



Supplemental Material to:

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**Aberrant DNA methylation profiles in the premature aging
disorders Hutchinson-Gilford Progeria
and Werner Syndrome**

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Supplementary table 1:

144 consistent dmCpG sites in AG07896/AG11385 and natural aged samples.

TargetID	Chr.	Position	Gene symbol	Location	CpG context
cg09668627	1	1371844	VWA1	Body	Island shore
cg02136596	1	1384930	ATAD3C	Promoter	
cg07312051	1	15656086	FHAD1	Body	
cg17278062	1	17732728			Island shore
cg00352106	1	39864197	MACF1	Body	
cg25369262	1	46649132	TSPAN1	Body	
cg07107453	1	79114976	IFI44	Promoter	
cg21863110	1	116380417	NHLH2	3'UTR	Island
cg25216580	1	120173989	ZNF697	Promoter	
cg00791854	1	154392070	IL6R	Body	
cg17166812	1	161169574	NDUFS2;ADAMTS4	Promoter;Promoter	Island shelf
cg17936236	1	167520305	CREG1	Body	Island shelf
cg21110645	1	207815933			Island shelf
cg01012879	1	244613363	ADSS	Body	Island shore
cg13973086	2	469105			Island shore
cg09074113	2	20870087	GDF7	Body	Island
cg06108254	2	72830705	EXOC6B	Body	
cg22880770	2	97166341	NEURL3	Body	Island
cg11916609	2	102927488	IL1RL1	Promoter	
cg20608990	2	202097607	CASP8	Promoter	
cg15335768	2	218268053	DIRC3	Body	
cg04731861	2	219085781	ARPC2	Body	Island shelf
cg04621728	2	234934131			
cg16967583	2	241807859	AGXT	Promoter	
cg08003402	3	15311021	SH3BP5	Body	
cg12934382	3	51741135	GRM2	Promoter	Island
cg02331649	3	52926322	TMEM110	Body	
cg13679804	3	59734950			
cg20037507	3	62363248			Island shore
cg18746336	3	128216122			Island
cg00355829	3	128326679			Island shore
cg15467503	4	1727234	TACC3	Body	Island shelf
cg00076653	4	15341878	C1QTNF7	Body	
cg26689483	4	17513197	QDPR	Body	Island shore
cg19676182	4	24981695	CCDC149	Promoter	
cg09168222	4	89299733	HERC6	Promoter	Island shore
cg08736088	4	147866520	TTC29	Promoter	Island shore
cg24894783	5	10577031	ANKRD33B	Body	
cg09017434	5	16179660	MARCH11	Promoter	Island
cg03873281	5	131608955	PDLIM4	3'UTR	Island shore
cg17781669	5	149868359			Island shelf
cg02727079	6	17986167	KIF13A	Body	Island shore
cg14417687	6	30042260	RNF39	Body	Island shore
cg17091577	6	30854233	DDR1	Promoter	Island shore
cg00244776	6	30883192	VAR52	Body	Island shore
cg04665604	6	31696852	DDAH2	Body	Island
cg12988118	6	31744524	C6orf27	Body	
cg22986222	6	32095276	ATF6B	Body	Island shelf
cg26069291	6	42716310			Island shore
cg22774605	6	47247047	TNFRSF21	Body	
cg24690314	6	144018564	PHACTR2	Body	
cg12419863	6	144263450	PLAGL1	Body	
cg09595020	7	2654120	IQCE	3'UTR	
cg10822172	7	28338757	CREB5	Promoter	

cg15626881	7	33923464			
cg02060682	7	36190724			Island shore
cg19759064	7	56160687	PHKG1	Promoter	
cg15893346	7	65447565	GUSB	Promoter	Island shore
cg09748749	7	65540429	ASL	Promoter	Island shore
cg14667235	7	76026648	ZP3;SRCRB4D	Promoter;Body	Island shore
cg14823389	7	101398152			
cg11961845	7	129008179	AHCYL2	Promoter	
cg19073171	7	154793806	PAXIP1;LOC202781	Body;Promoter	Island shore
cg23109344	8	496440	C8orf42	Promoter	Island shore
cg26122129	8	30241119	RBPMS	Promoter	Island shore
cg19496364	8	94551463			
cg11057205	8	134588243			Island shelf
cg13707760	9	95986383	WNK2	Body	
cg10394788	9	124360547	DAB2IP	Body	Island
cg26581729	9	139939792	NPDC1	Body	Island
cg24381155	10	103289745	BTRC	Body	
cg23901918	10	105420747	SH3PXD2A	Body	Island
cg01213599	10	126704259	CTBP2	Body	
cg22891191	10	129706234	PTPRE	Promoter	Island
cg05895618	11	19222395	CSRP3	Promoter	
cg08214808	11	45922166	MAPK8IP1	Body	Island
cg04465784	11	67976953	SUV420H1	Promoter	Island shelf
cg04265051	11	68079686	LRP5	Promoter	Island shore
cg11155924	11	70449258	SHANK2	Body	
cg00242341	11	72447419	ARAP1	Promoter	
cg07101980	11	77780019	NDUFC2	3'UTR	
cg01314044	11	94246036			Island shore
cg14242895	11	118393450	MLL	3'UTR	
cg16983588	11	129793108	PRDM10	Body	
cg12409074	11	129870648	PRDM10	Promoter	Island shore
cg08799922	12	7245030	C1R	Promoter	
cg27117982	12	16500077	MGST1	Promoter	
cg27651238	12	52644264			Island
cg16726039	12	133413162			Island
cg09337121	14	23769999	PPP1R3E	Body	Island shore
cg07176842	14	43972223			
cg25576997	14	56257750	C14orf34	Body	
cg18186343	14	101317620	MIR770;MEG3	Promoter;Body	
cg03039990	14	101317622	MIR770;MEG3	Promoter;Body	
cg18580117	15	42787236	SNAP23	Promoter	Island shelf
cg06687489	15	52587077	MYO5C	Body	Island shore
cg24665265	15	70852115			
cg11442608	15	81456832			
cg09763373	16	596899	SOLH	Body	Island shore
cg05638439	16	711235	WDR90	Body	Island
cg09308553	16	56763573	NUP93	Promoter	Island shore
cg03746976	16	58035805	C16orf57	Body	Island shore
cg05969150	16	72882495	ZFH3	Body	
cg11801411	17	1628727	WDR81	Body	Island
cg03613822	17	7115140	DLG4	Body	Island shelf
cg01538166	17	17743987			Island
cg13895343	17	26708773	SARM1	Body	Island
cg04193015	17	35596680	ACACA	Body	
cg20629183	17	41985830	MPP2	Promoter	Island shore
cg19057899	17	47093955	IGF2BP1	Body	Island shore
cg22892904	17	77751089	CBX2	Promoter	Island shore
cg19761273	17	80232096	CSNK1D	Promoter	Island shore
cg24914483	18	2653997			Island shore

cg20916427	18	44627440	KATNAL2	3'UTR	
cg24304425	19	840985	PRTN3	Promoter	Island shelf
cg26316885	19	10407317	ICAM5	3'UTR	Island
cg18745507	19	10415557	ZGLP1	3'UTR	
cg11453058	19	14064176	PODNL1	Promoter	Island shore
cg08196968	19	38746749	PPP1R14A	Body	Island
cg25734726	19	40948296	SERTAD3	Promoter	Island shore
cg22891070	19	46801642	HIF3A	Body	Island shore
cg16672562	19	46801672	HIF3A	Promoter	Island shore
cg16617301	19	46999109	PNMAL2	Promoter	Island
cg23314866	19	48016020	NAPA	Body	Island shore
cg00822241	19	49201468	FUT2	Promoter	Island shore
cg05925291	19	54617809	PRPF31;TFPT	Promoter;Body	Island shore
cg24263062	20	2730191	EBF4	Body	Island
cg24165121	20	23398291	NAPB	Body	Island shelf
cg01260366	20	32307172	PXMP4	Body	Island shore
cg19811118	20	43160245	PKIG	Promoter	Island shore
cg00340958	20	48328658	B4GALT5	Body	Island shore
cg06260709	20	48626621			Island
cg11074047	20	50157455	NFATC2	Body	Island shore
cg11853697	20	60510235	CDH4	Body	Island shore
cg11726250	20	61924405	COL20A1	Promoter	Island shelf
cg22138735	20	62679713	SOX18	Body	Island
cg24753998	21	30452964	C21orf7	Promoter	
cg16057826	21	36041334	CLIC6	Promoter	Island
cg26390598	21	41032396	B3GALT5	Promoter	
cg00546897	21	45232232	LOC284837	Body	
cg13762691	22	17956560	CECR2	Promoter	
cg06942979	22	31501382	SELM	Body	Island shore
cg01264106	22	38071602	LGALS1	Promoter	Island shore
cg19582200	22	43602629	SCUBE1	Body	Island shelf

Supplementary table 2:

485 consistent dmCpG sites in AG19911 and natural aged samples.

TargetID	Chr.	Position	Gene symbol	Location	CpG context
cg09668627	1	1371844	VWA1	Body	Island shore
cg02136596	1	1384930	ATAD3C	Promoter	
cg12639453	1	2035780	PRKCZ	Promoter	Island shelf
cg01101873	1	3269478	PRDM16	Body	
cg01556552	1	10695686			Island shelf
cg25978218	1	15738732	EFHD2	Body	Island shore
cg17670191	1	17026406	ESPNP	Body	Island
cg17278062	1	17732728			Island shore
cg26561681	1	21376633	EIF4G3	Promoter	
cg19743168	1	23544995			Island shore
cg25187161	1	29510025	SFRS4	Promoter	Island shore
cg19412669	1	36839270	STK40	Promoter	
cg12634306	1	40098811	HEYL	Body	
cg21862529	1	41948212	EDN2	Body	
cg09160123	1	41981735	HIVEP3	Body	Island shore
cg26038582	1	42384390	HIVEP3	Promoter	Island shore
cg15937073	1	42384564	HIVEP3	Promoter	Island shore
cg12081325	1	45413279	EIF2B3	Body	
cg27532171	1	46952054			Island shore
cg21536783	1	59041407	TACSTD2	3'UTR	Island shore
cg27427318	1	61509328			Island shore
cg16991569	1	63142359	DOCK7	Body	
cg08110488	1	82136224			
cg14378231	1	98404032			
cg24681307	1	110526191	AHCYL1	Promoter	Island shore
cg25674286	1	112046915	ADORA3	Body	
cg21863110	1	116380417	NHLH2	3'UTR	Island
cg01974375	1	151298954	PI4KB	Promoter	Island shore
cg20324858	1	154529936	UBE2Q1	Body	Island shore
cg13795986	1	155880507	RIT1	Body	
cg09796170	1	156548174	TTC24	Promoter	
cg07349663	1	160261619	COPA	Body	
cg11578532	1	161008127	TSTD1	Body	Island shore
cg17166812	1	161169574	NDUFS2;ADAMTS4	Promoter;Promoter	Island shelf
cg07580762	1	161171810	NDUFS2	Promoter	Island
cg21691116	1	161171819	NDUFS2	Promoter	Island
cg11155784	1	164572163	PBX1	Body	
cg14748380	1	179713788	FAM163A	Promoter	Island
cg24460126	1	179713828	FAM163A	Promoter	Island
cg25408950	1	198290080	NEK7	3'UTR	
cg14780255	1	201720358	NAV1	Body	
cg02769705	1	202975059	TMEM183B	Promoter	Island shore
cg19081101	1	203156625	CHI3L1	Promoter	
cg05721773	1	207083336	FAIM3	Body	Island shore
cg21110645	1	207815933			Island shelf
cg22787719	1	209570949			
cg07168232	1	209822928	LAMB3	Body	
cg15134583	1	224015075	TP53BP2	Body	
cg11145399	1	224034478	TP53BP2	Promoter	Island shore
cg04193160	1	228400419	OBSCN	Body	Island
cg24070990	1	228634724			Island shore
cg16516400	1	231177201	FAM89A	Promoter	Island shore
cg09548403	1	232840764			
cg09823288	1	239552128			Island shore

cg25683662	1	245771036	KIF26B	Body	
cg14830002	1	247616686	OR2B11	Promoter	Island shore
cg23230830	1	248903100	LOC646627	Promoter	
cg13973086	2	469105			Island shore
cg08398132	2	8557381			
cg10646145	2	9235600			
cg22495058	2	11752373	GREB1	Body	Island shore
cg00484122	2	20579065			
cg09074113	2	20870087	GDF7	Body	Island
cg25101396	2	27346296	ABHD1	Promoter	Island shore
cg07858848	2	43087177			
cg19275978	2	60983087	PAPOLG	Promoter	Island shore
cg10855531	2	62702472			
cg21852792	2	71678463			Island shelf
cg06108254	2	72830705	EXOC6B	Body	
cg13391675	2	80009927	CTNNA2	Body	
cg10203483	2	85646239			Island shore
cg22880770	2	97166341	NEURL3	Body	Island
cg18145105	2	97166422	NEURL3	Body	Island
cg11916609	2	102927488	IL1RL1	Promoter	
cg18145759	2	109901466	SH3RF3	Body	
cg06021088	2	127822551	BIN1	Body	
cg13700939	2	128166166			Island
cg07143462	2	157289513			Island shelf
cg00760729	2	161236088	RBMS1	Body	
cg15739581	2	166626783	GALNT3	Body	
cg23808213	2	166948291			
cg00883212	2	173795201	RAPGEF4	Body	
cg16164923	2	197504013	CCDC150	Promoter	Island shore
cg11608958	2	207836769			
cg02577773	2	208027870	KLF7	Body	Island shelf
cg15335768	2	218268053	DIRC3	Body	
cg04731861	2	219085781	ARPC2	Body	Island shelf
cg19701828	2	219235515			Island shelf
cg21566642	2	233284661			Island
cg04621728	2	234934131			
cg12157614	2	236890427	AGAP1	Body	
cg20513777	2	238533299			Island shelf
cg05758467	2	240035894	HDAC4	Body	Island shelf
cg16967583	2	241807859	AGXT	Promoter	
cg24371033	2	241807924	AGXT	Promoter	
cg00085013	3	14871570	FGD5	Body	
cg26792295	3	16540091	RFTN1	Promoter	
cg23715029	3	42201568	TRAK1	Body	
cg24595152	3	43733831	ABHD5	Body	Island shore
cg08033130	3	45983597	CXCR6;FYCO1	Promoter;Body	
cg13719901	3	46608139	LRRC2	Promoter	Island shore
cg00906812	3	47018657	CCDC12	Promoter	Island shore
cg25021247	3	49460162	AMT	Promoter	
cg00664406	3	51740875	GRM2	Promoter	Island
cg12934382	3	51741135	GRM2	Promoter	Island
cg00303541	3	51741280	GRM2	Promoter	Island
cg02331649	3	52926322	TMEM110	Body	
cg13679804	3	59734950			
cg20037507	3	62363248			Island shore
cg08173709	3	71103443	FOXP1	Body	
cg23333146	3	71731211	EIF4E3	3'UTR	
cg26108120	3	72440793	RYBP	Body	
cg25338134	3	72940510	GXYLT2	Body	

cg24969820	3	98497864	ST3GAL6	Body	
cg20267101	3	113006232	BOC;WDR52	3'UTR;3'UTR	
cg24954207	3	128217091			Island shore
cg07593390	3	136714183	IL20RB	Body	
cg23466339	3	138066434	MRAS	Promoter	Island shore
cg21552014	3	146026497			
cg06800962	3	149096029	TM4SF1	Promoter	
cg24474182	3	151047307	MED12L;P2RY13	Body;Promoter	
cg06168950	3	154737057			
cg04481170	3	158445995	RARRES1	Body	Island shelf
cg18123677	3	167454339	SERPINI1	Promoter	Island shore
cg09696560	3	185178617	MAP3K13	Body	
cg08179817	4	4335184			
cg16760587	4	17517594	CLRN2	Body	Island shelf
cg17173896	4	24975754	CCDC149	Promoter	
cg19676182	4	24981695	CCDC149	Promoter	
cg17688837	4	25090665			Island shore
cg02170478	4	55100995	PDGFRA	Promoter	Island shore
cg24918767	4	88297189	HSD17B11	Body	
cg00382138	4	110723299	CFI	Promoter	
cg13056653	4	141538969			
cg03476007	4	143768727	INPP4B	Promoter	Island shore
cg08736088	4	147866520	TTC29	Promoter	Island shore
cg20818457	4	154179401	TRIM2	Body	
cg03065175	4	155661758			Island
cg02140579	4	159091837	FAM198B	Body	
cg04399899	4	160189254	RAPGEF2	Promoter	
cg02525719	4	183728549			Island shore
cg20639618	4	183729073			Island
cg21633052	4	184018637	C4orf38	Body	Island shore
cg09017434	5	16179660	MARCH11	Promoter	Island
cg16578742	5	35617687	SPEF2	Promoter	Island shore
cg24539599	5	112824920	MCC	Promoter	Island shore
cg26811372	5	140772182	PCDHGA4 cluster	Body	Island shore
cg06677890	5	149887486	NDST1	Promoter	
cg22594985	5	153457958			
cg13954457	5	167956819	FBLL1	Body	Island
cg23476877	5	176543964			Island
cg01287088	5	176827392	PFN3	Promoter	Island
cg06033531	5	176980153	FAM193B	Promoter	Island shore
cg00549219	5	177370476			Island shore
cg21010202	6	1615843			Island
cg27095915	6	1624442	GMDS	Body	Island
cg12662084	6	17809126	KIF13A	Body	
cg03089870	6	17988960	KIF13A	Promoter	Island shore
cg09248660	6	24969848			
cg25583651	6	29570040	GABBR1	3'UTR	
cg27342919	6	30079256	TRIM31	Body	
cg21809927	6	30079265	TRIM31	Body	
cg08222513	6	30079280	TRIM31	Body	
cg02049405	6	30095265			Island
cg15978899	6	30882994	VAR52	Body	Island shore
cg00244776	6	30883192	VAR52	Body	Island shore
cg06151074	6	31669888	BAT5	Body	Island shore
cg06928741	6	31691430	C6orf25	Body	Island
cg05667097	6	31691481	C6orf25	Body	Island
cg04665604	6	31696852	DDAH2	Body	Island
cg25264948	6	31734232	C6orf27	Body	
cg23526676	6	31734458	C6orf27	Body	

cg15501231	6	31737630	C6orf27	Body	
cg12988118	6	31744524	C6orf27	Body	
cg19577206	6	31866825	EHMT2	Promoter	Island shore
cg22986222	6	32095276	ATF6B	Body	Island shelf
cg09713850	6	32921791	HLA-DMA	Promoter	
cg12397463	6	33128825			Island shore
cg07715777	6	33128963			Island shore
cg22273555	6	33130034			Island shore
cg11920449	6	36645608	CDKN1A	Promoter	Island shore
cg08784966	6	37248768	TBC1D22B	Body	
cg07188523	6	44528793			
cg01946401	6	45296101	SUPT3H;RUNX2	Promoter;Promoter	
cg23261343	6	45413792	RUNX2	Body	
cg22774605	6	47247047	TNFRSF21	Body	
cg19607845	6	52934457	FBXO9	Body	Island shelf
cg22322277	6	75459158			
cg25015371	6	108874950			Island shelf
cg14289461	6	112575929	LAMA4	Promoter	Island shore
cg14575356	6	130013903	ARHGAP18	Body	
cg24964103	6	133035379	VNN1	Promoter	
cg06899237	6	153353519	RGS17	Body	
cg07223240	6	170468271			
cg04633141	7	1588319	TMEM184A	Body	Island shore
cg09595020	7	2654120	IQCE	3'UTR	
cg18446336	7	2847575	GNA12	Body	
cg08090407	7	7139271			
cg04089901	7	7557590	COL28A1	Body	
cg27380915	7	12796513			
cg24350771	7	18329602			
cg12510708	7	26193805	NFE2L3	Body	Island shore
cg04027736	7	27143403	HOXA2	Promoter	Island
cg20704555	7	28127748	JAZF1	Body	
cg23418219	7	28338684	CREB5	Promoter	
cg02506717	7	28338790	CREB5	Promoter	
cg15626881	7	33923464			
cg24497732	7	42278077	GLI3	Promoter	Island shore
cg07488141	7	47560215	TNS3	Promoter	
cg19759064	7	56160687	PHKG1	Promoter	
cg08370546	7	56160770	PHKG1	Promoter	
cg21940640	7	56160893	PHKG1	Promoter	
cg15893346	7	65447565	GUSB	Promoter	Island shore
cg09748749	7	65540429	ASL	Promoter	Island shore
cg03193328	7	65746852	TPST1	Body	
cg22455527	7	73241878			Island shelf
cg12856114	7	73242028			Island shelf
cg14667235	7	76026648	ZP3;SRCRB4D	Promoter;Body	Island shore
cg26688582	7	91477554			
cg20782117	7	95865631	SLC25A13	Body	
cg14398883	7	101398184			
cg24707573	7	101961796	SH2B2	Body	Island
cg11752788	7	123438230			
cg16248756	7	127795594			
cg11961845	7	129008179	AHCYL2	Promoter	
cg22057675	7	140103545	RAB19	Promoter	
cg01106572	7	150744384	ACCN3ABCB8	Promoter	Island shore
cg12538435	7	150801757	AGAP3	Body	
cg01058360	7	151442371	PRKAG2	Body	
cg05809437	8	1450031	DLGAP2	Promoter	
cg20305578	8	1908301			

cg12036735	8	20169916			
cg26122129	8	30241119	RBPMS	Promoter	Island shore
cg10327067	8	37549202			Island shelf
cg19695041	8	38615330	TACC1	Promoter	Island shore
cg01632240	8	42009223	AP3M2	Promoter	Island shore
cg17292662	8	54758936			Island shelf
cg19678968	8	59185164			
cg19496364	8	94551463			
cg11057205	8	134588243			Island shelf
cg24107665	8	144372932	ZNF696	Promoter	Island
cg07013148	8	146233339			
cg07158339	9	71650237	FXN	Promoter	Island shore
cg16509045	9	77502963	TRPM6	Promoter	Island shore
cg14438325	9	124023910			
cg10394788	9	124360547	DAB2IP	Body	Island
cg17930194	9	124982834	LHX6	Body	Island
cg00300627	9	132646360			Island shore
cg13754665	9	136654631	VAV2	Body	
cg14243817	9	138876879			Island shelf
cg14126392	9	138985942	NACC2	Promoter	Island
cg21120249	9	139921971	C9orf139;ABCA2	Promoter;Body	Island shore
cg13579295	9	140069745	ANAPC2	Body	Island shore
cg13274149	9	140175393	C9orf167	3'UTR	Island
cg03383434	9	140318662	EXD3;NOXA1	Promoter;Body	Island
cg13811936	9	141017001	CACNA1B	3'UTR	Island shelf
cg09877009	10	6605133	PRKCQ	Promoter	
cg15835339	10	10828105	SFTA1P	Body	
cg01283625	10	13568099			Island shelf
cg17078883	10	28759936			
cg19307545	10	35028929	PARD3	Body	
cg12479507	10	57390047			Island shore
cg20283498	10	73387917	CDH23	Body	
cg18786171	10	75935758	ADK	Body	Island shore
cg05552874	10	91153143	IFIT1	Body	
cg07225966	10	94820376	CYP26C1	Promoter	Island
cg15903032	10	101297605			Island
cg24381155	10	103289745	BTRC	Body	
cg05042708	10	105212813	CALHM2	Promoter	Island shore
cg23901918	10	105420747	SH3PXD2A	Body	Island
cg05329352	10	112838983	ADRA2A	Promoter	Island
cg01213599	10	126704259	CTBP2	Body	
cg14479798	10	129533998			Island shore
cg22891191	10	129706234	PTPRE	Promoter	Island
cg07986469	10	129795003	PTPRE	Promoter	
cg15281331	10	133879497			Island shore
cg24427660	11	818892	PNPLA2	Promoter	Island shore
cg15232290	11	1785683	CTSD;HCCA2	Promoter;Promoter	Island shore
cg20973931	11	1785695	CTSD;HCCA2	Promoter;Promoter	Island shore
cg05586607	11	1965447			Island shelf
cg17611235	11	1991188			Island
cg03306615	11	2292890	ASCL2	Promoter	Island
cg13059136	11	2986541	SNORA54;NAP1L4	Promoter;Body	
cg21052766	11	20134289	NAV2	Body	
cg13837679	11	44329915	ALX4	Body	Island shore
cg13809236	11	45908036	MAPK8IP1	Body	Island shore
cg08214808	11	45922166	MAPK8IP1	Body	Island
cg00187686	11	59634218	TCN1	Promoter	
cg14328641	11	59822727	MS4A3	Promoter	
cg03559942	11	62521055	ZBTB3	Body	Island shore

cg20705781	11	67070238	SSH3	Promoter	Island shore
cg06518251	11	67776030	ALDH3B1	Promoter	
cg04465784	11	67976953	SUV420H1	Promoter	Island shelf
cg04265051	11	68079686	LRP5	Promoter	Island shore
cg11194613	11	70268728	CTTN	Body	
cg11155924	11	70449258	SHANK2	Body	
cg10010533	11	82445170	FAM181B	Promoter	Island shore
cg02175321	11	103930844	PDGFD	Body	
cg22033281	11	111325754			
cg03962678	11	118398094	TTC36	Promoter	Island shelf
cg26878709	11	120197138	TMEM136	Promoter	Island shore
cg10647465	11	126582242	KIRREL3	Body	
cg16983588	11	129793108	PRDM10	Body	
cg12409074	11	129870648	PRDM10	Promoter	Island shore
cg01692842	11	134126364	ACAD8	Body	Island shelf
cg16728539	12	2451169	CACNA1C	Body	
cg18173184	12	6718378			Island shore
cg05060607	12	8211391	C3AR1	Body	
cg22916586	12	12686957	DUSP16	Promoter	
cg11905611	12	14720974	PLBD1	Promoter	Island
cg22221831	12	15039397	MGP	Promoter	
cg17817168	12	22486454	ST8SIA1	Body	Island shore
cg13594630	12	32108895			Island shelf
cg00832457	12	32287236	BICD1	Body	
cg05190176	12	48290002	VDR	Promoter	
cg27651238	12	52644264			Island
cg11848173	12	56121015	CD63	Body	Island shore
cg00293940	12	60044871			
cg12707346	12	64960957			
cg20922821	12	94070578	CRADD	Promoter	Island shore
cg26537335	12	105136339	CHST11	Body	
cg14829814	12	108294894			Island shelf
cg06196801	12	121164025	ACADS	Body	Island shore
cg07529210	12	122019110	KDM2B	Promoter	Island shore
cg23060047	12	130819504			Island shelf
cg13315047	12	131261143			
cg16726039	12	133413162			Island
cg11845168	13	21457096	XPO4	Body	
cg05830425	13	21654356			
cg15234627	13	33837178	STARD13	Body	
cg03278564	13	49200201			
cg12861503	13	52734071	NEK3	Promoter	Island shore
cg18535410	13	113793268	F10	Body	
cg09337121	14	23769999	PPP1R3E	Body	Island shore
cg07176842	14	43972223			
cg25576997	14	56257750	C14orf34	Body	
cg24025255	14	69617774	DCAF5	Body	Island shore
cg12848614	14	70193496			Island
cg06992688	14	94491958	OTUB2	Promoter	Island shore
cg01022345	14	101317819	MIR770;MEG3	Promoter;Body	
cg05873568	14	105155145	INF2	Promoter	Island shore
cg02392882	15	29031879			Island shore
cg04870120	15	32999748			
cg15175581	15	33360262	FMN1	Promoter	
cg09347959	15	33360271	FMN1	Promoter	
cg07047589	15	40642998	PHGR1	Promoter	
cg18580117	15	42787236	SNAP23	Promoter	Island shelf
cg05061769	15	59700360			
cg24665265	15	70852115			

cg06856840	15	80446451	FAH	Body	
cg22812413	15	81391742			
cg11442608	15	81456832			
cg00525011	16	122031	RHBDF1	Promoter	Island
cg03363565	16	474528	RAB11FIP3	Promoter	Island shore
cg09408143	16	524778	RAB11FIP3	Body	
cg09763373	16	596899	SOLH	Body	Island shore
cg05638439	16	711235	WDR90	Body	Island
cg03829194	16	875571			Island
cg08190844	16	2526203	TBC1D24	Promoter	Island shore
cg01215511	16	2975552	FLYWCH1	Promoter	
cg10111352	16	16082095	ABCC1	Body	
cg01157559	16	29166162			Island shelf
cg26843872	16	30368792	TBC1D10B	3'UTR	Island shelf
cg03042477	16	31472055	ARMC5	Body	Island shore
cg26929700	16	49732567	ZNF423	Body	Island
cg00921350	16	50701499	SNX20	3'UTR	
cg07280206	16	56554249	BBS2	Promoter	Island shore
cg01932823	16	57701726	GPR97	Promoter	
cg02078525	16	66400395	CDH5	Promoter	
cg00401972	16	66400404	CDH5	Promoter	
cg05976840	16	67189804	TRADD	Body	Island shore
cg12654412	16	71459826			Island
cg05969150	16	72882495	ZFH3	Body	
cg05915866	16	73090838	ZFH3	Promoter	Island shore
cg27466129	16	85060822	KIAA0513	Promoter	Island shore
cg05832869	16	85240650			Island shore
cg08550517	16	85414644			
cg07082267	16	85429035			
cg27586417	16	85577800			
cg09001440	16	87952767	CA5A	Body	
cg13049862	17	1384170	MYO1C	Body	Island shelf
cg09940188	17	1686671	SMYD4	Body	
cg13916835	17	2078431	SMG6	Body	
cg03433048	17	4806453	CHRNE	Promoter	Island shore
cg04970434	17	4838096	GP1BA	3'UTR	
cg13377102	17	7832764	KCNAB3	Promoter	Island
cg23365801	17	7832909	KCNAB3	Promoter	Island
cg16513459	17	7832932	KCNAB3	Promoter	Island
cg04658021	17	8056967	PER1	Promoter	Island shore
cg01538166	17	17743987			Island
cg13895343	17	26708773	SARM1	Body	Island
cg05388545	17	29152968	CRLF3	Promoter	Island shore
cg14834285	17	33897374			Island shelf
cg04193015	17	35596680	ACACA	Body	
cg25416319	17	37080373			
cg14377681	17	37875709	ERBB2	Body	Island shelf
cg19003337	17	39780836	KRT17	Promoter	
cg10035737	17	42840005	ADAM11	Body	Island shelf
cg09983216	17	46679715	LOC404266;HOXB6	Body;Promoter	
cg17179862	17	46681362	LOC404266;HOXB6	Body;Promoter	Island shelf
cg19057899	17	47093955	IGF2BP1	Body	Island shore
cg11440486	17	48585216	MYCBPAP	Promoter	Island shore
cg00901687	17	48585270	MYCBPAP	Promoter	Island shore
cg13896106	17	72754589	SLC9A3R1	Body	
cg09096555	17	72848358	GRIN2C	Body	Island
cg20322093	17	72931788	OTOP3	Promoter	Island
cg06245338	17	74410839	UBE2O	Body	
cg21868063	17	74869001	MGAT5B	Body	Island shelf

cg00863893	17	76876239	TIMP2	Body	
cg24211657	17	76886742	TIMP2	Body	
cg12125614	17	76886835	TIMP2	Body	
cg19413066	17	76965347			
cg13392258	17	77806190			Island
cg17295878	17	77924665	TBC1D16	Body	Island shore
cg25447164	17	78417789			Island shore
cg06443034	17	78417973			Island
cg09164913	17	78963221			Island shelf
cg19761273	17	80232096	CSNK1D	Promoter	Island shore
cg21088259	17	81039990	METRNL	Body	Island shore
cg24914483	18	2653997			Island shore
cg18069568	18	43683922	ATP5A1;HAUS1	Promoter;Promoter	Island shore
cg06418113	18	43915901	RNF165	Body	Island shore
cg20916427	18	44627440	KATNAL2	3'UTR	
cg23484392	18	66465334	CCDC102B	Promoter	
cg12645852	18	74198774			Island shelf
cg24304425	19	840985	PRTN3	Promoter	Island shelf
cg10592521	19	1560658	MEX3D	Body	Island shelf
cg27552857	19	4542866	SEMA6B	3'UTR	Island shore
cg24236839	19	5038822	KDM4B	Body	Island shore
cg05025071	19	6887530	EMR1	Promoter	
cg14074174	19	7986206	SNAPC2	Body	Island shore
cg10604476	19	10403908	ICAM5	Body	Island
cg27259408	19	10427154	FDX1L;RAVER1	Promoter;3'UTR	Island shore
cg18321051	19	12251893	ZNF20	Promoter	Island shore
cg04334723	19	13054427	CALR	Body	Island shelf
cg25605731	19	13054434	CALR	Body	Island shelf
cg25690897	19	15133948	CCDC105	3'UTR	Island shore
cg11597043	19	15751612	CYP4F3	Promoter	
cg17744295	19	16178097	TPM4	Promoter	Island shore
cg22041417	19	16178195	TPM4	Promoter	Island shore
cg16664617	19	17607007	SLC27A1	Body	Island shore
cg23331484	19	33718148	SLC7A10	Promoter	Island shore
cg08196968	19	38746749	PPP1R14A	Body	Island
cg14299480	19	38876666	GGN	Body	Island
cg11199014	19	39798563	LRFN1	Body	Island
cg22840076	19	41782156	HNRNPUL1	Body	
cg22891070	19	46801642	HIF3A	Body	Island shore
cg16672562	19	46801672	HIF3A	Promoter	Island shore
cg23548163	19	46807119	HIF3A	Promoter	Island
cg16617301	19	46999109	PNMAL2	Promoter	Island
cg24718465	19	46999118	PNMAL2	Promoter	Island
cg11269599	19	52391304	ZNF577	Promoter	Island
cg22331349	19	52391350	ZNF577	Promoter	Island
cg22337438	19	54327437	NLRP12	Promoter	
cg04972979	20	749148	C20orf54	Promoter	
cg24263062	20	2730191	EBF4	Body	Island
cg05825244	20	2730488	EBF4	Body	Island
cg25551168	20	3065343	AVP	Promoter	Island shore
cg24165121	20	23398291	NAPB	Body	Island shelf
cg09333580	20	31606541	BPIL1	Body	
cg01260366	20	32307172	PXMP4	Body	Island shore
cg18942298	20	42809578	JPH2	Body	
cg19811118	20	43160245	PKIG	Promoter	Island shore
cg06260709	20	48626621			Island
cg11074047	20	50157455	NFATC2	Body	Island shore
cg11853697	20	60510235	CDH4	Body	Island shore
cg03640203	20	61145529	C20orf200	Promoter	Island shore

cg11726250	20	61924405	COL20A1	Promoter	Island shelf
cg02231404	20	62679635	SOX18	Body	Island
cg22138735	20	62679713	SOX18	Body	Island
cg16057826	21	36041334	CLIC6	Promoter	Island
cg05089897	21	38886664	DYRK1A	3'UTR	
cg26390598	21	41032396	B3GALT5	Promoter	
cg08381918	21	43221841	PRDM15	Body	Island
cg13762691	22	17956560	CECR2	Promoter	
cg00281467	22	23522460	BCR	Promoter	Island shore
cg04206417	22	29601559	EMID1	Promoter	Island
cg21361322	22	31500896	SELM	3'UTR	Island
cg01794929	22	31500940	SELM	3'UTR	Island
cg06942979	22	31501382	SELM	Body	Island shore
cg26373518	22	31518942	INPP5J	Promoter	
cg01264106	22	38071602	LGALS1	Promoter	Island shore
cg05903330	22	39542136	CBX7	Body	Island
cg01194538	22	43043270	CYB5R3	Promoter	Island shore
cg26394940	22	46449461	C22orf26;LOC150381	Body;Promoter	Island shore

Supplementary table 3:

78 consistent dmCpG sites between three HGP family members and healthy donors.

TargetID	Chr.	Position	Gene symbol	Location	CpG context
cg26840333	1	4711419			Island shelf
cg24875017	1	17026258	ESPNP	Body	Island
cg26561681	1	21376633	EIF4G3	Promoter	
cg21171625	1	38022607	DNALI1	Promoter	Island
cg09502069	1	224372558	DEGS1	Body	Island shore
cg02464665	1	231156359	MIR1182;FAM89A	Promoter;Body	
cg10075506	2	1817351	MYT1L	Body	
cg04131969	2	33951647	MYADML	Body	Island shore
cg12302982	2	39471028			Island
cg02975463	2	45178953			Island shore
cg14608581	2	70122240	SNRNP27	Body	
cg11067786	2	74780467	LOXL3;DOK1	Promoter;Promoter	Island shore
cg26682661	3	38561466	EXOG	Body	
cg00653460	3	101406220	RPL24	Promoter	Island shore
cg04556126	3	147106561	ZIC4	3'UTR	Island shore
cg03885646	3	156273458	SSR3	Promoter	Island shore
cg01797371	3	195578240			
cg20507963	4	13541863			Island shore
cg15398841	4	74847761	PF4	Promoter	Island
cg22985016	5	497397	SLC9A3	Body	Island shore
cg17774559	5	1879698	IRX4	Body	Island
cg27586797	5	13664584			
cg11937107	5	72511061			Island shore
cg21133273	5	72526964			Island shore
cg18117367	5	140213783	PCDHA cluster	Promoter	Island shore
cg22764044	5	178986830	RUFY1	Promoter	Island
cg24892966	6	27526023			
cg11574174	6	31237034	HLA-C	Body	Island shore
cg10923662	6	32064258	TNXB	Body	Island
cg15708909	6	32487314	HLA-DRB5	Body	Island shelf
cg11387340	6	166970727	RPS6KA2	Body	
cg06119452	6	169621662	THBS2	Body	Island shore
cg27084028	7	6836436	RSPH10B	Body	
cg10186435	7	22492438	MGC87042	Body	
cg01579884	7	37004390	ELMO1	Promoter	
cg01953390	7	44105764	PGAM2	Promoter	Island shore
cg16562776	7	56606401			
cg26162326	7	75957061	YWHAG	3'UTR	Island shore
cg04671734	8	2591207			
cg04122358	8	2591265			
cg08242633	8	2591411			
cg08781728	8	21882587	NPM2	Promoter	Island
cg06226386	8	22500449	FLJ14107;BIN3	Promoter;Body	
cg00225196	8	37556863			Island shore
cg17816771	8	91099036			
cg06730756	8	142198993	DENND3	Body	
cg11284147	8	144437914			Island shelf
cg13979884	9	74061171			Island shore
cg00748149	9	128171030			Island
cg07044115	10	123100181			
cg15996480	10	133484592			
cg01612681	11	2322386	C11orf21;TSPAN32	Body;Promoter	
cg13308137	11	47528955	CUGBP1	Promoter	
cg07745373	11	58941415	DTX4	Body	Island shore

cg08923614	11	74303294	POLD3	Promoter	Island shore
cg12974393	11	107779099			
cg26654770	12	740100	NINJ2	Body	
cg08143343	12	85307152	SLC6A15	Promoter	Island shore
cg08254200	12	113229804	RPH3A	Promoter	
cg23302649	14	29243690	C14orf23	Body	Island
cg06394109	16	1152511			Island
cg01412970	17	17109239	PLD6	Promoter	Island
cg03554335	17	62075151	C17orf72	Promoter	
cg02243479	17	78859959	RPTOR	Body	Island shelf
cg07488417	18	45274578			Island shore
cg17121205	19	44009353	PHLDB3	Promoter	Island shore
cg07557707	19	58549711	ZSCAN1	Body	Island
cg21235746	20	5485144	LOC149837	Body	
cg03287299	20	5485245	LOC149837	Promoter	
cg20295248	20	5485270	LOC149837	Promoter	
cg16763089	20	5485284	LOC149837	Promoter	
cg10831901	20	5485294	LOC149837	Promoter	
cg11577716	20	20258001	C20orf26	Body	
cg16334795	21	42538894	BACE2	Promoter	Island shore
cg00944631	22	20464947			Island shelf
cg13405775	22	32599648	RFPL2	Promoter	
cg17988310	22	40355732	GRAP2	Body	
cg05418105	22	50981406			Island shore