

Supporting Information

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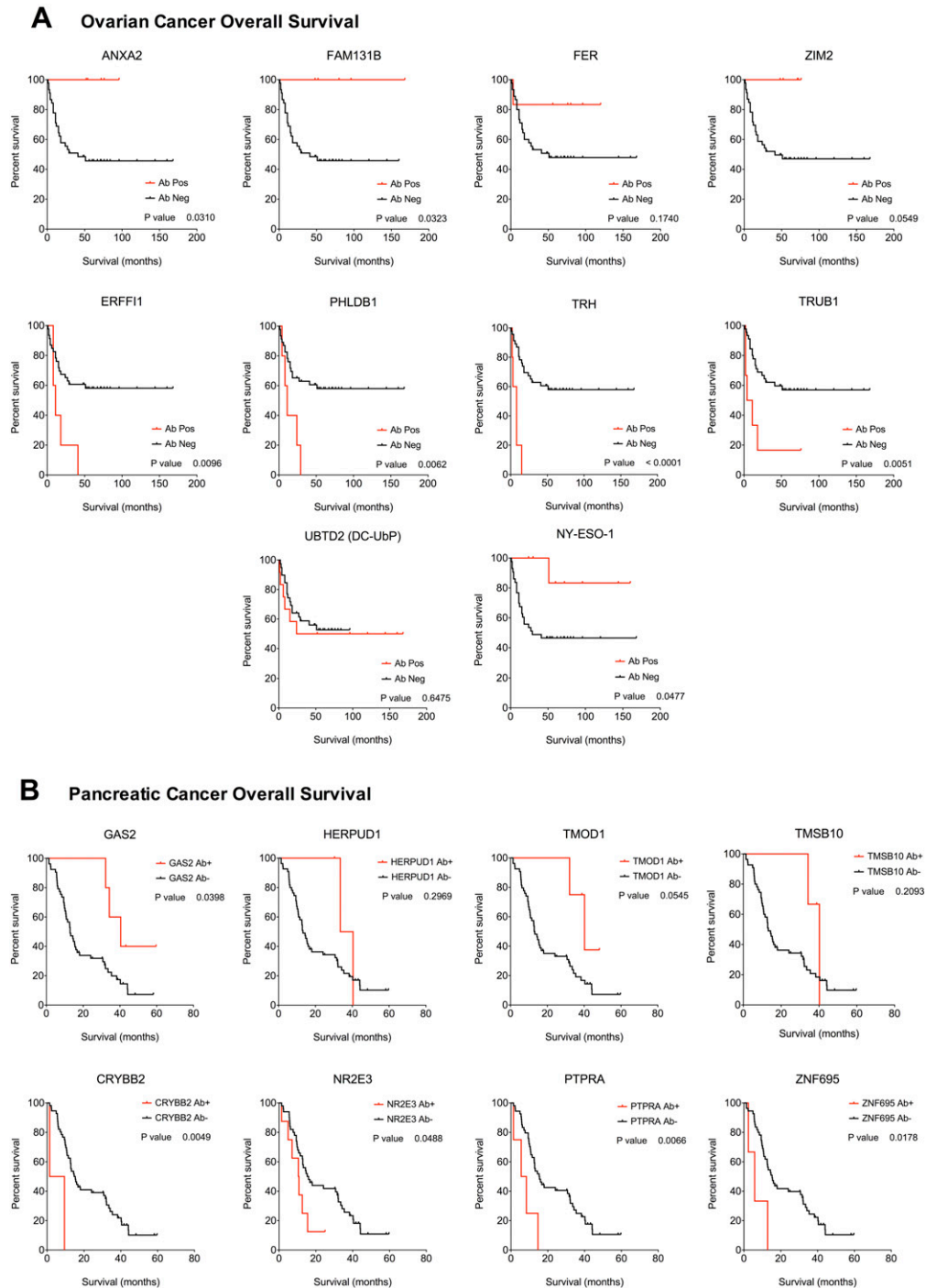


Fig. S1. Kaplan-Meier analyses of overall survival of cancer patients according to the presence of antibody response to a set of antigens. Detection of antibody response to antigens listed above each graph was measured in ovarian (A) and pancreatic (B) cancer patients. Associations of autoantibody responses with clinical outcome were assessed by comparing differences between curves with the log-rank method and judged significant if $P < 0.05$. The accession numbers of genes coding for these antigens are listed in Tables S1 and Tables S2.

Table S1. Complete list of top 202 antigens immunogenic in ovarian cancer compared to healthy donor sera

Locus	Symbol	Frequency in healthy, %	Frequency in ovarian, %	Intensity* healthy	Intensity* ovarian	Overall score [†]
BC033010.1	ACRBP	2	6	1.06	1.66	5.0
NM_001626.2	AKT2	2	6	1.74	10.32	10.5
BC035969.1	ALB	2	6	1.26	1.86	5.2
NM_018466.2	ALG13	2	8	1.85	2.31	8.1
NM_006401.1	ANP32B	4	10	1.74	2.44	8.7
BC023990.1	ANXA2	2	12	2.72	1.52	10.9
NM_001641.2	APEX1	4	16	1.99	2.41	16.3
BC008145.1	APEX1	2	8	2.21	1.88	7.2
BC060828.1	ARID3A	2	8	2.45	2.23	7.7
NM_004311.1	ARL3	4	12	1.23	2.04	10.9
NM_018184.1	ARL8B	2	6	1.16	2.69	6.2
NM_052936.2	ATG4A	0	4	1.00	5.87	7.1
NM_032352.1	BRMS1L	2	14	1.95	1.73	14.1
NM_001007246.1	BRWD1	2	10	7.05	2.81	10.2
BC050645.1	BYSL	2	10	1.98	3.52	12.5
NM_017907.1	C11orf59	2	10	1.57	2.09	10.3
BC016854.1	C11orf67	4	10	1.60	5.26	12.6
NM_017822.2	C12orf41	4	12	5.68	4.16	12.2
NM_033201.1	C16orf45	4	14	7.89	6.02	17.5
BC022189.2	C17orf47	0	10	1.00	2.00	12.4
NM_152266.1	C19orf40	0	10	1.00	2.44	13.2
BC052573.1	C19orf46	0	10	1.00	2.12	12.6
NM_019099.1	C1orf183	0	6	1.00	1.74	7.1
NM_022104.1	C20orf67	0	10	1.00	6.42	18.2
BC009485.1	C4orf16	0	4	1.00	4.33	6.4
NM_145063.1	C6orf130	0	14	1.00	1.56	15.9
BC022043.1	C7orf36	4	12	1.57	3.08	12.7
BC009074.1	C8orf70	0	6	1.00	2.69	8.2
NM_032596.3	C9orf24	0	4	1.00	4.68	6.6
NM_012117.1	CBX5	2	12	1.34	2.68	14.3
NM_144982.1	CCDC131	2	8	1.35	1.48	6.9
NM_016360.1	CCDC44	4	16	1.53	3.51	19.5
NM_000626.1	CD79B	0	6	1.00	1.86	7.2
NM_003607.1	CDC42BPA	0	6	1.00	1.97	7.4
NM_006779.2	CDC42EP2	4	10	2.18	2.48	8.4
BC010451.1	CDC42EP4	2	12	1.27	1.92	12.6
NM_145810.1	CDCA7	2	8	1.42	4.96	11.3
BC064145.1	CDKAL1	2	8	1.11	10.99	15.5
NM_018413.2	CHST11	0	4	1.00	2.67	5.4
BC070203.1	COL4A6	0	4	1.00	3.76	6.1
NM_007263.3	COPE	2	10	1.51	1.99	10.2
BC015634.1	COQ3	4	12	3.37	3.41	12.0
NM_006067.3	COX4NB	0	4	1.00	2.85	5.6
NM_024695.1	CPLX3	4	8	1.47	2.56	6.4
NM_130898.1	CREB3L4	2	8	1.69	1.96	7.6
NM_016823.2	CRK	2	10	1.91	1.47	8.8
NM_177559.2	CSNK2A1	6	12	2.03	1.93	7.5
BC011668.1	CSNK2A1	4	10	5.25	1.79	5.3
NM_004078.1	CSRP1	0	6	1.00	2.54	8.0
NM_018959.1	DAZAP1	2	8	2.10	2.13	7.7
BC001286.1	DCTD	4	12	1.58	1.69	9.6
NM_001930.2	DHPS	2	10	1.42	3.62	12.9
NM_138930.2	DIABLO	2	10	1.16	1.75	9.8
BC069363.1	DLX6	0	6	1.00	2.76	8.2
BC033159.1	DNAJC8	0	4	1.00	2.66	5.4
NM_006442.2	DRAP1	0	14	1.00	2.07	17.5
NM_003746.1	DYNLL1	0	4	1.00	3.19	5.8
BC013648.1	EFHD2	0	6	1.00	1.71	7.0
NM_003754.1	EIF3S5	4	12	3.47	1.65	8.2
NM_005232.1	EPHA1	2	12	1.01	3.01	15.1
NM_004441.2	EPHB1	0	8	1.00	2.55	10.7
NM_018948.2	ERRFI1	0	10	1.00	3.43	14.8
BC050543.1	FAM131B	4	12	2.78	1.79	9.0

Table S1. Cont.

Locus	Symbol	Frequency in healthy, %	Frequency in ovarian, %	Intensity* healthy	Intensity* ovarian	Overall score [†]
NM_152789.1	FAM133B	2	6	1.04	4.53	7.8
NM_152421.2	FAM69B	0	6	1.00	2.09	7.5
NM_018145.1	FAM82C	2	10	2.17	1.79	9.5
NM_005246.1	FER	0	12	1.00	2.77	16.5
NM_015850.2	FGFR1	4	12	3.20	7.16	17.1
BC000084.1	FLJ10357	2	8	3.02	1.49	6.2
NM_144595.1	FLJ30046	0	4	1.00	3.71	6.1
BC021906.1	FMNL1	2	6	1.05	6.05	8.8
NM_144769.1	FOXI1	2	8	1.19	3.87	10.3
BC009642.1	FXYD5	0	10	1.00	1.76	11.8
BC008668.1	GAK	6	12	1.34	3.25	11.2
NM_177553.1	GAS2	0	4	1.00	3.70	6.1
BC001152.1	GAS7	2	10	1.11	2.30	11.0
NM_201432.1	GAS7	2	12	1.01	2.15	13.3
NM_178044.1	GIYD2	0	4	1.00	5.26	6.8
BC015848.1	GLOD4	0	8	1.00	1.42	8.8
NM_033003.1	GTF2I	0	6	1.00	3.14	8.6
NM_138612.1	HAS3	2	6	1.87	2.20	5.3
BC021278.1	HKDC1	0	8	1.00	2.67	10.9
BC008959.1	HM13	0	8	1.00	6.89	14.9
NM_002128.2	HMGB1	4	10	2.29	2.15	7.7
BC015358.1	HTATIP2	2	6	0.78	3.46	7.2
NM_033261.2	ID12	2	6	1.11	2.01	5.5
NM_021803.1	IL21	0	6	1.00	2.52	8.0
NM_173192.1	KCNIP2	4	10	1.65	1.61	7.0
BC025726.1	KCNK17	0	8	1.00	1.55	9.1
NM_024076.1	KCTD15	0	10	1.00	2.60	13.5
BC052802.1	KIAA0467	2	8	1.12	2.03	8.0
BC017355.1	KPNA3	6	16	1.23	2.16	14.2
BC021241.2	KRT81	2	8	1.05	1.70	7.5
BC001370.2	LIMS2	2	6	1.30	4.15	7.4
BC066353.1	LMX1A	2	8	4.03	2.48	7.6
BC062736.1	LOC503543	0	6	1.00	1.91	7.3
NM_138353.1	LOC90379	2	14	1.09	1.77	14.7
BC003408.2	MAGEA12	2	8	1.39	2.79	8.9
NM_002362.2	MAGEA4	0	4	1.00	29.91	12.2
NM_002364.1	MAGEB2	4	10	7.67	2.61	6.1
NM_032332.2	MORG1	2	8	1.02	1.69	7.4
NM_002753.2	MAPK10	0	6	1.00	2.84	8.3
NM_138993.1	MAPK11	2	10	1.25	4.42	14.1
NM_004635.2	MAPKAPK3	0	10	1.00	1.81	12.0
NM_003668.2	MAPKAPK5	2	10	14.49	3.70	10.6
NM_003668.2	MAPKAPK5	0	8	1.00	3.14	11.5
NM_032601.2	MCEE	4	10	1.11	2.56	9.5
BC009398.1	MCM7	0	6	1.00	1.52	6.8
BC006005.1	MDS032	2	8	1.34	1.81	7.5
NM_006343.1	MERTK	2	10	1.11	3.06	12.3
BC028039.1	MGC39900	4	12	2.05	1.85	9.6
NM_001004306.1	MGC87631	2	8	1.01	2.13	8.2
NM_015246.1	MGRN1	0	6	1.00	2.33	7.8
NM_017572.1	MKNK2	2	6	1.25	2.70	6.2
NM_198204.1	MLX	2	12	1.75	2.15	12.9
NM_020236.2	MRPL1	2	6	2.11	2.46	5.5
BC052601.1	MRPL10	0	6	1.00	2.42	7.9
NM_006428.3	MRPL28	2	12	3.01	1.94	11.9
BC030521.2	MRPS27	0	6	1.00	3.28	8.7
NM_007067.3	MYST2	0	14	1.00	3.08	20.0
NM_005000.2	NDUFA5	2	10	2.98	3.83	12.6
NM_002505.3	NFYA	2	10	1.21	2.80	11.8
NM_006993.1	NPM3	4	16	1.44	2.65	17.5
NM_052935.2	NT5C3L	0	4	1.00	3.30	5.8
BC010176.1	NY-SAR-48	0	8	1.00	2.70	10.9

Table S1. Cont.

Locus	Symbol	Frequency in healthy, %	Frequency in ovarian, %	Intensity* healthy	Intensity* ovarian	Overall score [†]
BC009779.1	ODF2L	0	4	1.00	2.30	5.2
NM_012373.1	OR3A3	4	10	2.33	1.73	6.8
NM_014562.2	OTX1	0	4	1.00	2.75	5.5
NM_001014831.1	PAK4	2	10	1.47	1.57	9.3
NM_148978.1	PANK1	2	8	1.32	4.94	11.3
BC039742.1	PCBP1	4	8	1.07	1.64	5.4
NM_002591.2	PCK1	4	10	1.32	3.63	10.9
NM_030948.1	PHACTR1	2	8	1.82	2.95	9.0
BC013031.1	PHLDB1	2	10	1.20	1.79	9.9
BC030815.1	PIK3R1	0	6	1.00	1.67	7.0
NM_001722.2	POLR3D	0	6	1.00	2.12	7.6
NM_004227.3	PSCD3	0	10	1.00	1.48	11.2
NM_170750.1	PSMD10	2	10	1.54	1.35	8.7
BC001772.1	QARS	2	8	1.53	2.02	7.7
NM_030981.1	RAB1B	4	8	1.22	2.13	6.1
BC002510.2	RAB6B	0	4	1.00	4.11	6.3
NM_005053.2	RAD23A	4	14	1.42	2.66	14.8
NM_005105.2	RBM8A	6	14	1.79	1.55	9.0
BC013115.1	RBM9	0	6	1.00	2.08	7.5
NM_016606.2	REEP2	0	6	1.00	2.48	8.0
NM_006480.4	RGS14	0	6	1.00	2.39	7.9
BC043348.2	RP2	4	10	1.42	2.16	8.4
NM_002946.2	RPA2	2	10	1.02	3.68	13.2
NM_015414.2	RPL36	2	8	4.37	1.77	6.4
BC001697.1	RPS15A	2	8	1.02	2.25	8.4
BC014959.1	RYBP	0	6	1.00	2.48	8.0
NM_005620.1	S100A11	0	10	1.00	1.67	11.6
NM_005621.1	S100A12	0	8	1.00	2.05	10.0
BC024245.2	SALL2	0	8	1.00	1.85	9.6
BC041638.1	SART3	0	8	1.00	4.48	12.9
NM_005698.2	SCAMP3	2	8	1.31	1.77	7.4
NM_020423.1	SCYL3	0	8	1.00	3.11	11.4
BC000463.1	SF3B3	2	8	1.21	2.49	8.6
NM_005901.2	SMAD2	2	12	2.94	2.15	12.5
NM_005902.1	SMAD3	0	6	1.00	3.38	8.8
NM_004782.2	SNAP29	0	4	1.00	3.44	5.9
NM_015464.1	SOSTDC1	0	6	1.00	4.84	10.0
NM_021203.2	SRPRB	0	6	1.00	1.47	6.7
BC007919.2	STARD10	2	10	1.32	2.24	10.8
NM_006374.2	STK25	0	6	1.00	1.40	6.6
NM_178509.3	STXBP4	2	6	2.21	9.07	9.8
BC010537.1	SUB1	0	10	1.00	1.50	11.2
NM_006713.2	SUB1	2	8	1.22	1.55	7.1
NM_003352.4	SUMO1	2	10	1.31	4.18	13.7
BC022340.1	SUMO2	2	6	1.10	2.83	6.4
NM_153694.3	SYCP3	0	6	1.00	1.99	7.4
NM_013342.1	TFPT	0	6	1.00	1.49	6.7
NM_021809.2	TGIF2	4	10	1.62	12.63	18.4
BC029920.1	TGIF2LX	4	10	1.77	27.12	24.9
BC001852.2	THG1L	2	10	1.99	1.79	9.5
NM_138461.1	TM4SF19	2	6	1.06	2.17	5.7
NM_145041.1	TMEM106A	2	12	1.36	2.03	12.8
BC002660.1	TMOD1	0	6	1.00	3.75	9.1
BC053675.1	TMPO	4	10	2.25	5.23	12.1
NM_021103.2	TMSB10	2	10	1.08	2.67	11.7
NM_032174.2	TOMM40L	4	8	1.15	3.57	8.0
BC003596.1	TP53	0	10	1.00	4.82	16.6
BC070290.1	TRDN	2	6	1.10	3.66	7.1
NM_007117.1	TRH	0	10	1.00	1.89	12.1
NM_004240.2	TRIP10	2	10	2.17	1.91	9.7
NM_139169.2	TRUB1	2	12	1.43	2.41	13.6
NM_030935.1	TSC22D4	2	12	1.08	8.69	22.3

Table S1. Cont.

Locus	Symbol	Frequency in healthy, %	Frequency in ovarian, %	Intensity* healthy	Intensity* ovarian	Overall score [†]
NM_130465.3	TSPAN17	6	14	6.36	1.98	6.8
NM_015959.1	TXNDC14	0	4	1.00	4.70	6.6
NM_181892.1	UBE2D3	2	8	1.13	1.89	7.7
NM_003348.3	UBE2N	2	8	1.16	2.52	8.7
BC043346.2	UBL4A	2	8	1.07	13.11	16.6
NM_152277.1	UBTD2	6	24	1.82	3.93	30.2
NM_173517.3	VKORC1L1	0	4	1.00	24.50	11.4
BC001001.2	VPS8	6	12	1.78	1.87	7.7
BC023556.2	VRK3	0	6	1.00	2.50	8.0
NM_015671.2	WDR62	0	4	1.00	4.71	6.6
NM_003404.2	YWHAB	0	8	1.00	3.74	12.2
NM_017612.1	ZCCHC8	2	8	1.48	2.76	8.9
NM_015363.3	ZIM2	2	10	1.36	3.80	13.2
BC000876.1	ZNF174	2	10	1.21	1.54	9.3
BC002859.1	ZNF434	0	14	1.00	1.71	16.4

*Intensity represents the average ratio of observed reactivity over cutoff, for healthy donor and ovarian cancer sera, respectively.

[†]The score is calculated as $(\text{Freq}_{\text{ovarian}} \times \sqrt{\text{Intensity}_{\text{ovarian}}}) - (\text{Freq}_{\text{healthy}} \times \sqrt{\text{Intensity}_{\text{healthy}}})$ as described (1).

1. Gnjjatic S, et al. (2009) Seromic analysis of antibody responses in non-small cell lung cancer patients and healthy donors using conformational protein arrays. J Immunol Methods 341:50-58.

Table S2. Complete list of top 29 antigens immunogenic in pancreatic cancer compared to healthy donor sera

Locus	Symbol	Frequency in healthy, %	Frequency in ovarian, %	Intensity* healthy	Intensity* ovarian	Overall score [†]
BC021245.2	AFG3L1	0	5	1.00	1.96	6.3
BC028124.1	C17orf46	0	5	1.00	2.88	7.1
BC009485.1	C4orf16	0	5	1.00	1.83	6.1
NM_153344.1	C6orf141	0	8	1.00	1.96	10.4
NM_052958.1	C8orf34	0	7	1.00	1.48	7.6
BC030210.1	CD79B	0	5	1.00	1.75	6.0
NM_004269.2	CRSP8	0	5	1.00	1.08	5.1
NM_000496.1	CRYBB2	2	3	1.00	9.99	5.3
NM_006145.1	DNAJB1	0	5	1.00	1.97	6.3
NM_018696.1	ELAC1	0	3	1.00	4.46	5.5
BC063126.1	FAM13A1	0	5	1.00	6.58	9.4
NM_177553.1	GAS2	2	8	1.11	1.65	7.9
NM_001002018.1	HCFC1R1	0	3	1.00	3.50	5.1
BC009739.1	HERPUD1	0	5	1.00	2.77	7.0
NM_020954.1	KIAA1618	2	8	2.77	1.64	7.2
BC037982.1	LRRC49	0	7	1.00	2.78	9.4
BC032539.1	MAPK9	0	8	1.00	2.33	11.0
NM_002752.3	MAPK9	0	8	1.00	1.60	9.8
BC041421.1	NR2E3	4	13	1.94	1.55	10.7
BC010176.1	NY-SAR-48	0	5	1.00	1.65	5.9
NM_015869.2	PPARG	0	5	1.00	1.16	5.3
NM_080840.1	PTPRA	0	7	1.00	3.10	9.7
NM_004560.2	ROR2	4	12	1.25	1.68	9.8
NM_007373.2	SHOC2	4	5	1.53	7.23	5.3
NM_175840.1	SMOX	0	5	1.00	1.97	6.3
BC002660.1	TMOD1	2	7	1.10	3.83	8.5
NM_021103.2	TMSB10	0	5	1.00	2.29	6.6
NM_017886.1	ULK4	0	7	1.00	2.14	8.6
BC041082.1	ZNF695	0	5	1.00	1.18	5.3

*Intensity represents the average ratio of observed reactivity over cutoff, for healthy donor and pancreatic cancer sera, respectively.

[†]The score is calculated as $(\text{Freq}_{\text{pancreatic}} \times \sqrt[3]{\text{Intensity}_{\text{pancreatic}}}) - (\text{Freq}_{\text{healthy}} \times \sqrt[3]{\text{Intensity}_{\text{healthy}}})$ as described (1).

1. Gnjjatic S, et al. (2009) Seromic analysis of antibody responses in non-small cell lung cancer patients and healthy donors using conformational protein arrays. *J Immunol Methods* 341: 50–58.

Table S3. List of antigens previously detected by SEREX

In common with ovarian top list	In common with pancreatic top list
ALB	DNAJB1
ANXA2	NY-SAR-48
BRWD1	
CBX5	
CDC42EP2	
CDC42EP4	
CREB3L4	
EFHD2	
FER	
FXYS5	
GTF2I	
MAGEA4	
MCM7	
MKNK2	
NY-SAR-48	
POLR3D	
RPA2	
RPS15A	
TP53	

Table S4. Selection of genes coding for immunogenic proteins in ovarian cancer and described for their cancer or germ-cell specific expression and/or function

Symbol	Findings	References
ACRBP (OY- TES-1)	Found in 69% of epithelial ovarian cancers and immunogenic in 10%	<i>Int J Oncol.</i> 2006;29:903–910
AKT2	Amplified and activated in 40–70% of epithelial ovarian cancers	<i>Oncogene.</i> 2000;19:2324–2330; <i>Oncogene.</i> 2004;23,5853–5857
ANXA2 (Annexin A2)	Frequent autoantibodies in non-small cell lung cancer	<i>Proc Natl Acad Sci U S A.</i> 2001;98(17):9824–9829.
APEX1	Common somatic mutations in ovarian cancer	<i>Mutat Res.</i> 2001;432(3-4):53–59; <i>Clin Cancer Res.</i> 2000;6(2):602–609
ARL3 RP2 BRWD1	Interact with each other, GTPase-activating	<i>Hum Mol Genet.</i> 2002;11(24):3065–3074
BYSL (Bystin- like)	Normal spermiogenesis and the oocyte-embryo transition	<i>Dev Biol.</i> 2008;317(1):72–82
CBX5 (HP1 α homolog)	Human embryo implantation, up-regulated in gastric cancer	<i>Cancer Biol Ther.</i> 2008;7(8):1165; <i>J Pathol.</i> 2008;216(4):471–482
CDC42EP4	Known autoantibodies to centromeres, expressed in oocytes	<i>J Mol Med.</i> 1998;76(1):54–60; <i>BMC Genomics.</i> 2009;10:10
CREB3L4	Overexpressed in glioblastoma	<i>J Neurooncol.</i> 2008;88(3):281–291
DAZAP1, DYNLL1	Overexpressed in hepatocellular carcinoma	<i>Cancer Genet Cytogenet.</i> 2008;180(1):30–36
DIABLO	Maturation of oocytes	<i>Fertil Steril.</i> 2005;84(Suppl 2):1089–1094; <i>Mol Reprod Dev.</i> 2008;75(1):17–25
EPHA1	Poor prognosis of colorectal cancer when decreased	<i>Oncol Rep.</i> 2009;21(2):351–355
EPHB1	Overexpression in advanced ovarian cancer correlates with shortened survival	<i>BMC Cancer.</i> 2006;6:144
FER	Underexpressed in colorectal cancer	<i>Pathobiology.</i> 2008;75(5):274–280
FGFR1	Promotes prostate cancer growth	<i>Mol Cancer Res.</i> 2009;7(1):142–155
FMNL1	Promotes proliferation in bladder cancer	<i>Cancer Res.</i> 2009;69(11):4613–4620
FXYD5 (Dysadherin)	Antitumor T cells in malignancies	<i>Blood.</i> 2007;110(8):2931–2939
HMGB1	Cancer progression	<i>Cancer Lett.</i> 2007;255(2):161–169
HTATIP2	Expression associated with differential chemotherapy response in serous epithelial ovarian; known autoantibodies to this cytokine that mediates the response to infection, injury, and inflammation	<i>Neoplasia.</i> 2005;7(6):603–613; <i>Clin Exp Immunol.</i> 1997;107(1):135–140
LMX1	Progression and metastasis of prostate and gastric cancer	<i>Int J Cancer.</i> 2008;123(4):810–816; <i>Gastroenterology.</i> 2009;136(2):640–651
MAGEA12, MAGEA4, MAGEB2	Methylated in cervical cancer	<i>Int J Cancer.</i> 2008;123(1):161–167
MCM7	Cancer testis antigens, immunogenic for MAGEA4	
MYST2	Expressed in oral squamous cell carcinoma	<i>Anticancer Res.</i> 2008;28(6A):3763–3769
NDUFA5	Enhances growth of breast cancer	<i>Mol Cancer Res.</i> 2009;7(4):511–522
NPM3	Overexpressed in human cervical carcinoma cell lines	<i>Biochem Biophys Res Commun.</i> 2006;339(3):852–857
PAK4	Histone-binding protein in embryonic stem cells	<i>Dev Growth Differ.</i> 2008;50(5):307–320
PIK3R1	Amplified in pancreas ductal adenocarcinoma	<i>Proc Natl Acad Sci U S A.</i> 2008; 105(49):19372–19377
PSMD10 (Gankyrin)	Oncogene in human ovarian and colon tumors, mutated in glioblastoma	<i>Cancer Res.</i> 2001;61(20):7426–7429; <i>Nature.</i> 2008;455(7216):1061–1068
RPM8A	Overexpressed in cancer; oncoprotein and regulator of pRb and p53	<i>Cancer Cell.</i> 2005;8(1):3–4
S100A11	Predicts lymph node metastasis in cervical cancer	<i>Cancer Sci.</i> 2008;99(1):31–38
SALL2	Putative tumor suppressor gene, overexpressed in colorectal and pancreatic cancer	<i>Clin Cancer Res.</i> 2006;12(18):5417–5422
SART3	Associated with tongue cancer invasiveness	<i>BMC Cancer.</i> 2009;9:11
SMAD2	Tumor-rejection antigen	<i>Jpn J Cancer Res.</i> 2000;91(11):1177–1184
SMAD3	Regulates gonadal tumorigenesis	<i>Mol Endocrinol.</i> 2007;21(10):2472–2486
STARD10 (NY-CO-28)	Overexpressed in breast cancer and cooperates with ErbB receptors in cellular transformation	<i>Cancer Res.</i> 2004;64(10):3538–3544
SUB1	Up-regulated in metastatic breast cancer	<i>J Proteome Res.</i> 2009;8(2):583–594

Table S4. Cont.

Symbol	Findings	References
SUMO1, SUMO2	Autoantigens in primary biliary cirrhosis	<i>Hepatology</i> . 2005;41(3):609–616
SYCP3	Meiosis-specific protein (SCP-1 already known as immunogenic)	<i>Cancer Detect Prev</i> . 2007;31(4):296–302
TGIF2, TGIF2LX	Amplification and overexpression in ovarian cancer cell lines; miRNA oncogenic target genes	<i>Biochem Biophys Res Commun</i> . 2000;276(1):264–270; <i>Proc Natl Acad Sci U S A</i> . 2008;105(36):13556–61
TMB10, TMOD1	Interact - actin architecture, overexpressed in pancreatic cancer	<i>FEBS Lett</i> . 2004;557(1-3):57–63; <i>Pancreatology</i> . 2005;5(4-5):370–379
TP53 UBL4A	Tumor suppressor, immunogenic, mutated in cancer Expressed in postmeiotic germ cells	<i>Gene Expr Patterns</i> . 2007;7(1-2):131–136

Table S5. Selection of genes coding for immunogenic proteins in pancreatic cancer and previously described for their cancer-specific expression and/or function

Symbol	Remarks	References
DNAJB1 ELAC1	(Hsp40) Autoantibody in sera of lung cancer patients Candidate tumor suppressor locus (lung, prostate)	<i>Jpn J Cancer Res</i> . 2001;92(3):316–320 <i>Genomics</i> . 2001;72(2):169–179; <i>Oncogene</i> . 2006;25(41):5591–5600
KIAA1618	Fusion partner of anaplastic lymphoma kinase in large-cell lymphoma and inflammatory myofibroblastic tumor	<i>Genes Chromosomes Cancer</i> . 2002;34(4):354–362
LRRC49	Elevated in estrogen/progesterone receptor-positive primary breast tumors; silenced by promoter hypermethylation	<i>Int J Oncol</i> . 2008;33(1):25–31
NR2E3 PPARG	Autoantigen of paraneoplastic retinopathy Highly expressed in pancreatic cancer and is associated with shorter overall survival times	<i>J Neuroophthalmol</i> . 2001;21(3):168–172 <i>PPAR Res</i> . 2008;2008:326915; <i>Clin Cancer Res</i> . 2006;12(21):6444–6451
ROR2	Promotes tumor growth in renal cell carcinoma; role in metastasis of osteosarcoma	<i>Oncogene</i> . 2009;28(27):2513–2523; <i>Cancer Sci</i> . 2009;100(7):1227–1233
SMOX	Potential mechanism for inflammation-induced carcinogenesis	<i>Cancer Res</i> . 2006;66(23):11125–11130
TMOD1, TMSB10	TMOD1 and TMSB10 Interact - actin architecture, overexpressed in pancreatic cancer	<i>FEBS Lett</i> . 2004;557(1-3):57–63; <i>Pancreatology</i> . 2005;5(4-5):370–379

Table S6. Patient Information

Status	Sample number	Age	Sex	Survival	Stage	Grade	Histo type
Pancreatic cancer	45	81	F	LTS	1a	3	pdac
Pancreatic cancer	54	81	M	LTS	2b	3	pdac
Pancreatic cancer	62	71	M	LTS	2a	1	pdac
Pancreatic cancer	106	54	M	LTS	2b	2	pdac
Pancreatic cancer	121	52	F	LTS	2b	1	pdac
Pancreatic cancer	216	68	M	LTS	2b	1	pdac
Pancreatic cancer	230	56	M	LTS	2b	2	pdac
Pancreatic cancer	253	59	M	LTS	2b	2	pdac
Pancreatic cancer	259	67	M	LTS	2b	1	pdac
Pancreatic cancer	264	50	M	LTS	2b	3	pdac
Pancreatic cancer	290	60	M	LTS	2b	2	pdac
Pancreatic cancer	293	72	F	LTS	2b	3	pdac
Pancreatic cancer	349	67	F	LTS	2b	2	pdac
Pancreatic cancer	372	65	M	LTS	2b	3	pdac
Pancreatic cancer	434	71	M	LTS	2b	3	pdac
Pancreatic cancer	446	60	M	LTS	2b	3	pdac
Pancreatic cancer	451	70	M	LTS	2b	2	pdac
Pancreatic cancer	466	61	M	LTS	2b	2	pdac
Pancreatic cancer	478	63	M	LTS	2b	2	pdac
Pancreatic cancer	37	74	M	STS	2a	3	pdac
Pancreatic cancer	38	63	M	STS	2b	2	pdac
Pancreatic cancer	73	66	M	STS	2b	2	pdac
Pancreatic cancer	74	61	M	STS	2b	3	pdac
Pancreatic cancer	76	75	M	STS	2b	2	pdac
Pancreatic cancer	130	56	M	STS	2b	3	pdac
Pancreatic cancer	132	75	F	STS	2b	3	pdac
Pancreatic cancer	197	46	M	STS	2b	2	pdac
Pancreatic cancer	199	55	M	STS	2b	2	pdac
Pancreatic cancer	206	64	F	STS	2b	2	pdac
Pancreatic cancer	248	59	M	STS	2b	2	pdac
Pancreatic cancer	334	61	M	STS	2b	3	pdac
Pancreatic cancer	467	66	M	STS	2b	1	pdac
Pancreatic cancer	468	77	F	STS	2b	2	pdac
Pancreatic cancer	479	32	M	STS	2b	3	pdac
Pancreatic cancer	484	70	F	STS	2b	2	pdac
Pancreatic cancer	603	56	M	STS	2b	2	AdSq
Pancreatic cancer	729	54	F	STS	2b	2	pdac
Pancreatic cancer	755	73	M	STS	2b	2	pdac
Pancreatic cancer	63	66	F	Met	4	3	pdac
Pancreatic cancer	180	59	F	Met	4	2	pdac
Pancreatic cancer	229	58	M	Met	4	x	pdac
Pancreatic cancer	233	50	M	Met	4	3	AdSq
Pancreatic cancer	238	53	M	Met	4	x	pdac
Pancreatic cancer	245	65	M	Met	4	2	pdac
Pancreatic cancer	279	81	M	Met	4	x	pdac
Pancreatic cancer	280	31	F	Met	4	x	pdac
Pancreatic cancer	289	65	F	Met	4	x	pdac
Pancreatic cancer	353	69	M	Met	4	x	pdac
Pancreatic cancer	374	68	F	Met	4	x	pdac
Pancreatic cancer	381	46	F	Met	4	x	pdac
Pancreatic cancer	382	66	M	Met	4	x	pdac
Pancreatic cancer	507	76	M	Met	4	2	pdac
Pancreatic cancer	549	62	M	Met	4	3	pdac
Pancreatic cancer	649	66	F	Met	4	2	pdac
Pancreatic cancer	686	69	F	Met	4	2	pdac
Pancreatic cancer	747	50	F	Met	4	2	pdac
Pancreatic cancer	800	55	F	Met	4	3	pdac
Pancreatic cancer	827	63	M	Met	4	3	pdac
Pancreatic cancer	832	66	M	Met	4	2	pdac
Pancreatic cancer	838	56	M	Met	4	2	pdac
Healthy donor	Con-1	61	F				
Healthy donor	Con-7	66	M				
Healthy donor	Con-11	50	M				

Table S6. Cont.

Status	Sample number	Age	Sex	Survival	Stage	Grade	Histo type
Healthy donor	Con-12	58	M				
Healthy donor	Con-20	64	M				
Healthy donor	Con-34	87	M				
Healthy donor	Con-35	50	M				
Healthy donor	Con-36	44	M				
Healthy donor	Con-38	60	F				
Healthy donor	Con-39	78	F				
Healthy donor	Con-40	43	F				
Healthy donor	Con-41	81	M				
Healthy donor	Con-46	71	M				
Healthy donor	Con-67	50	F				
Healthy donor	Con-68	62	F				
Healthy donor	Con-75	60	F				
Healthy donor	1000017	53	M				
Healthy donor	1000018	92	M				
Healthy donor	1000040	44	M				
Healthy donor	1000058	38	M				
Healthy donor	1000059	59	M				
Healthy donor	1000135	46	F				
Healthy donor	1000186	57	F				
Healthy donor	1000242	79	M				
Healthy donor	1000245	64	M				
Healthy donor	1000258	75	F				
Healthy donor	1000260	71	F				
Healthy donor	1000279	58	F				
Healthy donor	1000281	73	M				
Healthy donor	1000303	58	M				
Healthy donor	1000308	77	F				
Healthy donor	1000310	58	M				
Healthy donor	1000320	81	F				
Healthy donor	1000325	51	M				
Healthy donor	1000331	80	F				
Healthy donor	1000333	81	F				
Healthy donor	1000340	62	F				
Healthy donor	1000341	66	F				
Healthy donor	1000376	73	F				
Healthy donor	1000387	48	F				
Healthy donor	1000389	72	M				
Healthy donor	1000392	62	M				
Healthy donor	1000394	64	F				
Healthy donor	1000398	78	M				
Healthy donor	1000405	66	M				
Healthy donor	1000424	75	F				
Healthy donor	1000451	55	M				
Healthy donor	1000466	38	M				
Healthy donor	1000510	73	F				
Healthy donor	1000651	38	F				
Healthy donor	1000712	66	M				
Healthy donor	1000713	42	F				
Healthy donor	1001170	46	F				
Ovarian cancer	SRM00033	42	F	LTS	IIIC	1	serous
Ovarian cancer	SRM00053	51	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00352	59	F	LTS	IIIC	2	serous
Ovarian cancer	SRM00355	26	F	LTS	IIIB	3	serous
Ovarian cancer	SRM00393	81	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00473	53	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00535	77	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00558	77	F	LTS	IIIC	3	mixed
Ovarian cancer	SRM00722	58	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00743	64	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00842	34	F	LTS	IIIA	1	serous
Ovarian cancer	SRM00859	58	F	LTS	IIIC	3	serous

Table S6. Cont.

Status	Sample number	Age	Sex	Survival	Stage	Grade	Histo type
Ovarian cancer	SRM00943	66	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00959	66	F	LTS	IIIC	3	serous
Ovarian cancer	SRM01005	70	F	LTS	IIIC	3	serous
Ovarian cancer	SRM01467	44	F	LTS	IV	3	serous
Ovarian cancer	SRM01489	48	F	LTS	IIIC	3	serous
Ovarian cancer	SRM01527	66	F	LTS	IIIC	3	serous
Ovarian cancer	SRM01856	74	F	LTS	IIIC	3	endometroid
Ovarian cancer	SRM01859	46	F	LTS	IIIC	3	mixed
Ovarian cancer	SRM02258	76	F	LTS	IIIC	3	serous
Ovarian cancer	SRM02504	46	F	LTS	IIIC	3	serous
Ovarian cancer	SRM02634	57	F	LTS	IIIC	3	serous
Ovarian cancer	SRM02752	41	F	LTS	IIIC	x	serous
Ovarian cancer	SRM02800	38	F	LTS	IIIC	3	NA
Ovarian cancer	SRM15024	62	F	LTS	IIIC	3	serous
Ovarian cancer	SRM00312	64	F	IntS	IIIC	3	serous
Ovarian cancer	SRM00622	77	F	IntS	IIIC	3	serous
Ovarian cancer	SRM01546	80	F	IntS	IIIC	3	serous
Ovarian cancer	SRM01798	62	F	IntS	IIIC	3	serous
Ovarian cancer	SRM02547	72	F	IntS	IIIC	3	serous
Ovarian cancer	SRM03694	79	F	IntS	IIIC	3	mixed
Ovarian cancer	SRM04750	73	F	IntS	IIIC	3	serous
Ovarian cancer	SRM00809	68	F	STS	IIIC	3	serous
Ovarian cancer	SRM00862	78	F	STS	IIIC	3	serous
Ovarian cancer	SRM01374	82	F	STS	IIIC	3	serous
Ovarian cancer	SRM01518	48	F	STS	IIIC	3	serous
Ovarian cancer	SRM02162	58	F	STS	IIIC	2	serous
Ovarian cancer	SRM02393	81	F	STS	IIIB	3	serous
Ovarian cancer	SRM02544	88	F	STS	IIIC	3	serous
Ovarian cancer	SRM02893	49	F	STS	IIIC	3	clear cell
Ovarian cancer	SRM03582	75	F	STS	IV	2	serous
Ovarian cancer	SRM04744	45	F	STS	IIIC	3	clear cell
Ovarian cancer	SRM04752	62	F	STS	IIIC	3	serous
Ovarian cancer	SRM14085	71	F	STS	IIIC	3	serous
Ovarian cancer	SRM14175	58	F	STS	IV	3	serous
Ovarian cancer	SRM14182	55	F	STS	IIIC	3	mixed
Ovarian cancer	SRM14326	66	F	STS	IIIC	2	mucinous
Ovarian cancer	SRM14667	59	F	STS	IIIC	2	serous
Ovarian cancer	SRM15261	75	F	STS	IIIC	x	serous
Ovarian cancer	SRM15555	58	F	STS	IV	3	serous

AdSq, adenosquamous carcinoma; Histo type, histological type; IntS, intermediate-term survivor; LTS, long-term survivor; Met, metastatic disease; pdac, pancreatic ductal adenocarcinoma; STS, short-term survivor; x, information not available. stage for pancreatic cancer was determined by American Joint Committee on Cancer'2002 Sixth Edition.