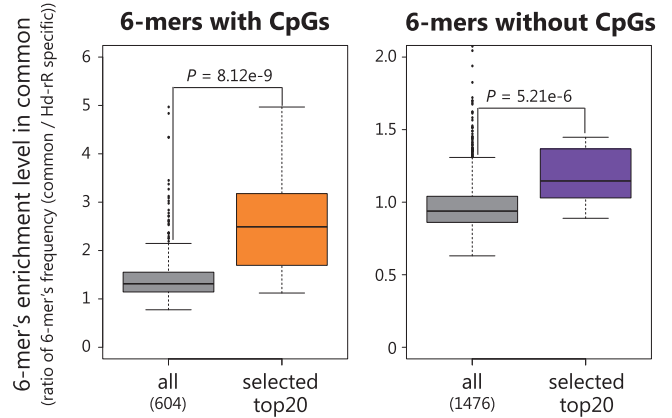


Supplementary Figure S1. Boxplots showing the length of each HMD in common HMDs, Hd-rR specific HMDs and HNI specific HMDs. P-values were calculated using Wilcoxon rank sum test. In the box plots, the bottom and top of the boxes correspond to the 25th and 75th percentiles; the internal band is the 50th percentile (median). The plot whiskers extending outside the boxes correspond to the lowest and highest datum within 1.5 interquartile ranges of the lower and upper quartiles, respectively.



Supplementary Figure S2. Boxplots showing the 6-mer's enrichment levels in common HMDs (the ratio of each 6-mer's frequency per base pair (common HMDs /species-specific HMDs)). Grey boxes represent the all 6-mers, while orange and purple boxes represent the top twenty most conserved 6-mers with and without CpGs, respectively. P-values were calculated using Wilcoxon rank sum test. In the box plots, the bottom and top of the boxes correspond to the 25th and 75th percentiles; the internal band is the 50th percentile (median). The plot whiskers extending outside the boxes correspond to the lowest and highest datum within 1.5 interquartile ranges of the lower and upper quartiles, respectively.

Supplementary Table S1. RPKM (reads per kilobase of exon per million mapped reads) of the genes which have Hd-rR specific HMDs in their promoters. RPKM in d-rR and in HNI are shown.

Gene ID	Gene name	RPKM in d-rR	RPKM in HNI
ENSORLG00000000045	NoName	8.04072298	4.68337951
ENSORLG00000000081	ptp4a1	359.0150531	257.4057491
ENSORLG00000000213	ARPC2(1of2)	0.534549189	0
ENSORLG00000000293	si:ch211-255i20.3	0.202121785	0.769050105
ENSORLG00000000313	lyg1	1.320650937	0
ENSORLG00000000335	slit3	1.054421449	0.66865869
ENSORLG00000000509	ptgs1(1of2)	0.802705878	0.610840678
ENSORLG00000000640	ints4	12.5448535	14.8229372
ENSORLG00000000741	NoName	1.708804784	0.216726845
ENSORLG00000000754	RHBDF2	36.48298215	27.37770975
ENSORLG00000000833	dus2	31.73596004	50.70891833
ENSORLG00000001169	NoName	4873.489952	728.2305547
ENSORLG00000001183	si:ch73-56p18.4	20.38969062	20.50339771
ENSORLG00000001307	NoName	0	1.225726658
ENSORLG00000001585	mfsd10	51.57433621	43.00591724
ENSORLG00000001627	pcsk9	0.381854152	1.089683293
ENSORLG00000001697	KIF2A(1of2)	1.334162168	5.076333345
ENSORLG00000001769	slc30a8	33.65194547	6.097227408
ENSORLG00000001776	NoName	0	0
ENSORLG00000001861	pard6b	9.363965418	20.8220316
ENSORLG00000001880	dpm1	20.48571237	30.21493544
ENSORLG00000002073	slc22a15	11.94077484	14.33754914
ENSORLG00000002252	myt1b	1.869359152	5.102586412
ENSORLG00000002339	slc1a8a	8.871544839	6.068351649
ENSORLG00000002460	CLINT1(1of2)	13.4532103	11.85404354
ENSORLG00000002526	fermt3b	1.556984689	0.807838277
ENSORLG00000002622	ldb3a	0.123933697	0
ENSORLG00000002741	lrrc34	1.189956423	0.617406422
ENSORLG00000002748	TXK	0.337025239	0.427447403
ENSORLG00000002764	si:dkeyp-86f7.4	123.0692598	132.9525277
ENSORLG00000002766	sept4a	0.826224649	0
ENSORLG00000002806	ttc9c	4.122370864	5.377764416
ENSORLG00000003248	si:dkey-7e14.3	0.992734208	2.832929469
ENSORLG00000003303	SEPT9(1of2)	23.44238718	53.93764283
ENSORLG00000003649	NoName	0.133759788	0
ENSORLG00000003726	stard13a	0.481190412	0
ENSORLG00000003819	atic	59.28243692	75.6764804
ENSORLG00000003841	cabp2b	0	0
ENSORLG00000003911	taf2	13.4743413	20.14112427
ENSORLG00000003959	HRH2(1of2)	0.642164702	1.221681355
ENSORLG00000004413	gckr	0.33432286	0.636029984
ENSORLG00000004424	asph	20.78033094	21.44183463
ENSORLG00000004792	adgrl3.1	0.542616532	0.12144667
ENSORLG00000004819	dhx15	63.30689482	68.58746777
ENSORLG00000004845	PAXBP1	56.08771633	50.09143544
ENSORLG00000005181	slc27a2b	7.870320746	26.0275395
ENSORLG00000005308	lim2.3	0.536514443	0
ENSORLG00000005381	lrp2b	0.379776749	0.061928862
ENSORLG00000005557	NoName	0.795992338	1.009553047
ENSORLG00000005581	NoName	0.48109427	1.830508272
ENSORLG00000005592	rps15	409.4277099	160.3491031
ENSORLG00000005630	mcf2la	6.205554495	22.29967438
ENSORLG00000005961	NoName	155.9051659	1.116088796
ENSORLG00000005964	clndn1a	9.21287428	9.464559817
ENSORLG00000005993	oacyl	0	0

ENSORLG00000006157	slc17a6b	0.08161741	0
ENSORLG00000006195	si:ch73-67c22.3(14of37)	6.18278576	4.32440947
ENSORLG00000006223	si:dkey-185e18.6	3.474569728	1.65254219
ENSORLG00000006283	smu1b	1.151336715	0.73011726
ENSORLG00000006359	wu:fd14a01(4of6)	0.098903374	0.188157972
ENSORLG00000006375	EGR4	0.919739046	0
ENSORLG00000006490	brd4	23.08509842	32.08242047
ENSORLG00000006833	cers5	6.344866461	0.710043703
ENSORLG00000006850	wnt8b	0.133271168	0
ENSORLG00000007124	bmp8a	0.801273458	0
ENSORLG00000007296	si:ch1073-280h16.1	28.41368985	65.87130639
ENSORLG00000007558	gcnt3	8.60369647	0.314769941
ENSORLG00000007631	rnf26	29.49561393	28.73564806
ENSORLG00000007789	march1	0.358115162	0
ENSORLG00000007861	rarga	14.63169733	13.18545537
ENSORLG00000007932	rcn2	49.5532094	61.11832051
ENSORLG00000008028	zgc:92360	0.249669681	0.71247328
ENSORLG00000008045	slc25a26	4.487451679	3.41484733
ENSORLG00000008114	SLCO5A1(3of3)	20.34089542	21.06462986
ENSORLG00000008204	tusc5a	0	0
ENSORLG00000008287	asb12b	0.133028194	3.796177137
ENSORLG00000008568	akr1a1a	4.188522412	4.165311822
ENSORLG00000008655	acsl1b	0.687817417	0
ENSORLG00000008718	NoName	0	0
ENSORLG00000008851	txlnbb	0.323335145	0.410084325
ENSORLG00000008978	TMEM233	1.999067515	0
ENSORLG00000008984	LMNA(1of2)	0.892940123	0.364021531
ENSORLG00000009025	kcnip3b	0.931876939	0
ENSORLG00000009162	kcnk12l	0.350797905	0
ENSORLG00000009204	acer1	6.497570828	0.334087952
ENSORLG00000009220	gorasp2	32.38525589	18.35758824
ENSORLG00000009491	NoName	0.298429302	0
ENSORLG00000009564	NoName	0	0
ENSORLG00000009585	GAB3	0.410305329	0.130097042
ENSORLG00000009853	NoName	60.88081844	107.5492323
ENSORLG00000010101	zgc:101785	10.84233204	2.508678506
ENSORLG00000010130	jmjd7	6.367938702	9.84314221
ENSORLG00000010131	chst2b	9.750956504	0
ENSORLG00000010188	NoName	6.57176897	0
ENSORLG00000010534	CYP46A1(2of2)	53.7104095	0
ENSORLG00000010738	FCHSD1	0.350966639	0.133538763
ENSORLG00000010811	trappc11	13.73781921	26.46415699
ENSORLG00000010872	vrk1	94.63758293	60.13716324
ENSORLG00000011003	EPHB1(1of2)	1.506394102	1.164242627
ENSORLG00000011018	NoName	24.57347099	18.86387895
ENSORLG00000011521	NoName	0.164523031	0
ENSORLG00000011646	RASA2	5.722820729	15.46496702
ENSORLG00000011676	NoName	1.053660134	4.51018735
ENSORLG00000011698	ddias	15.2902483	7.272204153
ENSORLG00000011703	NoName	5.551758153	11.06484771
ENSORLG00000011885	hdhd2	6.843449123	12.1395875
ENSORLG00000011950	NoName	15.46183529	66.43219605
ENSORLG00000012156	ano10b	6.051770267	1.311624038
ENSORLG00000012194	srd5a2b	0.322382758	0.817752836
ENSORLG00000012440	auts2a	0.376720048	0.089586024
ENSORLG00000012675	NoName	0.981604901	1.24496452
ENSORLG00000012838	bace2	13.69155394	105.2484079
ENSORLG00000012875	poll	24.29722029	30.10925139
ENSORLG00000013041	PTCHD3	0.105901254	0

ENSORLG00000013244	vmhcl	0	0.283004167
ENSORLG00000013368	lrrc53	0.232006246	0
ENSORLG00000013616	slc16a7	0.555931157	0.176271167
ENSORLG00000013691	parp1	130.2760852	64.73850106
ENSORLG00000013731	pkd211	1.411333932	0.268498151
ENSORLG00000013769	zgc:92107	68.50837573	67.59544461
ENSORLG00000013831	APOH	0	0.575194243
ENSORLG00000013910	tnfrsf9a	12.50845102	12.07074295
ENSORLG00000013920	FADS6	0.405366468	0
ENSORLG00000013983	NoName	34.81518868	10.70847339
ENSORLG00000013993	keap1a	3.549477533	20.56496948
ENSORLG00000014020	NoName	34.84426664	5.906959318
ENSORLG00000014089	NOX5	0.32300117	1.966371584
ENSORLG00000014119	map3k1	0.348286226	0.662594482
ENSORLG00000014180	si:ch1073-416j23.1	41.00159729	99.94575167
ENSORLG00000014235	PPAP2C(1of2)	55.40124985	88.62987278
ENSORLG00000014287	kif3a(2of2)	0	0
ENSORLG00000014312	serpinh1b	2.034682196	0.215048093
ENSORLG00000014430	NoName	0.426078624	0
ENSORLG00000014608	adoa	36.40806843	0
ENSORLG00000014644	sv2bb	0.28760727	0.218862505
ENSORLG00000014670	slc17a9a	3.226995964	6.821304373
ENSORLG00000014673	LRRC52(2of2)	0.33780539	0.642655296
ENSORLG00000014798	vps8	12.17074625	26.64210761
ENSORLG00000014811	cyp27a7	0.177424837	0.168770266
ENSORLG00000014932	nt5e(1of2)	1.467471908	2.481582909
ENSORLG00000014942	atad1a	10.33599214	0
ENSORLG00000014988	abcc12	0.219611631	0
ENSORLG00000015149	adamts18	18.35550039	9.543431149
ENSORLG00000015165	zgc:162161	7.984756352	12.79203285
ENSORLG00000015284	rab11bb(1of2)	41.43596979	43.66651218
ENSORLG00000015350	clip2	8.601340894	10.27662911
ENSORLG00000015360	tat	4.035322309	0.558324963
ENSORLG00000015514	NoName	0.674829728	0
ENSORLG00000015540	racgap1	157.3526882	57.80544682
ENSORLG00000015707	si:dkeyp-110c7.4(1of2)	3.347062582	1.273518752
ENSORLG00000015733	CTSS(2of2)	433.8264373	0.666305011
ENSORLG00000015853	C3orf38	7.944718176	7.954930887
ENSORLG00000015962	NoName	2.608515109	0.275697208
ENSORLG00000016315	nr2f5	0.573181181	0.218088836
ENSORLG00000016388	hdac7b	0.10316856	0.294408365
ENSORLG00000016512	tfa	0.304786818	0.115967873
ENSORLG00000016536	nrip2	1.513368148	0
ENSORLG00000016606	rad23b(2of2)	147.4874046	163.2942271
ENSORLG00000016659	NoName	60.11056502	59.21085283
ENSORLG00000016707	si:dkey-88e18.8	0.307484047	0
ENSORLG00000016718	NoName	0.140860935	0
ENSORLG00000016741	msxe	13.32158684	5.26619254
ENSORLG00000016848	MEGF9	0.160276693	1.372127288
ENSORLG00000016853	NoName	0.074683689	0.142081417
ENSORLG00000016916	NoName	0.190760691	1.088733678
ENSORLG00000016942	gchfr	7.556345817	3.593878161
ENSORLG00000017060	nfe2l1a	2.240183114	1.339428933
ENSORLG00000017104	usp6nl	9.309851904	12.17662667
ENSORLG00000017108	agbl4	0.204386455	0.388833457
ENSORLG00000017231	ripk1l	23.24152171	23.616671
ENSORLG00000017248	myo3b	0.079613709	0.908762972
ENSORLG00000017362	fdft1	43.96356707	46.79315219
ENSORLG00000017883	clul1	1.531647064	0.647526736

ENSORLG00000018176	cntnap5a	6.263172901	0.490631057
ENSORLG00000018215	prkag3b	0.691620515	1.315768189
ENSORLG00000020923	NoName	0	0
ENSORLG00000021171	NoName	0	0
ENSORLG00000021310	Y_RNA	9.621885402	0
ENSORLG00000021579	SNORA62	0	0

Supplementary Table S2. RPKM (reads per kilobase of exon per million mapped reads) of the genes which have HNI specific HMDs in their promoters. RPKM in d-rR and in HNI are shown.

Gene ID	Gene name	RPKM in d-rR	RPKM in HNI
ENSORLG00000000055	slit1b	0.031586998	0
ENSORLG00000000313	lygl1	1.320650937	0
ENSORLG00000000403	si:ch211-240g9.1	0	0
ENSORLG00000000463	pygo2	25.1204917	32.27076178
ENSORLG00000000499	pitpnb	70.73322365	64.9042519
ENSORLG00000000540	INPP5A	3.648298215	2.168961625
ENSORLG00000000542	emilin1b	1.352613138	4.09816848
ENSORLG00000000548	VDAC3(1of2)	6.415972723	4.78667393
ENSORLG00000000758	hsps11(1of2)	0	0.444915205
ENSORLG00000000793	nde1	22.33122039	18.77193833
ENSORLG00000000801	nr2c2ap	53.54336948	89.87927308
ENSORLG00000000804	znf277	22.85680809	25.3819237
ENSORLG00000000905	rbfox3l	1.110452215	4.049095132
ENSORLG00000000950	NoName	0.481623527	0
ENSORLG00000001052	xylt1(1of2)	1.222893256	3.323548539
ENSORLG00000001152	NoName	7.049851623	4.3588794
ENSORLG00000001307	NoName	0	1.225726658
ENSORLG00000001446	ppiab	6.319886671	3.643400105
ENSORLG00000001510	NoName	4.323908995	8.225987792
ENSORLG00000001586	rel	12.75310237	11.4378201
ENSORLG00000001598	arhgap4b	1.921788354	5.071352924
ENSORLG00000001685	usp19	41.17915852	22.26883943
ENSORLG00000002023	AP3B2	4.046334367	0.167346045
ENSORLG00000002076	NoName	135.6203023	258.8627379
ENSORLG00000002212	nrm	1.430705182	5.443668391
ENSORLG00000002236	CLEC3B(1of2)	0.972879524	6.477965386
ENSORLG00000002298	NoName	0.098469587	0.561998154
ENSORLG00000002317	kcnh6a	0.162688884	0.077376557
ENSORLG00000002333	SLC39A3	42.53096315	119.7607046
ENSORLG00000002545	C2orf42	3.192523481	7.352242974
ENSORLG00000002571	rims1b	2.108588974	7.855793579
ENSORLG00000002997	fbp1b	0.368205034	7.705377547
ENSORLG00000003086	NoName	0.655382913	1.662437652
ENSORLG00000003099	hyal3	1.797467943	0.213723701
ENSORLG00000003156	lingo4a	0	0
ENSORLG00000003190	rasgrf2b	0.169451845	0.064474475
ENSORLG00000003346	C18orf8	16.38457282	19.25656947
ENSORLG00000003363	rhbdl3	0.38915181	0.246779634
ENSORLG00000003367	kcng3	0.220607602	0.419693255
ENSORLG00000003424	FIGN(1of2)	1.925223332	1.098787947
ENSORLG00000003657	NoName	0.753002728	1.146035451
ENSORLG00000003673	chd1l	5.764752834	6.63333278
ENSORLG00000003687	CSGALNACT1(1of2)	0.361665251	0.172011826
ENSORLG00000003722	PRSS23	0.245057815	0.466208376
ENSORLG00000003894	CELF2(1of2)	130.3021493	185.4955682
ENSORLG00000004195	ppih	119.2935607	119.6125776
ENSORLG00000004207	fam78bb	0	0
ENSORLG00000004237	lypd6	1.758216007	4.459872899
ENSORLG00000004268	rbfox2(1of2)	3.451092906	8.910328837
ENSORLG00000004398	XKR6(1of2)	0.515660525	0.490507223
ENSORLG00000004412	IFFO2	10.55063411	1.267703598
ENSORLG00000004415	BCAP29(1of2)	0.316212196	0.601575489
ENSORLG00000004671	grtp1a	36.27916661	30.50278993
ENSORLG00000004723	tyrp1b	0.084159128	0
ENSORLG00000004944	COLQ(1of2)	0	0.42385815

ENSORLG00000005044	amh	0.850088904	5.390817242
ENSORLG00000005065	inpp5kb	0.267437865	0.508785134
ENSORLG00000005450	HOMER3(1of2)	0.54656153	3.37935594
ENSORLG00000005497	nxnl2	0.309834243	4.126092602
ENSORLG00000005630	mcf2la	6.205554495	22.29967438
ENSORLG00000005778	ZBTB7C	1.057477743	2.377570582
ENSORLG00000005873	RFESD(1of2)	12.91167269	14.85247796
ENSORLG00000005927	NoName	688.5746027	205.555705
ENSORLG00000005990	zcchc8	65.39912355	49.35592675
ENSORLG00000006014	TCTN3	17.04663358	13.7904285
ENSORLG00000006079	slc22a6l	0.084500248	3.858164511
ENSORLG00000006354	ggact.2	12.07937664	32.29666348
ENSORLG00000006450	shbg	0.300683919	1.14406767
ENSORLG00000006454	cyp4f3	2.916756793	14.14090261
ENSORLG00000006547	neur11b	3.087021566	10.49999884
ENSORLG00000007057	naa10	141.9276988	168.1562443
ENSORLG00000007325	ppp1r16a	32.73951094	19.31318873
ENSORLG00000007367	rnf13	20.02412675	49.24442993
ENSORLG00000007539	padi2(2of2)	5.159561737	8.621959254
ENSORLG00000007547	SVEP1	2.1389359	4.350719483
ENSORLG00000007762	fbxw7	23.25288972	39.32202955
ENSORLG00000007768	lgals3bpa	11.06853251	1.045395167
ENSORLG00000008091	MYO1E	24.61361865	47.56573876
ENSORLG00000008516	gpr31(1of2)	0.294811977	0.280431402
ENSORLG00000008863	gng2	3.378053903	0
ENSORLG00000009012	mapk12b	4.154645654	6.668978092
ENSORLG00000009111	TGFB3(1of2)	0.095380345	0.181455613
ENSORLG00000009155	si:dkey-266m15.5	10.92214019	22.79889808
ENSORLG00000009179	fuom	14.1224447	16.71733003
ENSORLG00000009218	TIMP3	4.525021042	27.11706441
ENSORLG00000009234	si:ch211-161h7.8	182.6892189	195.1739303
ENSORLG00000009473	ZC3H12A(1of2)	4.736866596	11.95772102
ENSORLG00000009487	cx39.9	0.408772909	0.259222304
ENSORLG00000009655	NoName	35.23722178	41.0797805
ENSORLG00000009687	tnk2b	0.397996169	7.235130171
ENSORLG00000009931	tbcela	8.494997922	7.888226339
ENSORLG00000010093	si:dkey-19e4.5	28.84256704	17.8059258
ENSORLG00000010300	P2RY2	0.129257687	0.245905304
ENSORLG00000010320	NoName	0	0
ENSORLG00000010446	NoName	0.183793361	0
ENSORLG00000010709	si:ch73-127m5.1	0.192268681	0
ENSORLG00000010726	mmp17b	0.957558587	0.182170005
ENSORLG00000010745	trdn	0	0
ENSORLG00000010844	fam83fb	0.327568863	1.246361787
ENSORLG00000010994	kif19	7.879693768	23.48537281
ENSORLG00000011034	gpr186	0.440881959	0.279584177
ENSORLG00000011206	dachd	1.389827891	1.194095002
ENSORLG00000011305	NoName	22.48140522	83.28812639
ENSORLG00000011393	cln5	6.726871591	18.8044688
ENSORLG00000011512	cacng6b	0.377085087	3.586913281
ENSORLG00000011532	syt14b	0.439025056	0.167043976
ENSORLG00000011726	camkk1a	8.254068359	16.33100517
ENSORLG00000011875	SSC4D	0.850088904	1.976632989
ENSORLG00000011907	hhatla	1.794980671	0.853711833
ENSORLG00000012181	NoName	0.156076929	0
ENSORLG00000012186	NoName	0	0
ENSORLG00000012428	NoName	48.72058088	61.64632977
ENSORLG00000012482	FHL2(2of2)	0.164708723	0
ENSORLG00000012690	NoName	17.69649046	21.46852701

ENSORLG00000012714	grin2aa	0.497454833	2.974334519
ENSORLG00000012758	bcl2l10	44.56839981	79.91158072
ENSORLG00000012858	MAT1A(2of2)	1.214075945	2.30970955
ENSORLG00000012895	slc2a6	0.271585475	0.172225241
ENSORLG00000013093	C1orf116	1.209619302	2.958725627
ENSORLG00000013122	pltp	1.083165462	15.54861559
ENSORLG00000013190	C9orf172(1of2)	0.417097331	0.297563867
ENSORLG00000013258	TMEM229A	0.582562589	1.662437652
ENSORLG00000013293	NoName	0.26875125	0
ENSORLG00000013536	myh11a	1.991992959	3.321793604
ENSORLG00000013703	C17orf85	27.8850819	37.28219387
ENSORLG00000013751	fundc1	86.61766084	55.52541759
ENSORLG00000014110	lgi3	0.498912576	0
ENSORLG00000014204	ldlrap1a	2.434734992	11.0008648
ENSORLG00000014434	lrrc3	0	0
ENSORLG00000014485	HEPACAM(2of2)	0.564897788	0
ENSORLG00000014564	PDPR	16.47703185	31.54626386
ENSORLG00000014584	ggt5a	0.513844819	1.466340253
ENSORLG00000014639	CCDC134	6.002873658	12.60151321
ENSORLG00000014694	NoName	0	1.301376975
ENSORLG00000014855	has3	3.305078522	9.512194071
ENSORLG00000015086	kcnj1b	1.504452872	0.238511244
ENSORLG00000015155	rev3l	20.22556615	34.4790361
ENSORLG00000015474	tldc1	52.2079903	41.96475455
ENSORLG00000015577	anapc13	47.67812107	14.03169398
ENSORLG00000015735	cbln11	0	0
ENSORLG00000015785	FAM177B	0	1.252453028
ENSORLG00000015895	SPTBN1(2of3)	0.364374354	0
ENSORLG00000015981	myl1	0	3.439074288
ENSORLG00000016178	kcng1	0.379290263	0.901972346
ENSORLG00000016228	pusl1	5.514869394	2.152147969
ENSORLG00000016234	zdhhc22	0.357238503	0.339812837
ENSORLG00000016244	paqr6	0.55193619	1.470037531
ENSORLG00000016454	cnot2	32.54788901	45.5098639
ENSORLG00000016609	AMDHD1	1.433949412	2.098466273
ENSORLG00000016638	gpr55a	0.28698511	0
ENSORLG00000016750	NoName	9.700472692	1.347050403
ENSORLG00000016871	zgc:194887	0.21911701	3.334859915
ENSORLG00000016897	C2CD4C(2of2)	0.136257636	0
ENSORLG00000017095	C15orf52	0.694913946	1.322033752
ENSORLG00000017219	NoName	1.393340515	1.637227983
ENSORLG00000017301	tspan4b	0.155412065	0
ENSORLG00000017367	KCNMB4	0.461080343	8.333198533
ENSORLG00000017368	NoName	49.24615466	35.46808056
ENSORLG00000017415	matk	0.222118613	0
ENSORLG00000017918	ackr4a	1.434540853	0.496205698
ENSORLG00000018069	chga	1.496147533	0.437897615
ENSORLG00000018199	ahr1b	0.079744223	0.151708791
ENSORLG00000021061	NoName	0	0
ENSORLG00000021195	NoName	0	0
ENSORLG00000021244	NoName	0	0
ENSORLG00000021563	SNORA62	0	0

Supplementary Table S3. List of transcription factors which could bind to top 20 selected 6-mers with CpG or without CpGs.

	6mer	matched known motifs (q value < 0.1)
top20 selected 6-mers with CpGs	CGCGAC	
	GCGCGA	
	CGCGCG	Zfp161,E2F2,E2F3
	TCGCGA	ZBTB33
	CGCGGA	
	CGCGAG	ZBTB33
	CCGCGG	
	CCGCGC	Zfp161
	CGCTAG	
	TCCGGA	Spdef
	CACGTG	Mycn,Arnt,MYC::MAX,Max,Bhlhb2,Bhlhe40,USF1,Myc,HIF1A::ARNT,USF2
	ACCGGA	Gabpa
	CCGGAG	
	TCCGAA	
	CCGGAA	Gabpa,ELK4,ELK1,Ehf
	CGGGCC	E2F3,E2F2,Zfp161
	ATCCGG	Spdef
	CGCGCA	Zfp161
	CGGGGC	
	GCGCGC	E2F2,E2F3,Zfp161
GCTAGC		
GCTAAC		
AGCTAG		
CTTACC		
GGTCAC	ESRRA,PPARG,Rara,NR4A2,ESR1,USF1,Nr2f2,USF2,ESR2	
GGCCAC		
GACCCC	Glis2,Hnf4a,Esrra,Rxra,Zfp281,Rara,	
GGTCCA		
CCATGC		
top20 selected 6-mers without CpGs	GGGATA	
	TAGCTA	
	GGTACC	Plagl1
	CTTGCC	
	ACTTCC	ELF1,Gabpa,Spi1,Erg,FLI1,Sfpi1,Ehf,ELK4,Ets1,Ehf,ELF5,FEV,Elf3,
	GGCACC	
	AGGTAA	
	AAGGTA	
	GCATAC	
	GGATCC	
	GGGGGA	Obox2,Pitx3,Obox3,Zfp740,MZF1,Zfp281