



Figure S2

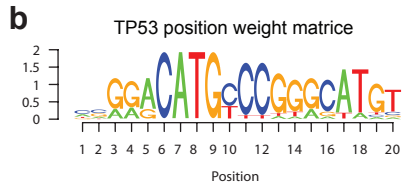
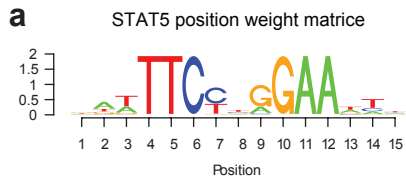


Figure S3

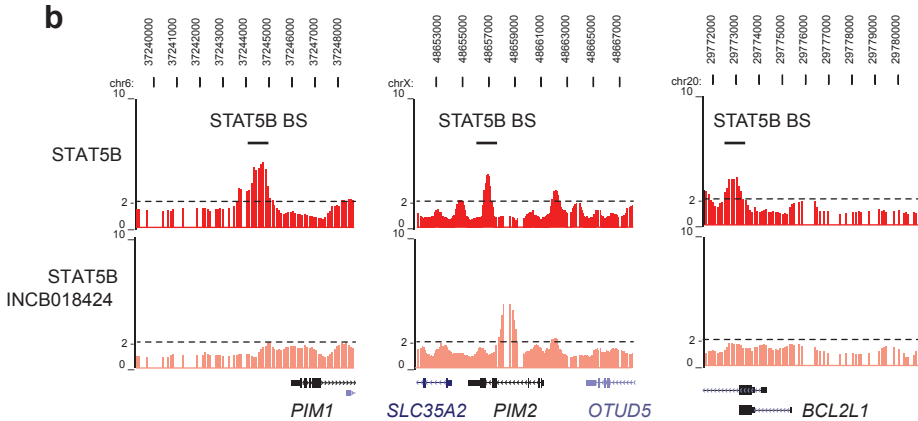
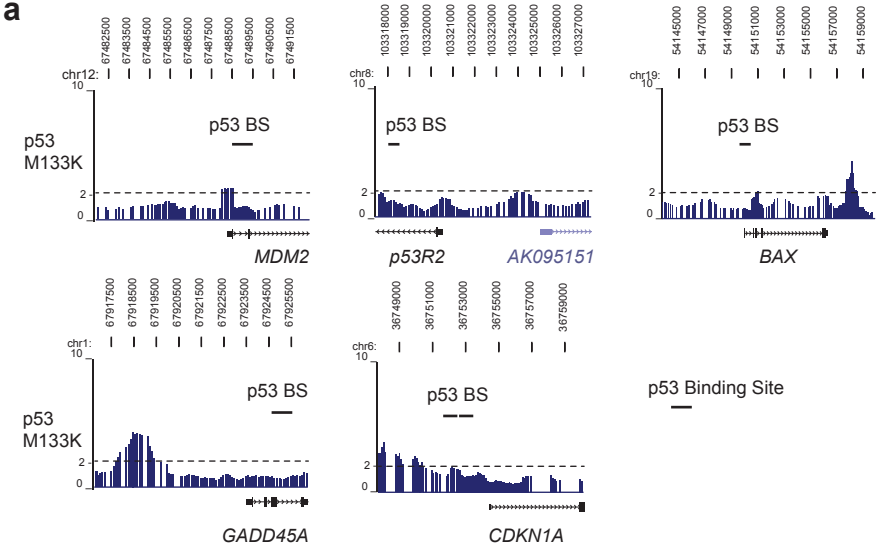
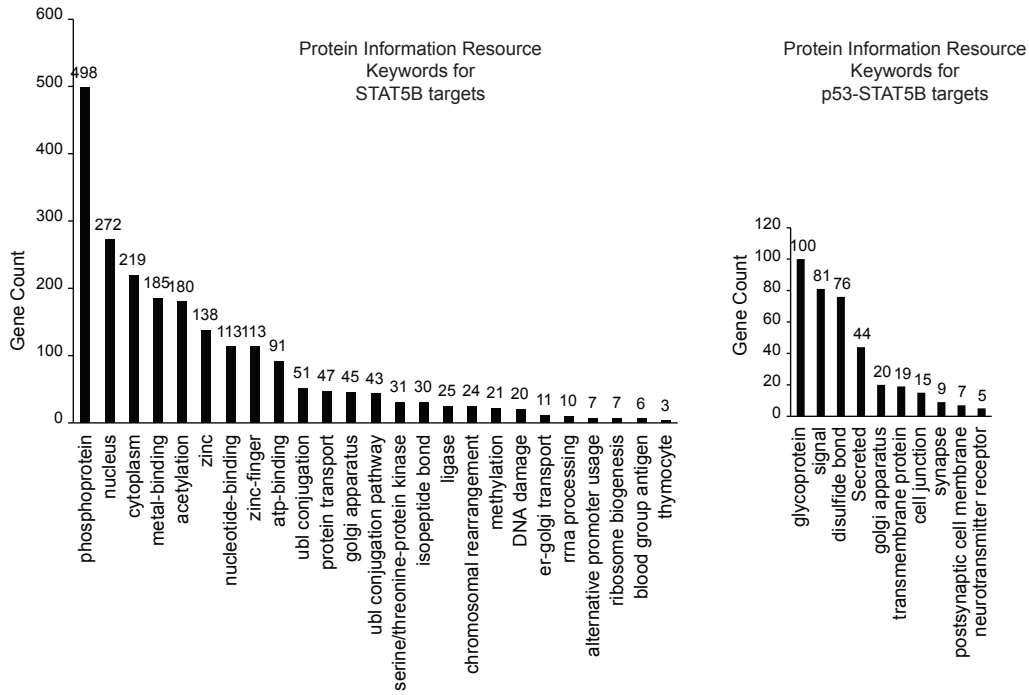


Figure S4

**a**



**b**

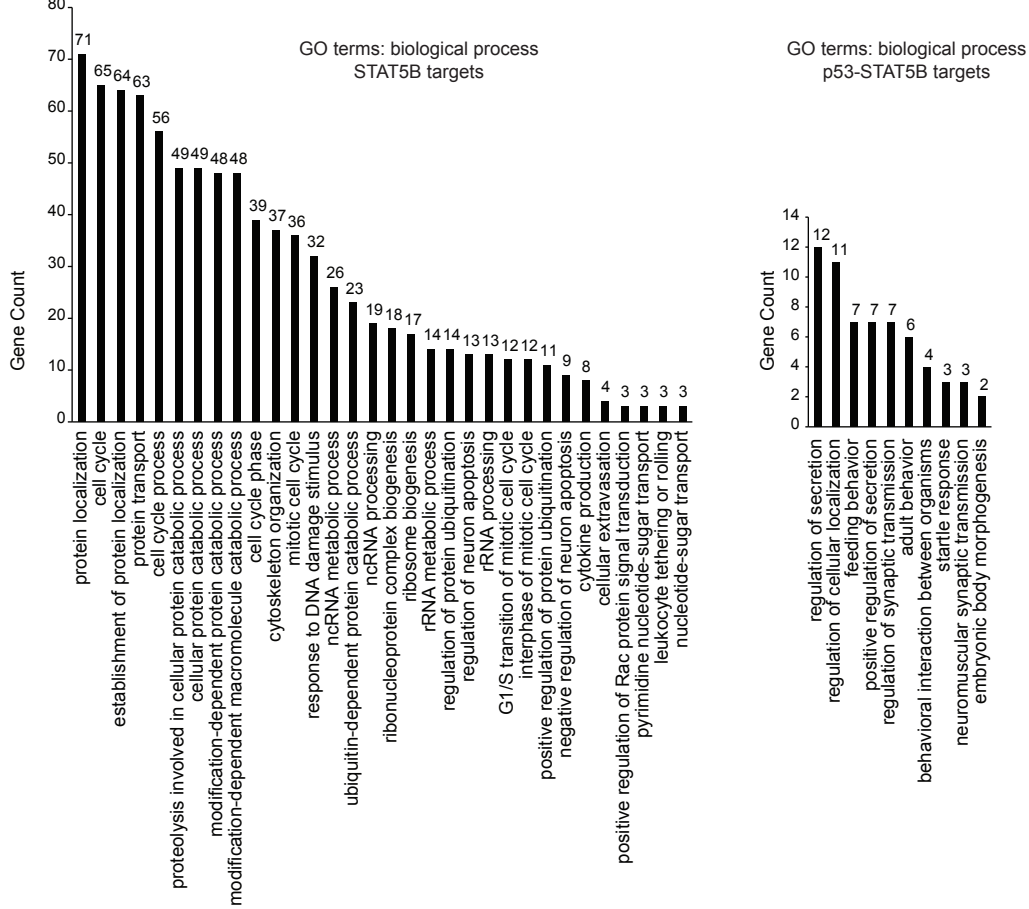


Table S1

name	sequence
Del-388s	gccgcttcctcctacgtcttcttcctctag
Del-388a	ctagaggaagaagacgtaggaggaagcggc
Del-345s	aagtctccacatctccctcttcctcctttgcaag
Del-345a	cttgcaaaggaggaagagggagatgtggagactt
Del-290s	gtctcctcctcttcctaataatgcaatgccctcag
Del-290a	ctgagggcattgcattaggaagaggaggagac
Del-186s	ggcggcttcgcgacgccttcccat
Del-186a	atgggaaggcgtcgcgaagccgcc
Del-176s	cgcgggcacacgccataccttacatgga
Del-176a	tccatgtaaggtatggcgtgtgcccgcg
Del-169s	gcacacgccttcccatcatggacaaatgcgtg
Del-169a	cacgcatttgtccatgatgggaaggcgtgtgc
Del-121s	gaattcaggccccagcctccagcgc
Del-121a	gcgctggaggctgggggcctgaattc
Del-77s	cgggagaccaagggggtggggacg
Del-77a	cgtccccacccccttggctctccc
Del-57s	ggtggggacggtgggaggggaaagg
Del-57a	cctttccccctcccaccgtccccacc
Del-32s	gggaaaggcaccagccgctccagc
Del-32a	gctggagcggctggtgcctttccc
Del+28s	ggttcgttcccggcgcgagctttccc
Del+28a	gctacttatccagctcgcgcgggaccc
Del+42s	gggtcccgcgcgagctggataagtagc
Del+42a	gctacttatccagctcgcgcgggaccc
Del+48s	gcgcgagctttcccagcttttagcgatcgg
Del+48a	ccgatcgctaaagctcgggaaagctcgcgc
Del+96s	gggcgctgcaaggtaactgcacggc
Del+96a	gccgtgcagttaccttgcagcggcc
del+188bs	gtggggcgcggggcctttactatccggggatggggacaatgggag
del+188ba	ctcccattgtccccatccccggatagtaaaggccccgcgccccac
Del+220s	ggagggggagtggcacctcctcct
Del+220a	aggaggaggtgccactccccctcc

Table S2

Accession	Start	End	Strand	Gene	Gene2
chr1	11161942	11162014	633		CHA
chr1	11151942	11152014	777		CHA
chr1	14954520	14954580	577		ZNF687 PK8K
chr1	20083028	20083054	577		PF11828 SVT2
chr1	21311240	21311252	1953		0.556
chr1	22756540	22756540	2293		EPH4B
chr1	24685512	24685588	578		OR2L1
chr1	50226504	50227200	787		ANKRD4 ELAVL4
chr1	50259988	50260288	691		OR7L1 ELAVL4
chr1	55812754	55813224	473		AK12723
chr1	7906141	79062308	495		CTCF
chr1	75151864	75151864	509		0.832
chr10	8599004	8599004	944		0.293
chr11	10210623	10210725	124		1.175
chr11	11621699	11622288	588		1.181
chr11	11623590	11623590	495		1.174
chr11	11623980	11623980	473		1.181
chr11	11725604	11725608	885		1.195
chr11	11759984	11760024	1099		1.145
chr11	12303544	12303544	489		1.168
chr11	12369428	12369538	881		1.186
chr11	12511970	12512036	487		1.236
chr11	13069480	13069480	697		1.164
chr11	13075852	13075993	1016		1.287
chr11	13075984	13075984	1016		1.163
chr11	13098348	13098348	925		1.164
chr11	13093252	13093889	888		1.181
chr11	13096780	13096646	787		1.202
chr11	131012024	131012024	624		1.195
chr11	13172626	13172626	581		1.182
chr11	1362448	1362448	1779		1.199
chr11	17594880	17594880	613		1.182
chr11	4615652	4615652	791		1.181
chr11	536662	536752	613		1.229
chr11	6514650	6514650	985		1.196
chr11	1097054	10971058	605		1.167
chr11	1534383	1534383	499		1.202
chr11	789494	789494	764		1.182
chr11	5133302	5133302	1104		1.188
chr11	10178158	10178158	1157		1.189
chr11	10591688	10591688	1000		1.182
chr11	19781048	19781934	887		1.183
chr11	5342156	5342264	687		1.205
chr11	9846454	9846454	904		1.183
chr11	24743252	24743252	725		1.183
chr11	4190881	41909238	1016		1.183
chr11	6072688	6072688	974		1.182
chr11	7672452	76725080	489		1.182
chr11	4627246	4628204	899		1.181
chr11	2956432	2956432	918		1.182
chr11	3678500	3678540	1075		1.182
chr11	3680896	3681074	1075		1.182
chr11	7288204	7288204	1075		1.182
chr11	2025830	2025620	791		1.182
chr11	2417996	2417652	697		1.182
chr11	267880	267880	888		1.182
chr11	5515820	5515820	1000		1.182
chr11	5997023	5997396	184		1.182
chr11	4121886	4121886	944		1.182
chr11	4272742	4272820	799		1.182
chr11	5610220	5610290	701		1.182
chr11	5614228	5614228	716		1.182
chr11	5912018	5912132	795		1.182
chr11	6171262	6172254	1016		1.182
chr11	6276367	6276367	934		1.182
chr11	6995548	6995980	433		1.182
chr11	1192548	11939554	1016		1.182
chr11	21957706	21957706	1016		1.182
chr11	22362105	22362105	1210		1.182
chr11	23464210	23464704	495		1.182
chr11	23523307	23523307	1016		1.182
chr11	23708540	23708590	944		1.182
chr11	5197566	5198384	1269		1.182
chr11	5671414	5671414	1269		1.182
chr11	7565196	7565760	765		1.182
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chr11	8484478	8484478	918		1.182
chr11	1488794	1488838	444		1.182
chr11	2380538	2380842	475		1.182
chr11	3510661	3510661	918		1.182
chr11	3395790	3395666	477		1.182
chr11	3632444	3632518	775		1.182
chr11	4174582	4174582	918		1.182
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chr11	3061278	3061316	579		1.182
chr11	3286796	3286646	596		1.182
chr11	3339962	3340192	501		1.182
chr11	3854508	3854508	491		1.182
chr11	3854070	3854070	491		1.182
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chr11	2042490	2042074	507		1.182
chr11	2150318	2150318	597		1.182
chr11	12423862	12423922	527		1.182
chr11	12794708	12795222	515		1.182
chr11	13815626	13815626	515		1.182
chr11	13931356	13931626	471		1.182
chr11	16042087	16042872	786		1.182
chr11	1626288	1626288	145		1.182
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chr11	3086392	3086442	687		1.182
chr11	18515270	18515270	687		1.182
chr11	7141367	7141138	492		1.182
chr11	10731650	10739448	687		1.182
chr11	15283602	15283602	687		1.182
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chr11	16307348	16307357	516		1.182
chr11	16501294	16501294	516		1.182
chr11	16993780	16993787	508		1.182
chr11	5078669	5078135	495		1.182
chr11	7105748	7105748	495		1.182
chr11	7107242	7107825	1084		1.182
chr11	14781212	14782298	778		1.182
chr11	12797846	12797846	778		1.182
chr11	14297540	14297501	392		1.182
chr11	14388034	14388659	496		1.182
chr11	9502885	9502885	496		1.182
chr11	12605288	12605282	795		1.182
chr11	7066379	7066228	470		1.182
chr11	7074774	7074774	470		1.182
chr11	10354145	10354219	805		1.182
chr11	11609820	11609876	477		1.182
chr11	6200170	6200170	477		1.182
chr11	6917192	6917829	1138		1.182
chr11	2880504	2881490	987		1.182
chr11	2499520	2499520	987		1.182
chr11	15845104	15845274	871		1.182
chr11	10687816	10688712	577		1.182
chr11	15429440	15429440	577		1.182
chr11	10098155	10098234	780		1.182
chr11	3481099	3481574	636		1.182
chr11	21301118	21301180	1809		1.182
chr11	3242086	3242568	483		1.182
chr11	11598472	11598280	589		1.182
chr11	16921941	16921941	589		1.182
chr11	9524234	9524313	900		1.182
chr11	4251472	4251682	180		1.182
chr11	4251472	4251472	180		1.182
chr11	1591958	15919710	713		1.182
chr11	14598184	14599366	1225		1.182
chr11	71103408	71103408	1225		1.182
chr11	20890578	20890744	667		1.182
chr11	9292024	9292018	567		1.182
chr11	14420814	14420814	567		1.182
chr11	9858818	9858814	677		1.182
chr11	14858	14828	70		1.182
chr11	14830748	14830748	70		1.182
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chr11	9391386	9391429	794		1.182
chr11	569862	569815	495		1.182
chr11	7042882	7043788	807		1.182
chr11	51152	51152	807		1.182
chr1	2092	2092	0.899		2.785
chr1	11511920	11511920	1.879		2.785
chr1	14954420	14954480	1.914		2.162
chr1	20083028	20083054	1.832		2.503
chr1	21311240	21311252	2.014		2.162
chr1	22756540	22756540	2.293		2.329
chr1	24685512	24685588	2.191		2.124
chr1	50226504	50227200	0.539		2.293
chr1	50259988	50260288	2.268		0.847
chr1	55812754	55813224	1.873		0.509
chr1	7906141	79062308	0.654		2.102
chr1	75151864	75151864	2.588		0.878
chr10	8599004	8599004	2.432		0.123
chr11	10210623	10210725	2.803		1.154
chr11	11621699	11622288	2.002		1.194
chr11	11623590	11623590	1.996		1.196
chr11	11623980	11623980	1.586		0.245
chr11	11725604	11725608	2.002		1.125
chr11	11759984	11760024	1.986		0.091
chr11	12303544	12303544	1.996		1.032
chr11	12369428	12369538	1.814		0.428
chr11	12511970	12512036	2.403		0.083
chr11	13069480	13069480	2.007		0.207
chr11	13075852	13075993	2.302		-1.42
chr11	13075984	13075984	2.036		0.206
chr11	13098348	13098348	1.515		1.169
chr11	13093252	13093889	2.954		0.098
chr11	13096780	13096646	1.913		1.173
chr11	131012024	1310			

chr1	23295154	23295637	484	*	Peak chr1:23295154-23295637	1.685	-1.509	6	3.194	chr1	23294644	23295637	994	*	Peak chr1:23294644-23295637	1.45	-0.005	11	1.455	LUPZ1
chr21	32683762	32683933	621	*	Peak chr21:32683762-32683933	1.619	-1.61	7	1.671	chr21	3268762	3268468	727	*	Peak chr21:3268762-3268468	1.864	-0.866	8	2.85	URE1
chr1	44200450	44200560	601	*	Peak chr1:44200450-44200560	1.477	0.336	7	1.141	chr1	44200230	44200926	697	*	Peak chr1:44200230-44200926	2.309	0.828	8	1.927	PHG2
chr1	158270926	158272102	1177	*	Peak chr1:158270926-158272102	2.666	0.46	14	2.2	chr1	158270926	158271806	881	*	Peak chr1:158270926-158271806	1.95	-0.541	11	2.491	IP013
chr1	14653222	14654024	803	*	Peak chr1:14653222-14654024	1.958	-1.13	8	2.088	chr10	14653222	14653916	695	*	Peak chr10:14653222-14653916	1.682	-0.556	7	2.338	FAM076
chr10	14856758	14857338	581	*	Peak chr10:14856758-14857338	2.211	0.884	7	1.327	chr10	14856568	14857258	691	*	Peak chr10:14856568-14857258	2.207	0.634	7	2.841	FAM076
chr11	75199382	75199850	469	*	Peak chr11:75199382-75199850	1.775	0.164	6	1.611	chr11	75199382	75200068	1277	*	Peak chr11:75199382-75200068	2.123	-0.816	14	1.307	UVAG
chr1	14970114	14970167	574	*	Peak chr1:14970114-14970167	2.176	-0.187	7	2.363	chr1	14970114	14970168	795	*	Peak chr1:14970114-14970168	2.077	0.224	9	1.853	PGS2
chr21	33650570	33651472	903	*	Peak chr21:33650570-33651472	1.479	-0.285	10	1.764	chr21	33650570	33651164	595	*	Peak chr21:33650570-33651164	1.522	-0.348	7	1.87	IFNAR1
chr1	76106708	76107226	519	*	Peak chr1:76106708-76107226	1.663	-1.67	7	3.333	chr15	76106812	76107226	415	*	Peak chr15:76106812-76107226	2.306	1.239	6	1.067	TBC1D28
chr2	21362734	21363746	1013	*	Peak chr2:21362734-21363746	1.696	0.61	11	1.115	chr2	21362734	21363736	913	*	Peak chr2:21362734-21363736	1.614	1.3	10	2.845	SPR3
chr15	8372026	83720810	585	*	Peak chr15:8372026-83720810	1.339	-0.688	7	2.027	chr15	83719602	83720810	1209	*	Peak chr15:83719602-83720810	1.916	0.54	13	1.062	AKAP13
chr7	155226473	155227086	614	*	Peak chr7:155226473-155227086	1.513	-0.199	7	1.712	chr7	155226473	155227086	614	*	Peak chr7:155226473-155227086	1.379	-0.158	7	1.537	RRM33
chr9	8696348	8696950	603	*	Peak chr9:8696348-8696950	2.053	0.208	7	2.691	chr9	8696348	8696950	603	*	Peak chr9:8696348-8696950	1.815	0.08	7	1.35	PARP6
chr9	9009864	9011064	1201	*	Peak chr9:9009864-9011064	1.524	-1.287	13	2.811	chr9	9010292	9010866	575	*	Peak chr9:9010292-9010866	1.755	0.02	7	1.735	PTFRD
chr5	56234436	5623736	1301	*	Peak chr5:56234436-5623736	2.093	0.087	14	2.006	chr5	56234436	56235146	710	*	Peak chr5:56234436-56235146	1.971	0.124	7	1.847	MER3
chr15	70353160	70353586	427	*	Peak chr15:70353160-70353586	2.761	-0.356	6	3.117	chr15	70353160	70353586	427	*	Peak chr15:70353160-70353586	2.68	0.176	6	2.504	PARP6
chr21	34021002	34021870	869	*	Peak chr21:34021002-34021870	1.818	-0.314	10	2.132	chr21	34021786	34022076	801	*	Peak chr21:34021786-34022076	2.623	-0.167	9	2.79	IFN1
chr21	34033884	34034594	711	*	Peak chr21:34033884-34034594	1.582	-0.019	8	1.611	chr21	34033884	34034869	976	*	Peak chr21:34033884-34034869	1.964	-0.262	11	1.702	IFN1
chr21	34111094	34112164	1071	*	Peak chr21:34111094-34112164	1.958	0.22	13	1.372	chr21	34110950	34111570	581	*	Peak chr21:34110950-34111570	1.839	-0.039	7	2.509	IFN1
chr21	34111094	34112164	1071	*	Peak chr21:34111094-34112164	1.97	0.598	12	1.378	chr21	34111788	34112914	1504	*	Peak chr21:34111788-34112914	1.829	-0.145	16	1.974	IFN1
chr21	34112384	34113184	791	*	Peak chr21:34112384-34113184	2.301	-1.427	9	1.372	chr21	34111788	34113291	1504	*	Peak chr21:34111788-34113291	1.829	-0.145	16	1.974	IFN1
chr21	34152886	34153972	687	*	Peak chr21:34152886-34153972	2.150	0.78	8	1.378	chr21	34152886	34155868	583	*	Peak chr21:34152886-34155868	2.204	0.805	7	1.35	IFN1
chr15	76424682	76425273	592	*	Peak chr15:76424682-76425273	2.223	-0.033	7	2.256	chr15	76424682	76425158	477	*	Peak chr15:76424682-76425158	2.113	-0.228	6	2.341	CNR1P1
chr15	13189879	13189974	1163	*	Peak chr15:13189879-13189974	2.323	0.511	13	1.812	chr15	13189974	13189974	566	*	Peak chr15:13189974-13189974	1.423	-0.065	7	1.488	HRF1
chr5	41545456	41545660	705	*	Peak chr5:41545456-41545660	2.221	0.041	8	2.18	chr5	41545756	4155660	805	*	Peak chr5:41545756-4155660	1.554	-0.19	9	1.744	FSDX4
chr1	40717809	40718335	527	*	Peak chr1:40717809-40718335	1.764	0.369	11	1.895	chr1	40717732	40718222	491	*	Peak chr1:40717732-40718222	2.114	0.184	6	1.92	ZNF642
chr15	29073822	29074844	1173	*	Peak chr15:29073822-29074844	2.1	0.74	13	1.36	chr15	29073822	29074844	909	*	Peak chr15:29073822-29074844	1.724	0.117	10	1.607	MTR10
chr2	73295556	73296335	779	*	Peak chr2:73295556-73296335	2.016	-1.467	24	2.446	chr2	73295560	73296454	895	*	Peak chr2:73295560-73296454	1.983	-0.092	10	1.891	SMYD5
chr21	33253766	33254476	711	*	Peak chr21:33253766-33254476	2.906	-1.562	8	3.968	chr21	33253766	33254584	819	*	Peak chr21:33253766-33254584	1.95	0.562	9	1.388	OLIG2
chr4	38563520	38563651	524	*	Peak chr4:38563520-38563651	2.1	0.118	10	1.782	chr4	38563528	38563620	701	*	Peak chr4:38563528-38563620	1.589	0.073	8	1.616	HRF2
chr2	23128428	23129328	901	*	Peak chr2:23128428-23129328	2.168	0.063	10	1.555	chr2	23128807	23129556	750	*	Peak chr2:23128807-23129556	1.814	-0.428	10	1.386	TGDI1
chr2	86200368	86201170	805	*	Peak chr2:86200368-86201170	2.991	1.082	9	1.909	chr2	86200368	86201170	805	*	Peak chr2:86200368-86201170	2.163	0.287	9	1.876	PTCD3
chr15	50327098	50327584	487	*	Peak chr15:50327098-50327584	1.748	-0.029	6	2.677	chr15	50326986	50327384	399	*	Peak chr15:50326986-50327384	2.074	1.047	7	1.027	HMDC
chr6	12632056	12632166	691	*	Peak chr6:12632056-12632166	1.839	0.558	8	1.281	chr6	12632180	12632266	1187	*	Peak chr6:12632180-12632266	1.886	0.185	13	1.401	HINT3
chr9	12295300	12295567	1668	*	Peak chr9:12295300-12295567	1.856	-0.189	18	2.245	chr9	12295484	12295567	674	*	Peak chr9:12295484-12295567	1.885	0.126	8	1.759	CFP10
chr1	14375672	14375710	679	*	Peak chr1:14375672-14375710	2.057	-0.482	8	2.539	chr1	14375722	14375822	1497	*	Peak chr1:14375722-14375822	2.338	1.148	16	1.19	POK4DP
chr9	13242808	13243811	1004	*	Peak chr9:13242808-13243811	1.695	-0.43	11	2.125	chr9	13243314	13243820	607	*	Peak chr9:13243314-13243820	2.121	-1.397	7	3.518	MPDZ
chr16	74217108	74217694	587	*	Peak chr16:74217108-74217694	1.786	-0.043	8	1.829	chr16	74217108	74217694	587	*	Peak chr16:74217108-74217694	1.973	0.652	8	1.321	ADAT1
chr19	41397044	41397044	491	*	Peak chr19:41397044-41397044	2.299	0.423	6	1.876	chr19	41396554	41397044	491	*	Peak chr19:41396554-41397044	2.512	1.432	6	1.08	ZNF565
chrX	62927392	62928438	1047	*	Peak chrX:62927392-62928438	2.135	-0.712	11	2.847	chrX	62926684	62927581	898	*	Peak chrX:62926684-62927581	1.428	-0.316	10	1.744	ARHGFB9
chr17	7780780	7781278	499	*	Peak chr17:7780780-7781278	2.527	0.02	6	2.507	chr17	7780780	7781495	716	*	Peak chr17:7780780-7781495	2.578	-0.029	8	2.607	CNTROB
chr3	114715004	114715880	677	*	Peak chr3:114715004-114715880	2.836	1.118	8	1.518	chr3	114715004	114716174	1171	*	Peak chr3:114715004-114716174	1.724	-0.016	13	1.784	CCND2C
chr3	15868402	15868442	991	*	Peak chr3:15868402-15868442	1.801	0.834	11	1.167	chr3	15868834	15869122	489	*	Peak chr3:15868834-15869122	2.046	0.817	6	1.246	VPR1
chr1	18084322	18084706	495	*	Peak chr1:18084322-18084706	1.469	-0.333	6	1.802	chr1	18082992	18084706	715	*	Peak chr1:18082992-18084706	1.707	-0.008	9	1.715	RG35
chr2	23842789	23842915	1467	*	Peak chr2:23842789-23842915	1.899	-0.176	16	2.275	chr2	23842789	23842915	767	*	Peak chr2:23842789-23842915	1.864	-0.106	9	1.97	RAMP3
chr6	13266994	13267490	497	*	Peak chr6:13266994-13267490	2.589	0.067	6	2.522	chr6	13266946	13267294	889	*	Peak chr6:13266946-13267294	2.008	0.103	10	1.905	MOD3
chr2	38945084	38945692	609	*	Peak chr2:38945084-38945692	1.624	-0.48	7	2.104	chr2	38945195	38945692	498	*	Peak chr2:38945195-38945692	2.254	-0.239	6	2.015	DNKX7
chr1	39879040	39879731	692	*	Peak chr1:39879040-39879731	1.51	-0.133	8	1.643	chr1	39879360	39879731	572	*	Peak chr1:39879360-39879731	1.921	0.725	7	1.196	PCP2
chr20	44287758	44288266	499	*	Peak chr20:44287758-44288266	1.389	0.191	6	1.198	chr20	44287978	44288266	689	*	Peak chr20:44287978-44288266	1.747	0.957	6	1.69	CHN2
chr2	17504923	17504944	1022	*	Peak chr2:17504923-17504944	1.616	-0.814	11	2.427	chr2	17504623	17504720	898	*	Peak chr2:17504623-17504720	1.903	0.899	10	1.004	GP155
chr6	32222469	32222888	480	*	Peak chr6:32222469-32222888	1.919	0.447	6	1.472	chr6	32222469	32222888	480	*	Peak chr6:32222469-32222888	2.496	1.156	6	1.34	PRY1
chr8	32144508	32145588	1081	*	Peak chr8:32144508-32145588	2.022	0.046	12	1.976	chr8	32144778	32145004	1127	*	Peak chr8:32144778-32145004	1.738	0.553	12	1.185	CHN2
chr4	37133530	37134224	695	*	Peak chr4:37133530-37134224	1.76	-0.006	8	1.766	chr4	37133530	37134488	819	*						

**Table S3**

Primers	sense	antisense
ANAPC4	tgcattttgagaagcactgg	tactggcctcctcctcttca
ANKRD35	gccctcagggatacagagatt	tccatccatacctcctctgg
ANTXR1	tcatgtgtttcccgtgaatg	tgaagaaacccatggactc
ARHGEF5	ctacaagccccgagagaatg	gcttccttcaggttctgtgc
ATP5J	ctggaggacctgttgatgct	tggggtttttcgatgacttc
CCDC53	gaagccacttcagagcaacc	ttttctcactttcgccatca
CNTROB	tgctgaggatctcctgctct	cgggagggtttttcagtcttg
CRABP1	aaggctttgaggaggagacc	ctgccttcactctcggacat
CREB1	tgttgttcaagctgcctctg	tttcaagcactgccactctg
FOXP1	ggcagatctcctatgcaagc	ccccgatagtcactccatgt
FAM107B	aaaaaggggtcttgctcctc	gctgttctcctgagattgc
GIN3	accaagaggggttgaggact	gctaccagggctgaagtgtc
GNPAT	atgtgaatgaacctgccaca	ctctgcgtccactgtttctca
GTF2A2	gctcagaggggtcaggaacag	tgcttctcttcaaaagcaatga
IRF2	atgcagaaagcgaaacgact	ctggtgtaaggcaccggatt
MKKS	gggaggtggctgtactgaaa	gggagaatctgcctgaactg
MPDZ	accagatggccttaggcttca	tgcttttggtccgtttaagg
MTMR10	gtttgggactggtctctcca	gcagacggcattcctcttag
NDRG3	tttgctaaagatggcggact	tcaggggactcacaggattc
PARP6	agaagcatgggaacatctgg	gccccctcagtttggtgtaa
PEA15	ggacaccaagctaaccgta	agtgggtagatgggtgggtg
PIGM	ggaaagaatgggggtggtttt	ctatggctggaaggccacta
PTCD3	gcaagtgccttcagcttacc	tgattccagcagctatggtg
SMYD5	atgcagagacctcctttcca	cattgggttcatcagcctct
LPP	gtgcaatgtgtgttccaagc	tggcataataggctccttgc
ACTB	cctggcaccagcacaat	gggccggactcgtcact
GTF2A2_ChIP	cagtccttaggcctctgctg	ttgccaagctcgtagaagt
FAM107B_ChIP	aaaaggcgactcatccagag	ttgccaggaagagagctttg
GIN3_ChIP	aggggaggagatcaaggaaa	ggttggtggtgcaagtgcag
ATP5J_ChIP	ggagtgcctgctgaaggtag	cctgagggctgaagaaaaca
CRABP1_ChIP	ggagcaatttgaggctgaga	ccgatcctactgaacctca
ANKRD35_ChIP	tccgtctcccagtaccaaac	gacagggcagggatgaaata



Table S4

DIAGNOSIS	Sex	Age at Dx	Year of Dx	Pt. at Dx	SAMPLE NO.	SAMPLE	CELL TYPE	MEDIA	NO. ALLOQUOTS	Pit count x106/ml post selection	CD45 count x106/ml post selection	CD45 %	JAK2 status	MPL status	Other	Therapy	BM aspir/repb	BM Fibrosis	Notes	
1	ET	M	32	2003	2090							NR	WT	WT		IFN	HC, Abnormal Megs	None		
2	ET	M	75	2003	720							NR	WT	WT		HU (discont), ASPIRIN	Abnormal Megs	I		
3	ET	M	60	2006	1337							NR	WT	WT		HU/ASPIRIN	Incr Meg	II		
4	ET	M	50	1997	1000							NR	WT	WT		HU	Incr Meg	None	trans to MDS	
5	ET	M	29	1989	1100							NR	WT	WT		HU	Incr Meg, Atypia	III/IV	trans to MF, had transplant 2011	
6	ET	M	54	2000	1131							NR	WT	WT		HU	Incr Meg	None		
7	ET	F	67	2005	767							NR	WT	WT		UNTREATED	Incr Meg, clusters, Atypia	III		
8	ET	M	40	1988	698							NR	WT	WT		HU	Incr Meg	None		
9	ET	F	89	2003	810							NR	WT	WT		HU	HC, Incr Meg	NR		
10	ET	F	64	2005	1216							NR	WT	WT		HU	not recorded	II		
11	ET	M	47	2004	1448							NR	WT	WT		UNTREATED	consistent with ET	None		
12	ET	M	65	1996	1410							NR	WT	WT		HU	HC, Incr Meg	None	Also has myeloma	
13	ET	F	75	2002	1394							NR	WT	WT		HU/ANAGRELIDE	Incr Meg	None		
14	ET	F	49	1997	755							NR	WT	WT		ANAGRELIDE	Fe stores found	NR		
15	ET	F	61	2001	812							NR	WT	WT		HU	HC, Incr Meg	None		
16	ET	M	59	1998	820							NR	WT	WT		HU	Incr Meg	None	patient probably in trans to MF, awaiting BM results	
17	ET	M	49	2006	1125							NR	WT	WT		UNTREATED	Incr Meg and Gran	II		
18	ET	F	58	1999	1409							NR	WT	WT		HU	Incr Meg	NR		
19	ET	F	97	2004	2473							NR	WT	WT		TET2 POS	HC, Incr Meg, low Fe	Present	patient died 01/2012, not related to ET	
20	ET	F	76	2002	902							NR	WT	WT		HU/ANAGRELIDE	Normal	None		
21	ET	F	65	1999	667							NR	WT	WT		HU	Normal	None		
22	ET	F	58	2003	526	T00923	PB PLT (CD45-)	TRI	1	88	0.04	0.045	MUT	WT		HU	Mild HC	None		
23	ET	M	39	2005	714	T00925	PB PLT (CD45-)	TRI	4	328	0.08	0.025	MUT	WT		UNTREATED	Meg clusters	II		
24	ET	F	81	2006	786	T00928	PB PLT (CD45-)	TRI	2	321	0.04	0.0125	MUT	WT		HU	Incr Meg, clusters	II		
25	ET	F	64	2007	541	T00943	PB PLT (CD45-)	TRI	1	30	0.01	0.2	MUT	ND		HU	Incr Meg, large forms	II		
26	ET	M	59	2006	778	T00955	PB PLT (CD45-)	TRI	1	64	0.01	0.015	WT	WT		HU	Incr Meg, large clusters	II/III	t(12;17)(q24.3;q21)	
27	ET	M	62	1997	127*	T00957	PB PLT (CD45-)	TRI	4	539	0.02	0.0037	MUT	WT		TET2 POS	ANAGRELIDE	HC, Abnormal Megs, clusters	II/III	trans to MF 2011
28	ET	M	78	2010	792	T00959	PB PLT (CD45-)	TRI	4	135	0.05	0.037	MUT	ND		HU/ASPIRIN	HC, Incr Megs	None		
29	ET	F	53	1995	776	T00986	PB PLT (CD45-)	TRI	2	176	0.05	0.028	WT	WT		HU	HC, Incr Megs	None		
30	ET	M	46	1997	773	T01001	PB PLT (CD45-)	TRI	2	203	0.2	0.098	MUT	ND		UNTREATED	Incr Meg, clusters	None	pts are dropping, may be pre-trans	
31	ET	F	64	2001	1400	T01014	PB PLT (CD45-)	TRI	3	303	0.1	0.033	MUT	ND		HU	Incr Megs	None		
32	ET	M	83	2009	856	T01015	PB PLT (CD45-)	TRI	2	209	0	0	MUT	ND		TET2 POS	HU	ND	ND	
33	ET	M	44	2000	1322	T01016	PB PLT (CD45-)	TRI	1	88	0	0	MUT	WT		HU	Fe Def	None		
34	ET (probable)	M	69	2007	825	T01022	PB PLT (CD45-)	TRI	1	87	0.01	0.011	MUT	ND		HU	Dry Asp, fibrotic trephine	II		
35	ET	M	72	2008	745	T01023	PB PLT (CD45-)	TRI	4	483	0	0	WT	ND		HU/ANAGRELIDE	HC, Incr Megs, clusters	II		
36	ET	F	61	2010	1054	T01040	PB PLT (CD45-)	TRI	5	649	1.1	0.169	MUT	WT		HU/ASPIRIN	HC, Incr Megs	ND		
37	ET	M	65	2009	826	T01047	PB PLT (CD45-)	TRI	9	63	0.03	0.048	WT	WT		HU/ASPIRIN	HC, Incr Megs, clusters	II		
38	ET	F	59	2002	702	T01051	PB PLT (CD45-)	TRI	4	509	0.03	0.006	MUT	WT		HU	HC	None		
39	ET	M	75	2003	681	T01052	PB PLT (CD45-)	TRI	8	154	0.1	0.065	MUT	WT		TET2 POS	HC, Incr Megs, abnormal Megs	None		
40	ET	F	38	1990	1354	T01060	PB PLT (CD45-)	TRI	6	111	0.2	0.18	MUT	WT		HU	HC, Incr Megs	None		
41	ET	F	36	2002	768	T01063	PB PLT (CD45-)	TRI	5	537	0.04	0.007	MUT	WT		UNTREATED	Incr Megs	None		
42	ET	M	54	2004	842	T01064	PB PLT (CD45-)	TRI	4	462	0.01	0.002	MUT	WT		IFN	Incr Megs, Clusters	None		
43	ET	F	62	2005	1013	T01320	PB PLT (CD45-)	TRI	2	179	0.48	0.06	MUT	ND		HU	NR	NR		
44	PV	M	74									MUT	WT							
45	PV	F	77									MUT	WT							
46	PV	M	78									WT	WT							
47	PV	M	44									WT	WT							
48	ET	F	78									MUT	WT							
49	ET	F	44									MUT	WT							
50	ET	F	78									MUT	WT							
51	ET	M	44									MUT	WT							
52	ET	M	44									MUT	WT							
53	ET	F	41	1986								MUT	WT			UNTREATED				
54	ET	M	81									WT	WT							
55	ET	F	68									WT	WT							
56	ET	M	29									WT	WT							
57	ET	M	81									WT	WT							
58	ET											WT	WT							
59	ET											WT	WT			HU				
60	ET											WT	WT			HU				
61	ET											WT	WT							
62	ET											WT	WT			ASPIRIN				
63	ET											WT	WT							
64	ET											WT	WT							
65	PMF	F	74									MUT	WT							
66	PMF	F	79	2002								MUT	WT							
67	PMF	M	80									MUT	WT							
68	PMF	M	82									MUT	WT							
69	PMF	F	83	1995								MUT	WT							
70	PMF	M	50	2004								MUT	WT							
71	PMF	F	83									MUT	WT							
72	PMF	M	64									WT	WT							
73	PMF	M	67									WT	WT							
74	PMF	M	75									WT	WT							
75	PMF	M	70									WT	WT							
76	PMF	M	26									WT	WT							
77	PV	M	82									MUT	WT							
78	PV	F	75									MUT	WT							
79	ET	F	78									MUT	WT							
80	ET	F	42									WT	WT							
81	ET											WT	WT			UNTREATED				
82	ET											WT	WT							
83	PMF	M	78	2006								WT	WT							
84	PMF	M	78									WT	WT							
85	PMF	F	83									WT	WT							
86	PMF	F	79									WT	WT							
87	Ctrl	M	29									WT	WT							
88	Ctrl	F	35									WT	WT							
89	Ctrl	F	33									WT	WT							
90	Ctrl	F	26									WT	WT							
91	Ctrl	M	28									WT	WT							
92	Ctrl	F	34									WT	WT							
93	Ctrl	F	35									WT	WT							
94	Ctrl	M	29									WT	WT							
95	Ctrl	M	35									WT	WT							
96	Ctrl	M	45									WT	WT							
97	Ctrl	M	34									WT	WT							