0.587385	0.758604	
241425_at	0.581279	0.640169	NUPL1
238420_at	-0.58018	-1.22938	TAOK1
1560020_at	-0.58486	-2.0726	DNAJC13
241685_x_at	-0.58674	-1.50725	PURA
202549_at	-0.58808	-0.95872	VAPB
229413_s_at	-0.59025	-0.68698	
217813_s_at	-0.59166	-0.67968	SPIN1
209258_s_at	-0.59174	-0.74469	SMC3
244703_x_at	-0.59307	-0.97918	IPO9
215528_at	-0.59359	0.604277	
211612_s_at	-0.59461	-1.16222	IL13RA1
218218_at	-0.59707	-0.95986	APPL2
208042_at	-0.6	-0.89812	AGGF1
211077_s_at	-0.6051	-1.38298	TLK1
220591_s_at	-0.60596	-0.7029	EFHC2
234992_x_at	-0.61204	-0.65865	ECT2
202905_x_at	-0.61291	-0.79681	NBN
235606_at	-0.61478	-0.71715	LINC00883
219717_at	-0.61695	-0.98428	DCAF16

212220_at	-0.62179	-1.55098	PSME4
203491_s_at	-0.62212	-0.84824	CEP57
202479_s_at	-0.62698	-0.79151	TRIB2
201206_s_at	-0.62786	-0.61345	RRBP1
1561615_s_at	-0.62878	-1.52369	SLC8A1
227510_x_at	-0.62989	-0.80488	MALAT1
205369_x_at	-0.63094	-1.03863	DBT
216555_at	-0.63765	-0.6158	PRR14L
206500_s_at	-0.6384	-1.36731	MIS18BP1
217644_s_at	-0.63863	-0.88367	SOS2
212514_x_at	-0.63965	-0.87327	DDX3X
203294_s_at	-0.6398	-1.23925	LMAN1
235388_at	-0.64065	-0.61758	CHD9
232238_at	-0.64105	-1.17108	ASPM
226090_x_at	-0.64193	-1.402	RABL3
223453_s_at	-0.64622	-1.40223	ATL3
205457_at	-0.64637	-0.60744	C6orf106
208859_s_at	-0.64654	-0.78584	ATRX
218430_s_at	-0.64931	-1.43939	RFX7
209127_s_at	-0.65362	-0.68793	SART3
1558924_s_at	-0.65375	-1.30475	CLIP1
239309_at	-0.65418	-0.71975	DLX6
208624_s_at	-0.65444	-1.22076	EIF4G1
219925_at	-0.6545	-1.28282	ZMYM6
203056_s_at	-0.6567	-1.31269	PRDM2
1552378_s_at	-0.65696	-0.70115	RDH10
208097_s_at	-0.65939	-0.91118	TMX1
1557918_s_at	-0.66069	-0.85486	SLC16A1
212570_at	-0.66253	-0.59674	ENDOD1
243999_at	-0.67154	-0.74283	SLFN5
221705_s_at	-0.67348	-0.92843	SIKE1
210733_at	-0.67481	-0.84665	TRAM1
220825_s_at	-0.67535	-0.63683	KIRREL
1558527_at	-0.67879	-0.60518	PAXIP1OS
228686_at	-0.67957	-0.78508	LINC01184
221695_s_at	-0.68072	-0.8985	MAP3K2
221590_s_at	-0.68109	-0.62176	ALDH6A1
214552_s_at	-0.68219	-1.03501	RABEP1

1555594_a_at	-0.68597	-0.67191	MBNL1
207981_s_at	-0.68731	-0.63662	ESRRG
210596_at	-0.69157	-0.65964	MAGT1
239486_at	-0.69663	-1.62759	REL
214007_s_at	-0.69977	-0.95819	TWF1
211022_s_at	-0.70248	-1.39602	ATRX
201646_at	-0.70293	-0.70388	SCARB2
216069_at	-0.70533	-0.81607	PRMT2
212092_at	-0.70544	-1.06395	PEG10
207924_x_at	-0.70634	-0.81621	PAX8
215992_s_at	-0.70644	-1.26591	RAPGEF2
241091_at	-0.7065	-0.92343	AGO3
202601_s_at	-0.70738	-0.99172	HTATSF1
207326_at	-0.71171	-0.78921	BTC
222456_s_at	-0.7118	-1.44523	LIMA1
228497_at	-0.71278	-0.62809	SLC22A15
1555106_a_at	-0.71861	-1.04745	CTDSPL2
1557100_s_at	-0.71901	-0.88293	HECTD1
242468_at	-0.71984	0.614569	
204909_at	-0.72609	-1.34299	DDX6
219234_x_at	-0.72844	-0.96585	SCRN3
228530_at	-0.73712	-0.61734	MZT1
1558143_a_at	-0.73716	-0.65399	BCL2L11
211814_s_at	-0.74639	-0.8622	CCNE2
1554390_s_at	-0.74881	-1.09034	ACTR2
213446_s_at	-0.74884	-1.08525	IQGAP1
1558015_s_at	-0.75465	-1.08808	ACTR2
201101_s_at	-0.7548	-0.97688	BCLAF1
208930_s_at	-0.7576	-0.95641	ILF3
222508_s_at	-0.75818	-1.31456	ARGLU1
241752_at	-0.76142	-1.10609	SLC8A1
220946_s_at	-0.76254	-0.97605	SETD2
239148_at	-0.76373	-0.71258	MARVELD3
223584_s_at	-0.76378	-1.56481	KBTBD2
242475_at	-0.76476	-0.90236	
207213_s_at	-0.76623	-0.88722	USP2
222586_s_at	-0.76922	-0.69516	OSBPL11
224775_at	-0.77035	-0.76699	IWS1

217576_x_at	-0.77053	-0.73725	SOS2
238959_at	-0.77152	-0.61245	LARP4
1554588_a_at	-0.77292	-0.76592	TTC30B
222439_s_at	-0.77405	-0.72471	THRAP3
244396_at	-0.77718	-1.78543	G3BP1
237444_at	-0.77775	-1.09563	KIF13A
1556551_s_at	-0.78132	-1.24222	SLC39A6
219558_at	-0.78406	-1.13561	ATP13A3
242630_at	-0.78581	-0.61965	
204680_s_at	-0.78861	-0.58446	RAPGEF5
243857_at	-0.78867	-0.89082	MORF4L2
203990_s_at	-0.7903	-1.07345	KDM6A
206652_at	-0.79368	-0.97931	ZMYM5
221985_at	-0.79552	-0.96292	KLHL24
223940_x_at	-0.79977	-0.93532	MALAT1
235461_at	-0.80232	-0.81021	TET2
205787_x_at	-0.80429	-0.61296	LOC441155
228186_s_at	-0.80465	-0.6411	RSPO3
217208_s_at	-0.81394	-0.97579	DLG1
223882_at	-0.81489	-1.52357	FAM172A
230926_s_at	-0.82838	-1.15984	ODF2L
227276_at	-0.8289	-0.822	PLXDC2
229281_at	-0.83447	-0.85073	NPAS3
215092_s_at	-0.83466	-1.20503	NFAT5
1553304_at	-0.83608	-1.10991	LSM14B
1555058_a_at	-0.83633	-0.6626	LPGAT1
231174_s_at	-0.84052	-1.26928	
223888_s_at	-0.84543	-1.66618	LARS
235050_at	-0.84817	-0.66527	SLC2A12
212113_at	-0.84868	-0.68526	ATXN7L3B
200956_s_at	-0.85071	-0.86448	SSRP1
220885_s_at	-0.8555	-1.39354	CENPJ
201562_s_at	-0.86729	-1.03174	SORD
217599_s_at	-0.86734	-2.01953	MDFIC
212065_s_at	-0.87208	-1.04315	USP34
1569472_s_at	-0.87461	-1.27069	TTC3
203293_s_at	-0.88144	-1.23682	LMAN1
200727_s_at	-0.89101	-1.17222	ACTR2

235030_at	-0.89301	-1.2157	NXPE3
226533_at	-0.89306	-1.15708	HINT3
216521_s_at	-0.91898	-1.12833	BRCC3
241403_at	-0.9212	-1.41339	CLK4
202118_s_at	-0.94325	-1.11263	CPNE3
214869_x_at	-0.95567	-0.95822	GAPVD1
203899_s_at	-0.95712	-0.95581	CRCP
223925_s_at	-0.96659	-1.26551	MTPN
227741_at	-0.96705	-0.94998	PTPLB
1558093_s_at	-0.96978	-1.10479	MATR3
243552_at	-0.97826	-1.10792	MBTD1
238815_at	-0.98174	-0.66659	LRRTM1
228986_at	-0.99485	-1.43157	OSBPL8
218457_s_at	-0.99542	-0.90331	DNMT3A
1557128_at	-1.00174	-0.75351	FAM111B
221986_s_at	-1.01098	-1.33873	KLHL24
219387_at	-1.01737	-1.37569	CCDC88A
235722_at	-1.02005	-1.60816	SYNJ2BP
211947_s_at	-1.03594	-1.43942	PRRC2C
1557227_s_at	-1.04962	-2.18135	TPR
212468_at	-1.06265	-1.43139	SPAG9
210544_s_at	-1.0783	-1.06058	ALDH3A2
212384_at	-1.08681	-1.456	DDX39B
229346_at	-1.09302	-1.15171	NES
235653_s_at	-1.11473	-1.045	THAP6
217620_s_at	-1.11767	-1.39267	PIK3CB
214374_s_at	-1.15931	-2.0827	PPFIBP1
236957_at	-1.16897	-1.66782	CDCA2
224568_x_at	-1.17995	-1.03892	MALAT1
212650_at	-1.18529	-1.44017	EHBP1
212720_at	-1.18643	-1.57027	PAPOLA
1553106_at	-1.19821	-2.01813	C5orf24
238013_at	-1.20596	-1.82384	PLEKHA2
212105_s_at	-1.21259	-1.52794	DHX9
1557129_a_at	-1.25085	-2.22678	FAM111B
201708_s_at	-1.27311	-1.13997	NIPSNAP1
1565867_a_at	-1.31482	-1.21865	ZC3H11A
1558378_a_at	-1.32556	-1.50186	AHNAK2

|			
233819_s_at	-1.3652	-2.41524	LTN1
227454_at	-1.36629	-0.65263	TAOK1
211081_s_at	-1.39046	-1.82853	MAP4K5
209344_at	-1.40596	-2.00066	TPM4
207754_at	-1.42327	-1.34497	RASSF8
235645_at	-1.42847	-2.06794	ESCO1
205018_s_at	-1.44471	-2.06373	MBNL2
229399_at	-1.45396	-2.07194	CCDC186
233827_s_at	-1.45407	-2.15614	SUPT16H
1555436_a_at	-1.46473	-1.43647	AFF4
241683_at	-1.47526	-1.82988	HECTD1
228919_at	-1.48149	-0.98284	
212107_s_at	-1.48337	-1.5442	DHX9
1555559_s_at	-1.51004	-0.95708	USP25
235852_at	-1.56164	-1.51306	STON2
214786_at	-1.56338	-1.34048	MAP3K1
208297_s_at	-1.5659	-1.64766	EVI5
230180_at	-1.60518	-1.30448	DDX17
1554029_a_at	-1.61076	-1.80102	TTC37
1553122_s_at	-1.62838	-2.6051	RBAK
221220_s_at	-1.68394	-2.28557	SCYL2
242918_at	-1.73237	-1.17096	NASP
235588_at	-1.77313	-1.98522	ESCO2
1560017_at	-2.03177	-2.71891	TMTC3
217878_s_at	-2.13803	-2.39131	CDC27
235216_at	-2.22044	-2.60938	ESCO1
213286_at	-2.35232	-2.31648	ZFR
33148_at	-2.48151	-2.79576	ZFR

Supplementary Table 3. List of consensus upstream regulators that are computationally predicted to be activated or inhibited after paclitaxel treatment in KURAMOCHI and OVSAHO cells.

| KURAMOCHI Upstream Regulators	Activation z-score	p-value of overlap	OVSAHO Upstream Regulators	Activation z-score	p-value of overlap
bicuculline	2.748	3.42E-03	bicuculline	-2	1.00E+00
camptothecin	3.571	2.94E-09	camptothecin	2.028	2.92E-04
CD44	2.462	2.68E-05	CD44	-2.727	1.00E+00
CSF2	4.105	4.46E-08	CSF2	-2.385	4.06E-01
ESR1	-2.831	1.22E-17	ESR1	-4.16	1.68E-12
etoposide	2.311	3.18E-05	etoposide	-2.082	2.65E-01
fenofibrate	-2.837	1.42E-02	fenofibrate	-3.712	2.64E-01
gentamicin	3.104	1.47E-03	gentamicin	-2.208	1.00E+00
HGF	4.984	3.47E-15	HGF	-3.933	5.15E-03
hyaluronic acid	2.262	8.35E-08	hyaluronic acid	-2.196	8.67E-02
IL1	5.034	1.78E-06	IL1	2.54	1.61E-01
IL18	3.757	9.87E-04	IL18	2.393	1.00E+00
KLF3	2.09	3.74E-01	KLF3	2.813	1.15E-01
Map3k7	2.98	3.74E-03	Map3k7	2.111	3.01E-02
NUPR1	3.81	3.01E-04	NUPR1	2.25	7.47E-02
Pdgf (complex)	3.469	1.48E-04	Pdgf (complex)	-2.033	1.10E-01
PP2/AG1879	-3.211	1.26E-04	PP2/AG1879	-2.045	1.70E-01
TLR9	2.855	1.82E-03	TLR9	2.056	4.13E-01
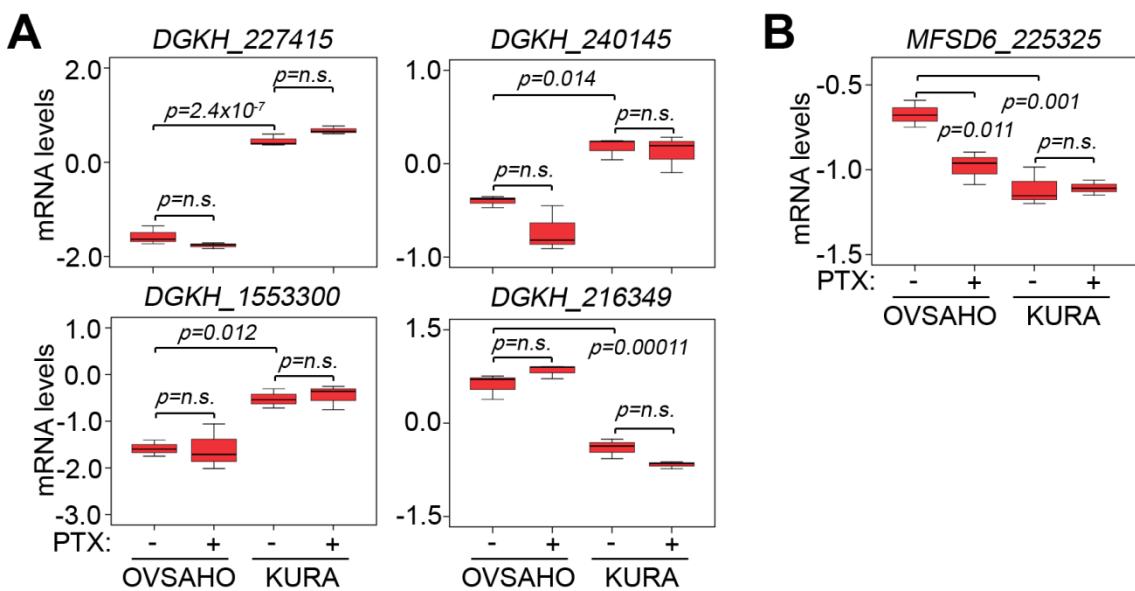
Supplementary Figure 1. Transcriptional profiling of *DGKH* and *MFSD6* with other probe identifiers in microarray analysis against OVSAHO and KURAMOCHI cells post-treatment without or with paclitaxel. (A) *DGKH* mRNA levels detected by different probes 227145, 240145, 1553300 and 216349 in microarray dataset (GSE58032) against OVSAHO and KURAMOCHI cells post-treatment without or with paclitaxel at the concentration of 10 x IC_{50} for 24 hours. (B) *MFSD6* mRNA levels detected by probe 225325 in the same condition as above. Data from three independent experiments were shown in median ± SD. The statistical differences were analyzed by One-way ANOVA using Turkey's test.
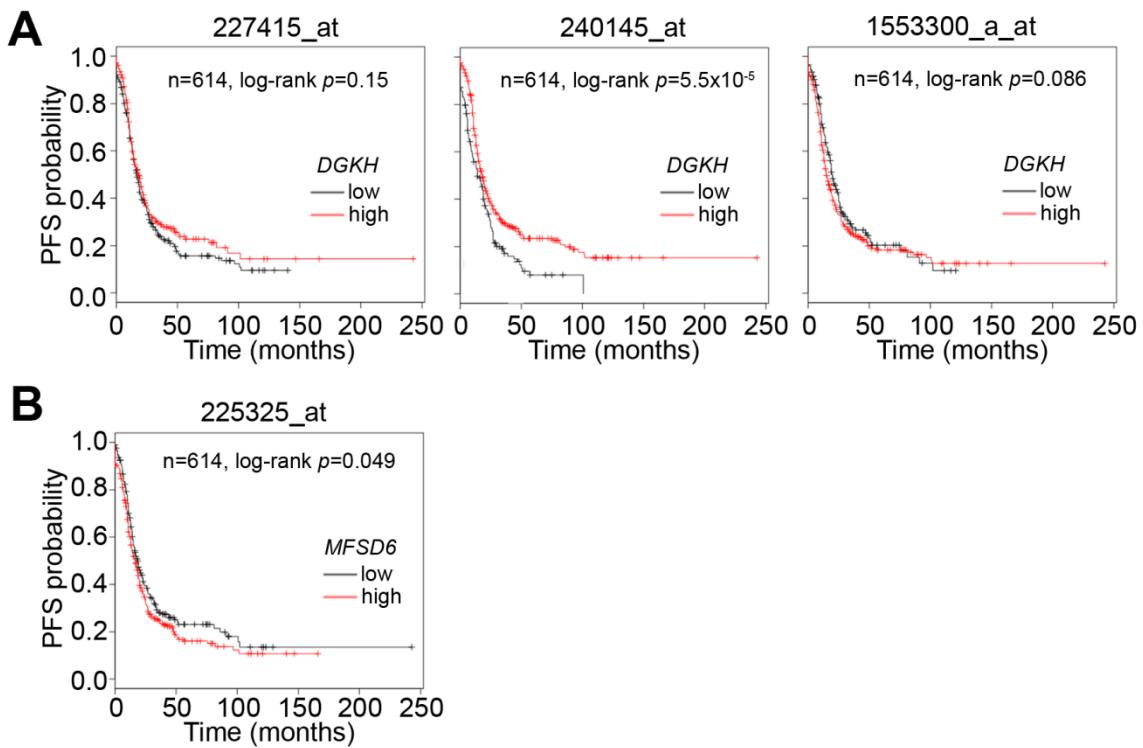
Supplementary Figure 2. Prognostic significance of different *DGKH* and *MFSD6* probes in K-M Plotter database against ovarian cancer patients. (A and B) Prognostic estimation of *DGKH* probes 227145, 240145 and 1553300 (A) and *MFSD6* probe 225325 (B) towards the survival rates of breast cancer patients under the condition of progression-free survival (RFS) probability by using K-M Plotter database.
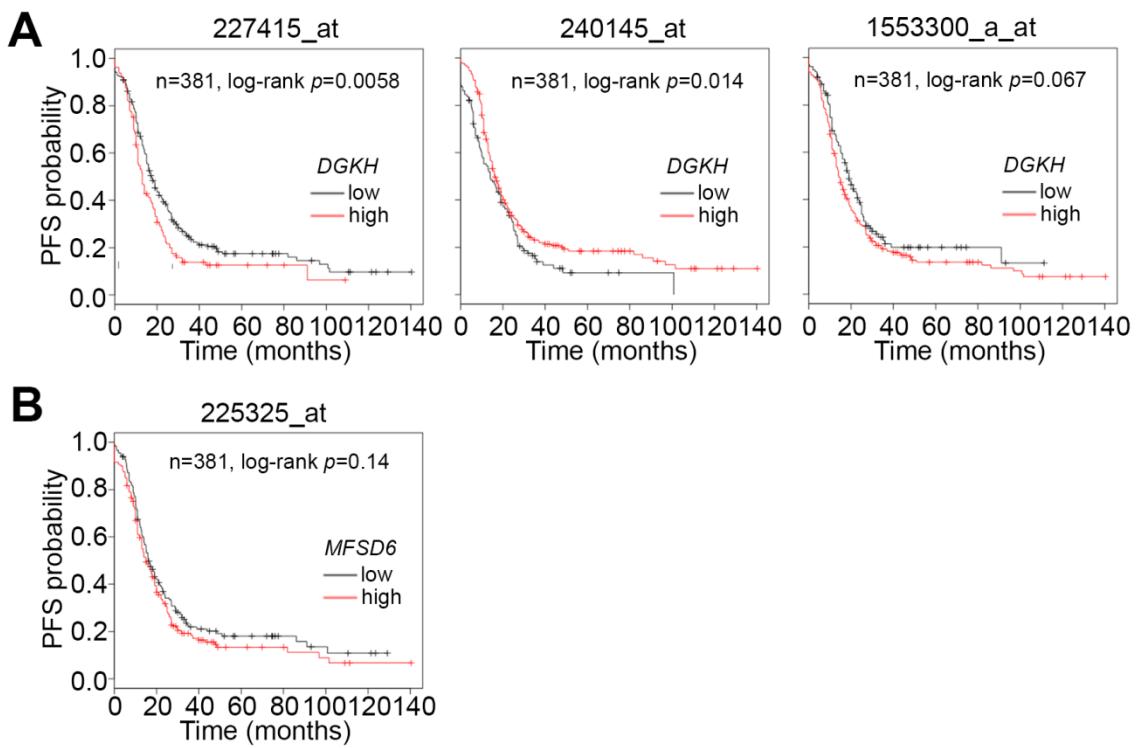
Supplementary Figure 3. Prognostic significance of different *DGKH* and *MFSD6* probes in K-M Plotter database against ovarian cancer patients who received post-operative taxol-based chemotherapy. (A and B) Prognostic estimation of *DGKH* probes 227145, 240145 and 1553300 (A) and *MFSD6* probe 225325 (B) towards the survival rates of breast cancer patients with taxol treatment under the condition of progression-free survival (RFS) probability by using K-M Plotter database.
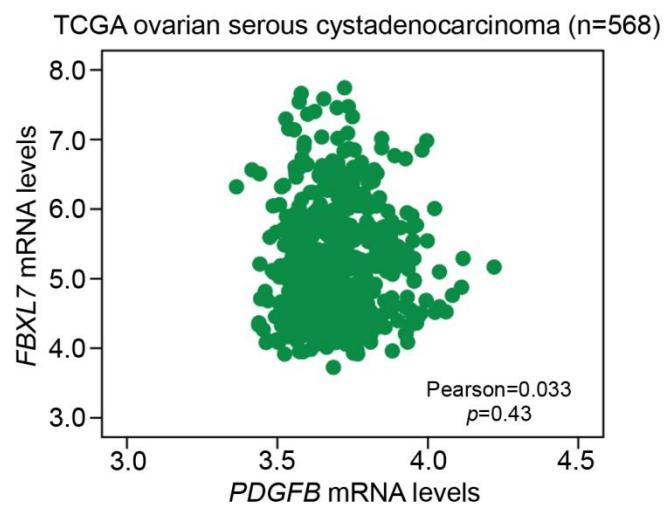
Supplementary Figure 4. Correlation between *FBXL7* and *PDGFB* mRNA levels in tissues derived from patients with ovarian serous cystadenocarcinoma using TCGA database. The statistical significance of correlations was analyzed by using Pearson's test.