

**Supplementary Table S2. TFs, preferentially associated with specific co-expression paths**, that originate from deregulated gene programming during tumorigenesis. Some of these TFs are differentially expressed as well, and the co-expression path they belong to is precised in the last column.

Symbol	NCBI gene ID	Gene_Name	expression ratio BJEL/BJ	expression ratio BJELM/BJ	Co-expression path
<i>DDX58</i>	23586	DEAD (Asp-Glu-Ala-Asp) box polypeptide 58	11,19	0,57	2
<i>TRIM21</i>	6737	tripartite motif containing 21	2,48	0,56	neutral
<i>SP100</i>	6672	SP100 nuclear antigen	2,64	0,66	neutral
<i>NLRC5</i>	84166	NLR family, CARD domain containing 5	1,65	0,98	neutral
<i>SP110</i>	3431	SP110 nuclear body protein	4,47	0,63	2
<i>IRF1</i>	3659	interferon regulatory factor 1	1,83	0,95	neutral
<i>IFI16</i>	3428	interferon, gamma-inducible protein 16	1,55	0,72	neutral
<i>STAT1</i>	6772	signal transducer and activator of transcription 1, 91kDa	2,31	0,33	3
<i>STAT6</i>	6778	signal transducer and activator of transcription 6, interleukin-4 induced	0,76	0,64	neutral
<i>IRF7</i>	3665	interferon regulatory factor 7	1,94	0,80	neutral
<i>ZFP82</i>	284406	ZFP82 zinc finger protein	1,58	1,32	neutral
<i>ZNF876P</i>	642280	zinc finger protein 876, pseudogene	2,24	1,04	2
<i>RBCK1</i>	10616	RanBP-type and C3HC4-type zinc finger containing 1	1,08	0,57	neutral
<i>IRF2</i>	3660	interferon regulatory factor 2	1,54	0,53	neutral
<i>KDM5C</i>	8242	lysine (K)-specific demethylase 5C	1,10	0,98	neutral
<i>FOXH1</i>	8928	forkhead box H1	0,98	0,97	neutral
<i>ELF4</i>	2000	E74-like factor 4 (ets domain transcription factor)	1,30	0,81	neutral
<i>HCLS1</i>	3059	hematopoietic cell-specific Lyn substrate 1	1,26	1,17	neutral
<i>RUNX3</i>	864	runx-related transcription factor 3	0,98	1,20	neutral
<i>FLI1</i>	2313	Fli-1 proto-oncogene, ETS transcription factor	0,99	0,44	5
<i>TEAD4</i>	7004	TEA domain family member 4	1,43	2,41	4
<i>IRF6</i>	3664	interferon regulatory factor 6	0,81	0,85	neutral
<i>NFIA</i>	4774	nuclear factor I/A	0,84	2,55	4
<i>SATB2</i>	23314	SATB homeobox 2	0,88	0,73	neutral
<i>SMAD7</i>	4092	SMAD family member 7	0,46	0,55	6
<i>STAT2</i>	6773	signal transducer and activator of transcription 2, 113kDa	1,77	0,24	5
<i>TEAD1</i>	7003	TEA domain family member 1 (SV40 transcriptional enhancer factor)	0,78	0,61	neutral
<i>PRDM1</i>	639	PR domain containing 1, with ZNF domain	0,41	0,34	7
<i>TBX5</i>	6910	T-box 5	0,55	0,57	neutral
<i>TEAD3</i>	7005	TEA domain family member 3	0,66	0,51	neutral
<i>MYOCD</i>	93649	myocardin	0,18	0,10	7
<i>SOX7</i>	83595	SRY (sex determining region Y)-box 7	0,90	0,97	neutral
<i>HIC1</i>	3090	hypermethylated in cancer 1	0,82	0,84	neutral
<i>TBX2</i>	6909	T-box 2	0,69	0,69	neutral
<i>FOXF2</i>	2295	forkhead box F2	0,65	0,60	neutral
<i>OSR2</i>	116039	odd-skipped related transcription factor 2	0,44	0,27	7
<i>TBX3</i>	6926	T-box 3	0,70	0,78	neutral
<i>SNAI2</i>	6591	snail family zinc finger 2	0,86	0,65	neutral
<i>YAP1</i>	10413	Yes-associated protein 1	0,87	0,76	neutral
<i>LMO4</i>	8543	LIM domain only 4	0,94	0,71	neutral
<i>AFF3</i>	3899	AF4/FMR2 family, member 3	0,83	0,60	neutral
<i>GATA6</i>	2627	GATA binding protein 6	1,16	1,42	neutral
<i>TFAP2C</i>	7022	transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma)	1,15	0,26	5

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<i>TBX18</i>	9096	T-box 18	1,25	0,90	neutral
<i>TRPS1</i>	7227	trichorhinophalangeal syndrome I	0,61	0,72	neutral
<i>HOXA5</i>	3202	homeobox A5	1,33	0,99	neutral
<i>LHX9</i>	56956	LIM homeobox 9	0,85	0,25	5
<i>SMARCA1</i>	6594	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 1	1,00	0,57	neutral
<i>TSHZ3</i>	57616	teashirt zinc finger homeobox 3	0,75	0,37	5
<i>NDN</i>	4692	neccdin, melanoma antigen (MAGE) family member	0,87	0,69	neutral
<i>NR2F2</i>	7026	nuclear receptor subfamily 2, group F, member 2	1,24	1,25	neutral
<i>HOXC6</i>	3223	homeobox C6	1,38	0,74	neutral
<i>NFIB</i>	4781	nuclear factor I/B	9,92	5,52	1
<i>GLIS3</i>	169792	GLIS family zinc finger 3	0,96	1,12	neutral
<i>HOXA13</i>	3209	homeobox A13	0,61	0,69	neutral
<i>JDP2</i>	122953	Jun dimerization protein 2	0,80	0,49	neutral
<i>AEBP1</i>	165	AE binding protein 1	0,40	0,21	7
<i>KLF2</i>	10365	Kruppel-like factor 2	0,82	0,72	neutral
<i>KLF4</i>	9314	Kruppel-like factor 4 (gut)	1,12	0,90	neutral
<i>ARID5B</i>	84159	AT rich interactive domain 5B (MRF1-like)	0,68	0,35	5
<i>GLIS2</i>	84662	GLIS family zinc finger 2	0,65	0,53	neutral
<i>FOXC2</i>	2303	forkhead box C2 (MFH-1, mesenchyme forkhead 1)	0,82	0,79	neutral
<i>FOXD1</i>	2297	forkhead box D1	1,37	1,50	neutral
<i>MSX1</i>	4487	msh homeobox 1	0,85	0,87	neutral
<i>FOXC1</i>	2296	forkhead box C1	0,80	0,89	neutral
<i>TWIST1</i>	7291	twist family bHLH transcription factor 1	1,06	0,77	neutral
<i>WNT5A</i>	7474	wingless-type MMTV integration site family, member 5A	0,33	0,23	7
<i>GLI2</i>	2736	GLI family zinc finger 2	0,75	0,65	neutral
<i>CHD7</i>	55636	chromodomain helicase DNA binding protein 7	1,92	2,91	4
<i>DNMT3A</i>	1788	DNA (cytosine-5-)-methyltransferase 3 alpha	1,02	0,93	neutral
<i>JUN</i>	3725	jun proto-oncogene	1,63	1,52	neutral
<i>SCML1</i>	6322	sex comb on midleg-like 1 (Drosophila)	2,29	1,82	2
<i>E2F2</i>	1870	E2F transcription factor 2	1,44	1,04	neutral
<i>GF11B</i>	8328	growth factor independent 1B transcription repressor	0,93	0,97	neutral
<i>KLF9</i>	687	Kruppel-like factor 9	0,53	0,62	neutral
<i>TNFAIP3</i>	7128	tumor necrosis factor, alpha-induced protein 3	0,86	0,59	neutral
<i>IRF9</i>	10379	interferon regulatory factor 9	2,05	0,30	neutral
<i>ZBTB38</i>	253461	zinc finger and BTB domain containing 38	1,06	1,08	neutral
<i>SET</i>	6418	SET nuclear oncogene	1,20	1,47	neutral
<i>ZNF649</i>	65251	zinc finger protein 649	1,55	1,78	neutral
<i>TFB1M</i>	51106	transcription factor B1, mitochondrial	1,14	1,91	neutral
<i>APEX1</i>	328	APEX nuclease (multifunctional DNA repair enzyme) 1	1,14	1,39	neutral
<i>RFC1</i>	5981	replication factor C (activator 1) 1, 145kDa	1,82	1,98	neutral
<i>ZNF146</i>	7705	zinc finger protein 146	1,19	1,44	neutral
<i>DDX1</i>	1653	DEAD (Asp-Glu-Ala-Asp) box helicase 1	0,96	1,18	neutral
<i>ILF2</i>	3608	interleukin enhancer binding factor 2	1,32	1,32	neutral
<i>ZNF473</i>	25888	zinc finger protein 473	2,34	2,74	1
<i>HNRNPAB</i>	3182	heterogeneous nuclear ribonucleoprotein A/B	1,31	1,67	neutral
<i>RUVBL2</i>	10856	RuvB-like AAA ATPase 2	1,52	2,25	4

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<i>ZNF114</i>	163071	zinc finger protein 114	1,52	1,13	neutral
<i>TET1</i>	80312	tet methylcytosine dioxygenase 1	0,80	1,02	neutral
<i>ZIK1</i>	284307	zinc finger protein interacting with K protein 1	2,48	1,31	2
<i>HMGB2</i>	3148	high mobility group box 2	2,10	2,24	neutral
<i>PURA</i>	5813	purine-rich element binding protein A	0,92	0,87	neutral
<i>ZNF641</i>	121274	zinc finger protein 641	0,74	0,42	neutral
<i>ZNF93</i>	81931	zinc finger protein 93	4,45	2,34	1
<i>BRIP1</i>	83990	BRCA1 interacting protein C-terminal helicase 1	2,71	2,68	neutral
<i>TOP2A</i>	7153	topoisomerase (DNA) II alpha 170kDa	1,78	1,88	neutral
<i>E2F1</i>	1869	E2F transcription factor 1	1,92	1,80	neutral
<i>FOXM1</i>	2305	forkhead box M1	1,62	1,64	neutral
<i>SMARCC1</i>	6599	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily c, member 1	1,23	1,64	neutral
<i>BLM</i>	641	Bloom syndrome, RecQ helicase-like	3,50	6,36	1
<i>BRCA1</i>	672	breast cancer 1, early onset	3,57	4,95	1
<i>ZNF85</i>	7639	zinc finger protein 85	2,40	1,58	2
<i>ORC1</i>	4998	origin recognition complex, subunit 1	3,83	4,44	neutral
<i>PCNA</i>	5111	proliferating cell nuclear antigen	1,69	1,96	neutral
<i>WHSC1</i>	7468	Wolf-Hirschhorn syndrome candidate 1	1,76	1,78	neutral
<i>UHRF1</i>	29128	ubiquitin-like with PHD and ring finger domains 1	1,98	2,78	4
<i>TMPO</i>	7112	thymopoietin	2,23	2,44	neutral
<i>ZNF215</i>	7762	zinc finger protein 215	1,46	1,55	neutral
<i>MYBL2</i>	4605	v-myb avian myeloblastosis viral oncogene homolog-like 2	2,94	3,28	neutral
<i>ZNF367</i>	195828	zinc finger protein 367	2,27	1,71	neutral
<i>BRCA2</i>	675	breast cancer 2, early onset	3,40	4,19	1
<i>PCGF6</i>	84108	polycomb group ring finger 6	1,69	2,00	neutral
<i>MCM8</i>	84515	minichromosome maintenance complex component 8	2,31	2,97	neutral
<i>TFDP1</i>	7027	transcription factor Dp-1	1,35	1,70	neutral
<i>DEK</i>	7913	DEK oncogene	1,63	1,56	neutral
<i>EZH2</i>	2146	enhancer of zeste homolog 2 (Drosophila)	2,13	2,08	neutral
<i>HELLS</i>	3070	helicase, lymphoid-specific	2,81	4,63	1
<i>CDT1</i>	81620	chromatin licensing and DNA replication factor 1	2,40	2,66	1
<i>POLA1</i>	5422	polymerase (DNA directed), alpha 1, catalytic subunit	2,47	3,24	1
<i>SAP30</i>	8819	Sin3A-associated protein, 30kDa	1,01	0,81	neutral
<i>CRY2</i>	1408	cryptochrome circadian clock 2	0,93	0,89	neutral
<i>ZBTB20</i>	26137	zinc finger and BTB domain containing 20	0,54	0,35	5
<i>DNMT3B</i>	1789	DNA (cytosine-5-)-methyltransferase 3 beta	1,21	1,32	neutral
<i>HMGA2</i>	8091	high mobility group AT-hook 2	0,71	0,71	neutral
<i>ATXN1</i>	6310	ataxin 1	0,55	0,37	5
<i>HMGA1</i>	3159	high mobility group AT-hook 1	0,90	1,58	neutral
<i>HDAC2</i>	3066	histone deacetylase 2	1,23	1,27	neutral
<i>TRIM24</i>	8805	tripartite motif containing 24	1,16	1,43	neutral
<i>TADA2B</i>	93624	transcriptional adaptor 2B	0,96	0,77	neutral
<i>CREBRF</i>	153222	CREB3 regulatory factor	0,61	0,31	5
<i>SMARCAD1</i>	56916	SWI/SNF-related, matrix-associated actin-dependent regulator of chromatin, subfamily a, containing DEAD/H box 1	1,23	1,47	neutral

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<i>NONO</i>	4841	non-POU domain containing, octamer-binding	1,23	1,33	neutral
<i>TTF2</i>	8458	transcription termination factor, RNA polymerase II	1,86	2,27	neutral
<i>SSRP1</i>	6749	structure specific recognition protein 1	1,73	2,65	4
<i>MYC</i>	4609	v-myc avian myelocytomatosis viral oncogene homolog	1,55	0,82	4
<i>MTERF3</i>	51001	Mitochondrial Transcription Termination Factor 3	1,85	2,26	4
<i>ZBTB9</i>	221504	zinc finger and BTB domain containing 9	1,39	1,55	neutral
<i>TAF9</i>	6880	TAF9 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 32kDa	1,33	1,58	neutral
<i>DHX33</i>	56919	DEAH (Asp-Glu-Ala-His) box polypeptide 33	1,70	3,97	4
<i>NOLC1</i>	9221	nucleolar and coiled-body phosphoprotein 1	1,98	3,76	neutral