Table S1.A - Relative of all the normalized and filtered motifs found among 1.5kbp upstream on every human GERMIL TSS exon.

Exon (position)	Genome-wide motif matching data						Motif enrichment data						MEME motifs					
	Transfac motif	Distance	Exon position	Footprint score	Score	Strand	Indirect/structural MEME motif	Distance	Exon position	Footprint score	Score	Strand	MEME motif	Distance	Exon position	Footprint score	Score	Strand
chrom=hg19 (GRCh37/hg19)	VDTR_Q6	1	162018287	162018303	0.664203	+	transport_MOTIF_19	81	162017207	162017216	1	+						
162018304-	VSMN_Q6_6	6	162018292	162018298	0.714286	+												
	VSMN_Q6_8	7	162018293	162018298	0.71429	+												
	VSAT0097_Q1	8	162018294	162018300	0.769231	+												
	VSAT_Q6_1	14	162018300	162018306	0.769231	+												
	VDTR_Q6	41	162018327	162018373	0.646203	+												
	VSPI_05	54	162018340	162018387	0.758409	+												
	VSMN_Q6_6	55	162018341	162018347	0.714286	+												
	VSMU_Q6	60	162018346	162018401	0.754513	+												
	VDTN_Q6	67	162018353	162018391	0.779999	+												
	VDTN_Q6	75	162018361	162018399	0.811394	+												
	VSPI_Q6_04	78	162018364	162018406	0.90687	+												
	VSAT_Q6_1	79	162018365	162018371	0.769231	+												
	VSPI_Q6_04	79	162018365	162018406	1	+												
	VSPI_Q6_04	80	162018366	162018406	1	+												
	VSAT_Q6	81	162018367	162018373	0.769231	+												
	VDTP_Q6	82	162018368	162018414	0.976528	+												
	VDTP_Q6	87	162018371	162018419	0.940203	+												
	VSAT_Q6	87	162018371	162018377	0.769231	+												
	VSAT2_Q6	105	162018389	162018395	0.769231	+												
	VSJ02_Q6	145	162018431	162018437	1	+												
	VSJ02_Q6	145	162018431	162018437	1	+												
	VSJ02_Q6	145	162018431	162018437	1	+												
	VSJ02_Q6	145	162018431	162018437	1	+												
	VSJ02_Q6	145	162018431	162018437	1	+												
	VSMN_Q6_04	147	162018433	162018479	0.929365	+												
	VSMJ_Q6	147	162018433	162018479	0.929365	+												
	VSMJ_Q6	147	162018433	162018479	0.929365	+												
	VSJ02_Q6	147	162018433	162018479	0.929365	+												
	VSJ02_C	148	162018434	162018480	0.940527	+												
	VSJ02_C	148	162018434	162018480	0.940527	+												
	VSJ02_Q6	149	162018435	162018481	1	+												
	VSJ02_Q6	149	162018435	162018481	1	+												
	VDTP_Q6	160	162018446	162018492	0.79958	+												
	VSMN_Q6_8	237	162018523	162018569	0.808407	+												
	VSMN_Q6_8	237	162018523	162018569	0.808407	+												
	VSMN_Q6_8	237	162018523	162018569	0.76329	+												
	VSJ0T1_Q6	263	162018549	162018611	0.937652	+												
	VSMN_Q6_8	267	162018553	162018599	1	+												
	VSMN_Q6_8	267	162018553	162018599	1	+												
	VSMN_Q6_8	267	162018553	162018599	1	+												
	VSMN_Q6_8	267	162018553	162018599	1	+												
	VSMN_Q6_04	267	162018553	162018599	1	+												
	VSMN_Q6_04	267	162018553	162018599	1	+												
	VSMN_Q6_04	267	162018553	162018599	1	+												
	VSMN_Q6_04	267	162018553	162018599	1	+												
	VSMN_Q6_04	267	162018553	162018599	1	+												
	VSMN_Q6	585	162018871	162018921	0.94075	+												
	VDTP_Q6	597	162018883	162018929	0.79958	+												
	VTMF_Q6	624	162018910	162018926	0.872348	+												
	VSJ0T1_Q6	627	162018913	162018959	0.94075	+												
	VDTPM_Q6	633	162018919	162018965	0.888043	+												
	VSMN_Q6_8	808	162019184	162019184	0.945999	+												
	VSMN_Q6_8	808	162019184	162019184	0.945999	+												
	VSMN_Q6_8	808	162019184	162019184	0.945999	+												
	VDTN_Q6	850	162019226	162019272	0.882771	+												
	VSMN_Q6_8	852	162019228	162019274	0.945999	+												
	VSATDET_Q6	852	162019228	162019274	0.79958	+												
	VSJ0T1_Q6	877	162019253	162019299	0.899968	+												
	VSMN_Q6_8	877	162019253	162019299	0.899968	+												
	VSMN_Q6_8	877	162019253	162019299	0.899968	+												
Exon	**36**						**1**						**0**					
chrom=hg19 (GRCh37/hg19)	VDTN_Q6	13	162019137	162019157	1	+	unknown_MOTIF_3_n12	18	162019168	162019115	1	+						
162019158-	VSPI_Q6_04	16	162019141	162019224	1	+												
162019962- (162019158)	VSPI_Q6	16	162019141	162019224	1	+												
	VSPI_Q6_04	17	162019142	162019224	0.969037	+												
	VSPI_04	18	162019143	162019224	1	+												
	VSAT_Q6	18	162019143	162019149	0.769231	+												
	VSPI_Q6_04	18	162019143	162019224	0.988664	+												
	VDTP_Q6	21	162019146	162019225	0.79958	+												
	VSMN_Q6	31	162019156	162019202	0.94075	+												
	VSMN_Q6	32	162019158	162019208	0.941006	+												
	VSAT_Q6_01	33	162019159	162019166	0.837166	+												
	VSMN_Q6_8	71	162019197	162019277	0.752291	+												
	VSMN_Q6_8	71	162019197	162019277	0.752291	+												
	VSMN_Q6_8	74	162019170	162019277	0.754261	+												
	VSMN_Q6_8	74	162019170	162019277	0.754261	+												
	VDTN_Q6	114	162019210	162019226	0.779999	+												
	VDTP_Q6	180	162019280	162019281	0.940203	+												
	VSMN_Q6_8	453	162019588	162019595	0.88093	+												
	VSMN_Q6_8	492	162019588	162019595	0.882877	+												
	VSMN_Q6_8	492	162019588	162019595	0.882877	+												
	TN0	498	162019594	162019580	0.819487	+												
	VSAT0097_Q1	512	162019608	162019614	1	+												
	VSAT_Q6	513	162019609	162019615	0.769231	+												
	VSAT_Q6	513	162019609	162019615	0.769231	+												
	VSJ0T1_Q6	558	162019654	162019699	0.940162	+												
	VSJ0T1_Q6	558	162019654	162019699	0.940162	+												
	VSJ0T1_Q6	558	162019654	162019699	0.940162	+												
	VSJ0T1_Q6	558	162019654	162019699	0.940162	+												
	TN0	564	162019660	162019616	0.777044	+												
	VSMN_Q6_8	570	162019666	162019711	0.940162	+												
	VSJ0T1_Q6	570	162019666	162019711	0.940162	+												
	TN0	582	162019672	162019628	0.777044	+												
	TN0	582	162019672	162019628	0.777044	+												
	TN0	582	162019672	162019628	0.777044	+												
	TN0	583	162019673	162019629	0.777044	+												
	TN0	583	162019673	162019629	0.777044	+												
	TN0	583	162019673	162019629	0.777044	+												
	TN0	584	162019674	162019630	0.777044	+												
	VSJ0T1A_Q3	609	162019699	162019675	0.762164	+												
Exon	**43**						**1**						**0**					
chr=hg19 (GRCh37/hg19)	VDTP_Q6	23	162019748	162019768	0.91579	+	unknown_MOTIF_19	180	162019562	162019588	1	+						
162019837-	VDTP_Q6	44	162019811	162019837	1	+	unknown_MOTIF_6_n12	299	162019186	162019115	1	+						
	VSMN_Q6	50	162019817	162019863	0.94075	+												
	VDTN_Q6	51	162019817	162019863	0.882771	+												
	VSATDATA_Q6	79	162019846	162019894	0.893091

Table S4.B - Relation of all the normalized and filtered motifs found among 1 kbp upstream on every mouse *Cerkl* TSS exons. The different groups contain the known general TFBS and subfunctionalized MEME's (see Methods section), as no MEME motifs were found. Basically, the following information is included per hit: matrix name, distance to the TSS, genomic start-end coordinates, score and strand. Matrices hits overlapping homopolymer stretches larger than 5 bp were discarded.

Exon (position)	General transcription factor binding sites						Subfunctionalized MEME binding sites					
	Transfac motif	Distance	Start position	End position	Score	Strand	Subfunctionalized MEME motif	Distance	Start position	End position	Score	Strand
NeuroD1 (79296708-79296793)	V$AP2ALPHA_01	2	79296795	79296803	0.84028	+						
	V$ZF5_01	48	79296841	79296848	1	-						
	V$SP1_Q4_01	51	79296844	79296856	1	-						
	V$SP1_Q6	51	79296844	79296856	1	-						
	V$ZF5_01	52	79296845	79296852	0.980623	-						
	V$SP1_Q2_01	52	79296845	79296854	0.864885	+						
	V$SP1_Q6_01	53	79296846	79296855	0.968076	-						
	V$SP1_01	53	79296846	79296855	0.837534	-						
	V$ETF_Q6	58	79296851	79296857	0.79508	-						
	V$AP2ALPHA_01	61	79296854	79296862	0.843553	-						
	V$ZF5_01	88	79296881	79296888	0.938902	+						
	V$GEN_INI3_B	95	79296888	79296895	0.770485	-						
	V$GEN_INI2_B	95	79296888	79296895	0.754051	-						
	V$USF2_Q6	106	79296899	79296904	1	-						
	V$MAZ_Q6	128	79296921	79296928	0.773185	+						
	V$GEN_INI3_B	133	79296926	79296933	0.983197	-						
	V$GEN_INI2_B	133	79296926	79296933	0.982997	-						
	V$GEN_INI_B	133	79296926	79296933	0.96141	-						
	V$SP1_Q6_01	141	79296934	79296943	0.875691	+						
	V$MAZ_Q6	143	79296936	79296943	1	+						
	V$ETF_Q6	144	79296937	79296943	0.88325	+						
	V$SP1_Q4_01	159	79296952	79296964	0.917773	+						
	V$SP1_Q6	159	79296952	79296964	0.912674	+						
	V$SP1_Q6_01	160	79296953	79296962	0.880685	+						
	V$SP1_Q2_01	161	79296954	79296963	0.898453	-						
	V$MAZ_Q6	162	79296955	79296962	0.894574	+						
	V$ZF5_01	163	79296956	79296963	0.980623	+						
	V$ETF_Q6	163	79296956	79296962	0.976282	+						
	V$PAX4_03	183	79296976	79296987	0.762249	-						
	V$MAZ_Q6	185	79296978	79296985	0.754552	+						
	V$TFIII_Q6	186	79296979	79296987	0.75442	+						
	V$AP2REP_01	193	79296986	79296992	0.838848	+						
	V$ETF_Q6	202	79296995	79297001	0.906968	+						
	V$SP1_Q6_01	202	79296995	79297004	0.892991	+						
	V$TFIII_Q6	202	79296995	79297003	0.815815	+						
	V$SP1_Q2_01	203	79296996	79297005	0.815064	-						
	V$ETF_Q6	205	79296998	79297004	0.976282	+						
	V$USF2_Q6	208	79297001	79297006	0.852723	+						
	V$ETF_Q6	220	79297013	79297019	0.88325	+						
	V$USF2_Q6	229	79297022	79297027	0.798365	-						
	V$USF_01	268	79297061	79297074	1	+						
	V$USF_01	268	79297061	79297074	1	-						
	V$USF_02	268	79297061	79297074	1	+						
	V$USF_02	268	79297061	79297074	1	-						
	V$USF_Q6_01	269	79297062	79297073	1	-						
	V$USF_Q6	270	79297063	79297072	1	+						
	V$USF_C	271	79297064	79297071	0.995257	-						
	V$USF_C	271	79297064	79297071	0.843157	+						
	V$USF2_Q6	272	79297065	79297070	1	+						
	V$USF2_Q6	272	79297065	79297070	1	-						
	V$ETF_Q6	313	79297106	79297112	0.79508	+						
	V$GEN_INI_B	350	79297143	79297150	0.808427	-						
	V$GEN_INI2_B	350	79297143	79297150	0.795559	-						
	V$GEN_INI3_B	350	79297143	79297150	0.792429	-						
	V$TBP_Q6	736	79297529	79297535	0.872218	+						
	V$AP1_Q4_01	768	79297561	79297568	0.82986	+						
	V$AP1_Q6_01	768	79297561	79297569	0.794901	-						
	V$AP1_Q2_01	769	79297562	79297573	0.98612	-						
	V$USF_Q6_01	861	79297654	79297665	0.841093	+						
	V$USF2_Q6	864	79297657	79297662	0.945642	+						
	V$GEN_INI3_B	989	79297782	79297789	0.794702	+						
	V$GEN_INI2_B	989	79297782	79297789	0.778556	+						
	V$GEN_INI_B	989	79297782	79297789	0.754775	+						
Total:	63						0					
1 (79268859-79269145)	V$ETF_Q6	29	79269174	79269180	0.976282	-	unknown_MOTIF_2	273	79269418	79269437	1	-
	V$AP2GAMMA_01	45	79269190	79269198	0.829022	-	celinterac_MOTIF_6	275	79269420	79269439	1	-
	V$AP2REP_01	79	79269224	79269230	0.769464	+	unknown_MOTIF_12	276	79269421	79269435	1	+
	V$GEN_INI2_B	258	79269403	79269410	0.765953	-	unknown_MOTIF_9_n12	789	79269934	79269941	1	-
	V$USF2_Q6	287	79269432	79269437	0.945642	-						
	V$AP2ALPHA_01	337	79269482	79269490	0.903935	-						
	V$AP2GAMMA_01	337	79269482	79269490	0.831057	-						
	V$USF_C	347	79269492	79269499	0.945023	+						
	V$USF_C	347	79269492	79269499	0.837247	-						
	V$USF2_Q6	348	79269493	79269498	1	+						
	V$USF2_Q6	348	79269493	79269498	1	-						
	V$USF2_Q6	519	79269664	79269669	0.852723	-						
	V$USF2_Q6	602	79269747	79269752	0.852723	+						
	V$AP1_C	729	79269874	79269882	0.754738	+						
	V$AP2REP_01	813	79269958	79269964	0.858646	+						
	V$AP2_Q6_01	837	79269982	79269994	1	+						
	V$AP2GAMMA_01	838	79269983	79269991	0.853292	-						
	V$MAZ_Q6	842	79269987	79269994	1	-						
	V$ETF_Q6	842	79269987	79269993	0.88325	-						
Total:	19						4					
3a (79210911-79211018)	V$TBP_Q6	35	79211053	79211059	1	-						
	V$AP2_Q6	59	79211077	79211088	0.927768	+						
	V$AP2ALPHA_01	60	79211078	79211086	0.905649	-						
	V$AP2GAMMA_01	60	79211078	79211086	0.881122	-						
	V$AP2ALPHA_01	61	79211079	79211087	0.890767	+						
	V$AP2GAMMA_01	61	79211079	79211087	0.821102	+						
	V$GEN_INI2_B	83	79211101	79211108	0.754051	-						
	V$GEN_INI3_B	83	79211101	79211108	0.751409	-						
	V$TBP_Q6	287	79211305	79211311	0.788244	-						
	V$TBP_01	308	79211326	79211333	0.825779	+						
	V$GEN_INI2_B	421	79211439	79211446	0.795559	+						
	V$GEN_INI3_B	421	79211439	79211446	0.792429	+						
	V$GEN_INI_B	421	79211439	79211446	0.769738	+						
	V$USF_C	529	79211547	79211554	0.854199	+						
	V$USF_C	529	79211547	79211554	0.854199	-						
	V$USF2_Q6	530	79211548	79211553	1	+						
	V$USF2_Q6	530	79211548	79211553	1	-						
	V$AP2ALPHA_01	551	79211569	79211577	0.84963	-						
	V$USF2_Q6	687	79211705	79211710	0.852723	-						
	V$AP1FJ_Q2	821	79211839	79211849	0.917626	-						
	V$AP1_Q4	821	79211839	79211849	0.882413	-						
	V$AP1_Q6	821	79211839	79211849	0.873009	-						
	V$AP1_Q2	821	79211839	79211849	0.855714	-						
	V$AP1_Q4_01	822	79211840	79211847	0.853764	+						
	V$AP1_Q6_01	822	79211840	79211848	0.839062	-						
	V$AP1_Q2_01	823	79211841	79211852	0.970118	-						
	V$GEN_INI2_B	977	79211995	79212002	0.754051	-						
Total:	27						0					
3b (79208837-79209024)	V$GEN_INI2_B	44	79209068	79209075	0.865973	-	unknown_MOTIF_5_n12	258	79209282	79209289	1	-
	V$GEN_INI3_B	44	79209068	79209075	0.848473	-	unknown_MOTIF_5_n12	372	79209396	79209403	1	-
	V$GEN_INI_B	44	79209068	79209075	0.836582	-	unknown_MOTIF_10_n12	468	79209492	79209499	1	+
	V$USF2_Q6	70	79209094	79209099	0.945642	-	unknown_MOTIF_5_n12	885	79209909	79209916	1	-
	V$AP1_Q2_01	103	79209127	79209138	0.98065	+						
	V$AP1_Q6_01	107	79209131	79209139	0.781826	+						
	V$AP1_Q4_01	108	79209132	79209139	0.816248	-						
	V$TBP_Q6	125	79209149	79209155	1	-						
	V$AP1_01	194	79209218	79209230	0.820411	+						
	V$AP1_Q6	195	79209219	79209229	0.762787	-						
	V$AP1_Q4_01	196	79209220	79209227	0.825181	+						
	V$AP1_Q6_01	196	79209220	79209228	0.778372	-						
	V$USF2_Q6	213	79209237	79209242	0.945642	-						
	V$AP2REP_01	241	79209265	79209271	0.838848	-						
	V$TBP_01	282	79209306	79209313	0.825779	+						
	V$AP2REP_01	307	79209331	79209337	0.786676	+						
	V$AP2GAMMA_01	314	79209338	79209346	0.813835	+						
	V$AP2REP_01	322	79209346	79209352	0.786676	+						
	V$AP1_Q4_01	345	79209369	79209376	0.865844	+						
	V$AP1_Q6_01	345	79209369	79209377	0.846628	-						
	V$AP1_Q2_01	346	79209370	79209381	0.950767	-						
	V$MAZ_Q6	373	79209397	79209404	0.878611	-						
	V$USF2_Q6	460	79209484	79209489	0.852723	-						
	V$GEN_INI3_B	545	79209569	79209576	0.770485	+						
	V$GEN_INI2_B	545	79209569	79209576	0.754051	+						
	V$AP2REP_01	601	79209625	79209631	0.769553	+						
	V$USF2_Q6	612	79209636	79209641	0.945642	-						
	V$TBP_Q6	744	79209768	79209774	0.797653	+						
	V$TBP_01	783	79209807	79209814	0.835771	+						
	V$TBP_Q6	785	79209809	79209815	0.872218	-						
	V$TBP_Q6	802	79209826	79209832	1	-						
	V$MAZ_Q6	886	79209910	79209917	0.878611	-						
	V$AP2GAMMA_01	948	79209972	79209980	0.910769	-						
	V$AP2ALPHA_01	948	79209972	79209980	0.902688	-						
	V$USF2_Q6	993	79210017	79210022	0.798365	+						
Total:	35						4					