Supplementary Information

A Systems Biology approach to determine cell-specific gene regulatory

effects of genetic associations in multiple sclerosis

International Multiple Sclerosis Genetics Consortium*



Supplementary Figure 1

Supplementary Figure 1. Overview of our approach. Both summary statistics and genotype-level data were incorporated into the pipeline. The algorithm consists of two stages: I. SNP to Gene (steps 1 and 2) and II. Gene to pathway (step 3). Step 1 consists in selecting individual SNPs, and those in LD. Subsequently, RegulomeDB records for all selected SNPs are parsed and organized in discrete regulatory signals (activation, repression, etc) and discrete cell type (B cell, T cell, etc) where the regulatory effect has been documented. Step 2 consists in computing an aggregate score for each nearby gene from all regulatory signals. This predicted regulatory effect (PRE) is then used to prioritize each gene within a region and construct a local protein interactome based on an established protein interaction network. Finally, the resulting network is evaluated for statistical significance and visualized both at the population and individual level.



Supplementary Figure 2

Supplementary Figure 2. Sensitivity analysis of cell-specific sub-networks. Basic topological measures such as the number of edges of the entire sub-network (E) and the number of nodes (N-ECC) and edges (E-LCC) in the largest connected component were computed for networks generated using different PRE thresholds (10th, 25th, and 50th percentiles), and association r^2 cut-offs (0.1, 0.5 and 0.8) for each cell type (B: B cells; T: T cells; C: CNS; M: monocytes; L: lung) at each level of confidence (GW, SR and NR). Each colored cell represents the significance of each tested network metric. Panel A shows that significant networks were obtained across a wide spectrum of conditions (the lower value observed at the 99th percentile is due to the small networks resulting from using that extreme PRE threshold). Panels B and C show that the significance of generated networks with SR and NR variants is much lower than with GW variants.



Supplementary Figure 3. Sensitivity analysis of individual-level networks. Basic topological measures such as the number of nodes (N) and edges (E) of the entire sub-network and the number of nodes (N-ECC) and edges (E-LCC) in the largest connected component were computed for networks generated using different PRE thresholds (10th, 25th, and 50th percentiles), and association r^2 cut-offs (0.1, 0.5 and 0.8) for each cell type (B: B cells; T: T cells; C: CNS; M: monocytes; L: lung) at each level of confidence (GW, SR and NR). Then, each metric was compared between cases and controls by means of T-test (1-tailed) to test the hypothesis that on average more significant networks are obtained for patients than for healthy controls. Each colored cell represents the significance of each tested network metric. Panel A shows that significant networks were obtained across a wide spectrum of conditions (the lower value observed at the 50th percentile is due to that only small networks result from using that extreme PRE threshold). Panel B shows that using variants from SR regions yields networks with significant differences between cases and controls.



Supplementary Figure 4

Supplementary Figure 4: Individual PREs correlate with global polygenic risk scores: Cellspecific predicted regulatory effects (PRE) of 2,370 MS cases were correlated with their corresponding polygenic risk scores (MS genetic burden, MSGB). The table shows all correlations between MSGC and PRE for each cell type discussed in this paper. A representative scatter plot shows individual values of MSGB (Y-axis) and average PRE for monocytes (X-axis).



Supplementary Figure 5: Comparison of gene prioritization across three methods: SNP to gene operations were computed in FUMA, DEPICT, and PASCAL and the results were compared to those obtained in this work. For 69 out of 200 loci the prioritized genes were the same across all methods. The method presented here produced a gene output for every association and shared the most genes with the other three methods (119 with FUMA, 96 with DEPICT, and 120 with PASCAL).

Supplementary Table 1. Feature comparison with other pathway methods

Method	PRE	DEPICT	FUMA	PASCAL
SNP to gene mapping per cell/tissue type	Yes	No	Yes	No
Cell type/Tissue specific gene prioritization	Yes	No	Yes	No
Leverages SNP Regulatory information	Yes	No	Yes	No
Takes into account SNPs in LD	Yes	Yes	Yes	Yes
Requires SNP p-values as input	No	No	Yes	Yes
SNP filtering based on predicted functional annotations from tools	No	No	Yes	No
Genes assignment by proximity	No	Yes	yes	Yes
Needs predefined gene sets	Yes	Yes	Yes	Yes
computes individual regulatory burden	Yes	No	No	No
Enrichment analysis of prioritized genes in biological pathways	Yes	Yes	Yes	Yes
Default restriction based on MAF	No	Yes	Yes	Yes

Supplementary Table 2. Comparison of results with other pathway methods		

chr11:14868316 chr13:100026952	DDX6	NA	NA
Chr13:100026952	RRAS2	NA	NA
dr14:88523488	GALC IM95F2	NA NA	NA NA
chr16:11213951 chr16:11353879	CLEC16A I	NA NA	NA NA
chr1:154983036	FLAD1	NA	NA
dr2:112492986	ANAPC1 MERTK	NA NA	NA VA
chr3:100848597 chr3:112693983	CD200R1 I	NA NA	NA NA
chr3:121765368 chr3:121783015	IQCB1 I	NA NA	NA NA
chr5:40429250 chr6:119215402	DAB2 PTGER4	NA	NA NA
chr6:130348257	L3MBTL3	NA	VA
chr6:14691215 chr7:50328339	CD83 JARID2 NA I C7orf72 IKZF1 I	NA NA	NA
chr8:129177769 chr8:95851818	LINC00977 MIR1208 PCAT1 POUSF1B INTS8	NA NA	NA NA
rs10063294	CAPSL/IL7R	L7R	L7R
rs10191360	CXCR4 DARS THSD7B	DXCR4	DX0R4
rs10230723 rs10245867	JAZF1 JAZF1-AS1	NA IAZF1	NA AZF1
rs1026916 rs10271373	STAT3 ZC3HAV11ZC3HAV1L	STAT3 ZC3HAV1	STATSA STAT3 PTRF ZC3HaV1L ZC3HaV1
rs1076928 rs1077667	STK38	ETV7 KCTD20	ETV7 PXT1 KCTD20
rs10801908	CD58	CD58	1058
rs109/056 rs10936182	IL12A LINC01100	L12A	NA NA
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rs11083862	NA	NA	AE1
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rs11749040	DAB2 PTGER4	NA PTGER4	VA
rs1177228 rs11809700	EVIS FAM69A	PUSID NA	PUS10 PEX13 KIAA1841 RPL5 FAM69A GF11 EVI5
rs11852059 rs11899404	FRMD6 GNG2 MIR4262 NA TRIB2	SNG2 NA	SNG2 VA
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rs12147246	TRAF3	TRAF3	IRAF3
rs12365699	DDX6	DXCR5	ADDRA [CXCRS
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rs1250551 rs12588669	ZMIZ1	ZMIZ1	2M/21 18653
rs12609500	SMARCA4	NA CONS	SMARCA4
rs12622670	CD28 CTLA4 RAPH1 FBXO48 PLEK	LDZ8 PLEK	NEK
rs12722559 rs12832171	IL15RA IL2RA I TNFRSF1A U47924.1	NA	L2RA RBM17 NA
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rs13066789	LPP I	NA	lbb
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rs17051321	NDNF TNIP3	INIP3	INIP3
rs1738074 rs17724508	RSPH3 TAGAP DYNLRB2 WWOX	ragap NA	RSPH3 TAGAP NA
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1.100039 1.100039 1.100031	CONE CONE CONE MOREL MAREL MOREL MAREL MOREL MAREL MOREL MAREL CONE MAREL CONE MAREL CONE CALCIAA CONE CONE CONE CALCIAA CONE CONE CONE CARLANCIAN CONE CARLANCIAN CONE CARLANCIAN CONE CONE CONE	AA APP2 APP2 APP2 APP2 APP2 APP2 APP2 A	Table (Instan)

rs67934705	NA	NA	NA
rs6837324	TEC TXK	TXK TEC	TXK TEC
rs6911131	FUCA2 LOC285740	PHACTR2	PHACTR2
rs6990534	LINC00977 MIR1208 PCAT1 POU5F1B	PVT1	NA
rs701006	TSFM	CYP27B1 MARCH9 METTL21B B4GALNT1 OS9	DTX3 ARHGEF25 SLC26A10 B4GALNT1 OS9 AGAP2 AGAP2-AS1 TSPAN31 CDK4 MARCH9 CYP27B1 METTL1 METTL21B NA TSFM AVIL CTDSP2
rs719316	ATXN1	ATXN1	ATXN1
rs7222450	MAP3K14	NA	NA
rs7260482	PVR	PVR	IGSF23 PVR CEACAM19
rs72922276	JAK1	JAK1	RAVER2 JAK1
rs72928038	BACH2	BACH2	BACH2
rs72989863	MARCH1	MARCH1	MABCH1
rs73414214	SYPL1	NA	SYPL1
rs735542	LINC00977 MIR1208 PCAT1 POU5F1B	NA	NA
rs760517	CSF2RB NCF4	NCF4	NCF4
rs7731626	ANKRD55 NA	NA	ANKRD55
rs7855251	NANS	NA	TRIM14
rs7975763	MPHOSPH9	RILPL2 PITPNM2	ABCB9 OGFOD2 ARL6iP4 PITPNM2 MPHOSPH9 C12orf65 CDK2AP1 SBN01 SETD8 RILPL2
rs7977720	CLEC2D CLECL1	CLECL1 CLEC2D	CLEC2D CLECL1
rs802730	NA	NA	PTPRK
rs8062446	NLRC5	NLRCS	NLRCS
rs883871	GSDMB	NA	THRA NR1D1
rs9308424	BATF3 UBE2D3	BATF3	BATF3
rs9568402	DLEU7 ST13P4	NA	DLEU1
rs9591325	DLEU7 ST13P4	NA	DLEU1
rs9610458	MAPK1	PPM1F	YPEL1 MAPK1 PPM1F TOP3B
rs962052	NA RBM43 RND3	NA	NA
rs9808753	IL10RB	IFNGR2	IFNGR2 TMEM50B
rs983494	CD48 VANGL2	SLAMF7	SLAMF7
rs9843355	ARHGAP31	CD80 ARHGAP31 POGLUT1 TMEM39A	ARHGAP31 TMEM39A POGLUT1 TIMMDC1 CD80
rs9863496	KCNH8 SATB1	SATB1	NA
rs9878602	FOXP1	FOXP1	FOXP1
rs9900529	GRB2	GRB2 GGA3 MIF4GD SLC25A19 TSEN54	SLC25A19 GRB2
rs9909593	GSDMB	GSDMB IKZF3 ORMDL3	GRB7 IKZF3 ZPBP2 GSDMB ORMDI3 LRRC3C
rs9955954	MALT1	MALT1	MALT1
rs9992763	LEF1 RPL34-AS1	LEF1	LEF1

Supplementary Table 3. RegulomeDB content

Data Type	Types	Features
Transcription Factor ChIP-seq (ENCODE)	495 conditions/cell lines	7,721,822
Transcription Factor ChIP-seq (non-ENCODE)	32 conditions/cell lines	397,534
Transcription Factor ChIP-exo	1 condition	35,161
Histone Modifications	284 conditions/cell lines/marks	23,055,241
Dnase I hypersensitive sites	114 conditions/cell lines	20,710,098
FAIRE sites	25 conditions/cell lines	4,816,196
Dnase I footprints	50 cell lines	128,266,803
Predicted binding (PWMs)	1158 motifs	239,713,973
eQTLs	142,945 SNPs	142,945
dsQTLs	6069 SNPs	6,069
Manual annotations	6 genomic regions	282
VISTA enhancers	1448 enhancers	1,325
Validated SNPs affecting binding	855 SNPs	855

Кеу	
Data Type	Type of regulatory feature hosted by RegulomeDB
Types	Detailed content for each data type
Features	Total amount of regulatory features for data type

Supplementary Table 4. ENCODE cell types used in this analysis

cell_Line_name	ENCODE_Tier	Description	Tissue	Karyotype
GM13976		3 lymphoblastoid cell line, clinically normal; monozygotic twin sister with Cornelia De Lange syndrome is GM13977	blood	normal
GM12878		1 B-lymphocyte, lymphoblastoid, International HapMap Project - CEPH/Utah - European Caucasion, Epstein-Barr Virus	blood	normal
CD20+		2 B cells from donors RO01778 and RO01794, newly promoted to tier 2: not in 2011 analysis	blood	normal
CD20+ RO01778		2 B cells, caucasian, draw number 1, newly promoted to tier 2: not in 2011 analysis	blood	normal
CD20+ RO01794		2 B cells, African American, draw number 1, newly promoted to tier 2; not in 2011 analysis	blood	normal
GM10248		3 lymphoblastoid cell line, Clinically normal; 4 paternal cousins have Cornelia de Lange syndrome; 46,XY, t(3;22)(g25.3;p12)	blood	normal
GM12878-XiMat		3 B-lymphocyte, lymphoblastoid, cloned for maternal X inactivation, International HapMap Project, CEPH/Utah, Epstein-Barr Virus	blood	normal
GM12871		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed.	blood	normal
GM12872		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed	blood	normal
GM18507		3 Ivmphoblastoid, International HapMap Project, Yoruba in Ibadan, Nigera, treatment: Epstein-Barr Virus transformed	blood	normal
GM06990		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah, treatment: Epstein-Barr Virus transformed	blood	normal
GM10847		3 lymphoblastoid, International HapMap Project, CEPH/Utah, treatment: Epstein-Barr Virus transformed	blood	normal
GM12801		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah, treatment: Epstein-Barr Virus transformed	blood	normal
GM12812		3 B-Lymphocyte, Lymphoblastoid, International HapMap Project, CEPH/Utah, Treatment: Epstein-Barr Virus transformed	blood	normal
GM12813		3 B-Lymphocyte, Lymphoblastoid, International HapMap Project, CEPH/Utah, Treatment; Epstein-Barr Virus transformed	blood	normal
GM12864		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed	blood	normal
GM12865		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed	blood	normal
GM12866		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed.	blood	normal
GM12867		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed.	blood	normal
GM12868		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed.	blood	normal
GM12869		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed.	blood	normal
GM12870		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed.	blood	normal
GM12873		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed	blood	normal
GM12874		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed	blood	normal
GM12875		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1459, treatment: Epstein-Barr Virus transformed	blood	normal
GM12891		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1463, treatment: Epstein-Barr Virus transformed	blood	normal
GM12892		3 B-lymphocyte, lymphoblastoid, International HapMap Project, CEPH/Utah pedigree 1463, treatment: Epstein-Barr Virus transformed	blood	normal
GM15510		3 lymphoblastoid NIGMS Human Genetic Cell Repository, DNA Polymorphism Discovery Resource Collection, treatment: Epstein-Barr Virus transformed	blood	normal
GM18505		3 lymphoblastoid, International HapMap Project, Yoruba in Ibadan, Nigera, treatment: Epstein-Barr Virus transformed	blood	normal
GM18526		3 Ivmphoblastoid, International HapMap Project, Han Chinese in Belijing, China, treatment; Epstein-Barr Virus transformed	blood	normal
PBMC		3 peripheral blood mononuclear cells	blood	normal
GM19099		3 lymphoblastaid International HanMan Project. Yoruba in Ibadan. Nigera, treatment: Enstein-Barr Virus transformed	blood	normal
GM19193		3 Jumphoblastoid International HanMan Project Yoruba in Ibadan Nigera, treatment: Enstein-Barr Virus transformed	blood	normal
GM19238		R-lymphonetely methodiated international HanMan Project Youtha in Ibadan Nigera treatment: Enstein-Barr Virus transformed	blood	normal
GM18951		3 lympholastoid International HanMan Project Jananese in Tokyo Janan treatment: Enstein-Barr Virus transformed	blood	normal
H0287		3 FRV-transformed lymphohiastic religions regions regions and region perioderal blood donated by a normal healthy male	blood	normal
lymphoblastoid		a parental cell true to lumpholisticat de la merce de la contractione proprieta biolo donarco y o normal richtly more.	blood	normal
Lymphoblastoid cell line		a parental cell true to jumpholistati dell'ines	blood	normal
H0287		3 Epictranectory to comprison sector metal call line (10) was derived from peripheral blood donated by a normal healthy male	blood	normal
GM10220		2. D Implecite Implehisted deal mic (ee) was denoted from peripheral blood object by a normal healthy mice tageformed	blood	normal
CM10240		3 brymphocyte, rymphobiastolia, menatorian hanking Project, Youtka in Induani, Nigera, treatment: Epsteinbarn virus transformed	blood	normal
00015240		3 brymphocyce, rymphobiaston, mematonar napwap roject, rokuba mobiland darated hus accentent bash what international material accentent accente	blood	normal
Frantal sartay OC		S boy-cransformed hymphodiascold cent mile (LCL) was derived from peripheral blood donated by a normal nearthy male.	frontal cortax	normal
Fiontal_contex_OC		S Primary Ventionedia periodical contex, non knows book do to 2016 bil and 910 (kep 62)	Inonital cortex	normal
H1-heurons		2 neurons derived non-in-termoryonic stem cens, newly promoted to der 2, not in 2011 analysis	neurons	normal
HAC		3 astrocytes-cerebellar	cerebellar	normal
NH-A		3 astrocytes (also called Astrocy)	brain	normai
Pons_OC		3 Primary frozen pons mito-brain tissue from NICHD donor IDs 1104 (Kep B1), 602 (Kep B2), 1442 (Kep B3)	pons mid-brain	normai
BC_Brain_H11058N		3 brain, donor H11058N, age 66, Asian, DNA extract	brain	normal
Cerebellum_OC		3 Primary frozen cerebellum tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3), all Caucasian	cerebellum	normal
Cerebrum_frontal_OC		3 Primary frozen frontal cerebrum tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3), all Caucasian	frontal cerebrum	normal
HA-sp		3 astrocytes spinal cord	spinal cord	normal
HA-h		3 astrocytes-hippocampal	brain hippocampus	normal
IMR90		2 fetal lung fibroblasts, newly promoted to tier 2: not in 2011 analysis	lung	normal
AG04450		3 fetal lung fibroblast	lung	normal
BC_Lung_01-11002		3 lung, donor 01-11002, age 83, caucasian, DNA and RNA extract	lung	normal
BC_Lung_H12817N		3 lung, donor H12817N, age 71, caucasian, DNA and RNA extract	lung	normal
HPF		3 pulmonary fibroblasts isolated from lung tissue	lung	normal
Lung_BC		3 lung, parental cell type to donors 01-11002 and H12817N	lung	normal
Lung OC		Primary frozen lung tissue from NICHD donor IDs 1104 (Rep B1 DNase), 602 (Rep B2 DNase), 1442 (Rep B3 DNase) and CF Center donor IDs DD006i (Rep B1 3 FAIRE) and DD007i (Rep B2 FAIRE)	Lung	normal
NHLF		3 lung fibroblasts	lung	normal
WI-38		3 embronic lung fibroblast cells. hTERT immortalized includes Raft construct	embryonic lung	normal
FibroP AG08396		3 fibrohlasts taken from individuals with Parkinson's disease	lung fibroblast	normal
hMNC-CB		3. Monopolicitar Cellic (umbilical cont bloodcingle doors) from two individuals. hMNC-CR. 9111701.6 and hMNC-CR. 9072803.5	blood	normal
hMNC-CB_8072802.6		Mononuclear Cells, umblical cord blood-single door in the work indicates, name Ca_51117016 and name Ca_501202.8	blood	normal

	Monocytes-CD14+ are CD14-positive cells from human leukapheresis production, from donor RO 01746 (draw 1 ID is RO 01746, draw 2 ID is RO 01826), newly		
Monocytes-CD14+	2 promoted to tier 2: not in 2011 analysis	monocytes	normal
	Monocytes-CD14+ are CD14-positive cells from human leukapheresis production, from donor RO 01746 (draw 1 ID is RO 01746, draw 2 ID is RO 01826),		
Monocytes-CD14+_RO01746	2 Monocytes-CD14+ RO01746 and Monocytes-CD14+ RO01826 are being used as replicates, newly promoted to tier 2: not in 2011 analysis	monocytes	normal
	Monocytes-CD14+ are CD14-positive cells from human leukapheresis production. Monocytes-CD14+ R001826 is a second draw being used as a replicate for		
Monocytes-CD14+ RO01826	2 Monocytes-CD14+ RO01746, newly promoted to tier 2: not in 2011 analysis	monocytes	normal
GC B cell	3 Germinal center B cells (CD77+) isolated from de-identified tonsillectomy	tonsil	normal
BC Stomach H12817N	3 stomach, donor H12817N, age 71, caucasian, DNA and RNA extract	stomach	normal
Endometrium OC	3 Endometrium isolated from uterine lining	endometrium	normal
Fibrobl GM03348	a skin fibrohast	skin	normal
FibroP	3 fibrohasts taken from individuals with Parkinson's disease. AG20443. AG08395 and AG08396 were pooled for this sample	skin	normal
GM0/503	3 adult twin pair fibroblasts monographic twin of GM0500	skin	normal
GM04503	a dult twin pair fibroblast, monzygoti twin of GMS03 12% of the colls oraminad show random chromosoma loss	skin	normal
LEE Muc	2 forest filtrablact cells averaging calling ether	foroskin	normal
	a diadia fibrablacte	gingiya	normal
HIDENIC		onitholium	normal
ниеро	s inspigment epitneliai celis	epitnellum	normal
HWP 0003305	3 Undifferentiated white Preadipocytes from two individuals, HWP_0092205 and HWP_8120201.5, subcutaneous adipose tissue from addomen / upper arm 2. Undifferentiated White Preadipocytes from two individuals, HWP_0092205 and HWP_8120201.5, subcutaneous adipose tissue from addomen / upper arm	adipose	normal
HWP_0092205	3 Undifferentiated White Preadipocytes from abdomen	subcutaneous adipose tissue	normal
Melano	3 epidermai metanocytes	skin	normal
FibroP_AG20443	3 tibroblasts taken from Individuals with Parkinson's disease	skin fibroblast	normal
HFL11W	3 fetal liver 11 weeks, consented fetal liver samples were isolated from legally aborted fetuses at 11 weeks gestation	liver	normal
HFL24W	3 fetal liver 24 weeks, consented fetal liver samples were isolated from legally aborted fetuses at 24 weeks gestation	liver	normal
HHSEC	3 hepatic sinusoidal endothelial cells	liver	normal
iPS_CWRU1	3 iPS cells derived from MSC658 fibroblast	induced pluripotent cell (iPS)	normal
HMVEC-LBI	3 blood microvascular endothelial cells, lung-derived	blood vessel	normal
HMVEC-LLy	3 lymphatic microvascular endothelial cells, lung-derived	blood vessel	normal
	trachea and bronchial epithelial cells from frush lung tissue provided by National Disease Research Interchange, passage 2 primary, non-immortalized cells,		
TBEC	3 donor was 21 years old	epithelium	normal
BC_Testis_N30	3 testis, donor N30, age 41, Asian, DNA extract	testis	normal
HMEC	3 mammary epithelial cells	breast	normal
HMEpC	3 Mammary Epithelial Cells (placeholder, waiting on second lot/donor from PromoCell)	mammary gland	normal
HMEpC 6022801.3	3 Mammary Epithelial Cells	mammary gland	normal
Myometr	3 myometrial cells	myometrium	normal
HME	a mammany filophiasts	mammany	normal
DPMC		blood	normal
HBMC	2 brian blood monoradear cens	blood	normal
RC Bladder 01 11002	5 Urdin Vascular per Lytes	urinany bladdar	normal
BC_Bidduel_01-11002	S unimary brauder, upino 01-11002, age 85, caucasian, biva extract	unnary bladder	normal
BC_Oterus_BN0765	s uterus, donor BNU/RS, age 44, Asian, DINA extract	uterus	normai
BJ	3 skin tiproblast, The Time Was established from skin taken from normal foreskin ATCC. (PMID: 9916803)	skin	normai
HAEpiC	3 amniotic epithelial cells	epitnelium	normal
BC_Leukocyte_UHN00204	3 peripheral blood mononuclear cell, donor UHN00204, age 54, caucasian, DNA extract	blood	normal
hMNC-CB_9111701.6	3 Mononuclear Cells, umbilical cord blood-single donor	blood	normal
hMNC-PB	3 Mononuclear Cells (peripheral blood-single donor) from two individuals, hMNC-PB_0022330.9 and hMNC-PB_0082430.9	blood	normal
hMNC-PB_0022330.9	3 Mononuclear Cells, peripheral blood-single donor	blood	normal
hMNC-PB_0082430.9	3 Mononuclear Cells, peripheral blood-single donor	blood	normal
Naive_B_cell	3 Naive B cells (IgD+) isolated from de-identified tonsillectomy	tonsil	normal
HBMEC	3 brain microvascular endothelial cells	blood vessel	normal
HBVSMC	3 brain vascular smooth muscle cells.	blood vessel	normal
HCPEpiC	3 choroid plexus epithelial cells	epithelium	normal
BC_Leukocyte_UHN00204	3 peripheral blood mononuclear cell, donor UHN00204, age 54, caucasian, DNA extract	blood	normal
hMNC-CB	3 Mononuclear Cells (umbilical cord blood-single donor) from two individuals, hMNC-CB_9111701.6 and hMNC-CB_8072802.6	blood	normal
hMNC-CB 8072802.6	3 Mononuclear Cells, umbilical cord blood-single donor	blood	normal
hMNC-CB 9111701.6	3 Mononuclear Cells, umbilical cord blood-single donor	blood	normal
hMNC-PB	3 Mononuclear Cells (peripheral blood-single donor) from two individuals, hMNC-PB 0022330.9 and hMNC-PB 0082430.9	blood	normal
hMNC-PB 0022330.9	3 Mononuclear Cells, peripheral blood-single donor	blood	normal
bMNC-PB_0082430.9	3 Mononuclear Cells, perioderal blood-single donor	blood	normal
		blood	normal
10460	2 data betad/bita Users	ckin	normal
A004449	S tetal buttotky tingin histobiast	SKIII	normal
N003213	S guin ussue involutas ironi apparentity neatrily 24 year oro	gingival	normal
AOAF	s aortic adventitiai noroalist cens	bioba vessel	normal
AOSMU	a aortic smooth muscle cells	blood vessel	normal
BC_Adipose_UHN00001	3 adipose tissue, donor UHN0001, age 35, African American, DNA extract	adipose tissue	normal
BC_Adrenal_Gland_H12803N	3 adrenal gland, donor H12803N, age 88, caucasian, DNA extract	adrenal gland	normal
BC_Breast_02-03015	3 breast, donor 02-03015, age 21, caucasian, DNA extract	breast	normal
BC Colon 01-11002	2 cales depar 01 11002 are 82 causarian DNA and BNA autract	colon	normal
	S COOR, DOROT OT-11002, age 85, Caucasian, DIVA and KIVA extract	COIOII	normai

BC Esophagus 01-11002	3 esophagus, donor 01-11002, age 83, caucasian, DNA and RNA extract	esophagus	normal
BC Esophagus H12817N	a scontagils down H12817N age 71 caucasian DNA extract	esonhagus	normal
BC Joinnum H13817N	2 initial data 112171 and 21 manuarian DNA and DNA antract	iolunum	normal
	3 Jejununi, uono mizorni, age zi juudusiani, biva anu kiva ekitakt	jejunum	normal
BC_Kidney_01-11002	3 koney, donor 01-11002, age 83, caucasian, DNA and KNA extract	kidney	normai
BC_Kidney_H12817N	3 kidney, donor H12817N, age 71, caucasian, DNA and RNA extract	kidney	normal
BC_Left_Ventricle_N41	3 left ventricle, donor N41, age 26, Asian, DNA extract	left ventricle	normal
BC_Liver_01-11002	3 liver, donor 01-11002, age 83, caucasian, DNA and RNA extract	liver	normal
BC_Pancreas_H12817N	3 pancreas, donor H12817N, age 71, caucasian, DNA and RNA extract	pancreas	normal
BC Penis H12817N	3 penis, donor H12817N, age 71, caucasian, DNA extract	penis	normal
BC Pericardium H12529N	3 pericardium, donor H12529N, age 70, caucasian, DNA extract	pericardium	normal
BC Placenta LIHN00189		nlacenta	normal
BC Prestate Cland H12817N	2 protected and donor H109120 and 71 payments DNA output	procenta gland	normal
	S prostate graini, ubili mizorini, age 71, tautasiari, biva extract	prostate giano	normai
BC_Rectum_N29	3 rectum, donor N29, age 29, Asian, DNA extract	rectum	normal
BC_Skeletal_Muscle_01-11002	3 skeletal muscle, donor 01-11002, age 83, caucasian, DNA and RNA extract	skeletal muscle	normal
BC_Skeletal_Muscle_H12817N	3 skeletal muscle, donor H12817N, age 71, caucasian, DNA and RNA extract	skeletal muscle	normal
BC_Skin_01-11002	3 skin, donor 01-11002, age 83, caucasian, DNA extract	skin	normal
BC_Small_Intestine_01-11002	3 small intestine, donor 01-11002, age 83, caucasian, DNA and RNA extract	small intestine	normal
BC Spleen H12817N	3 spleen, donor H12817N, age 71, caucasian, DNA and RNA extract	spleen	normal
BC Stomach 01-11002	3 stomach, donor 01-11002, age 83, caucasian, DNA extract	stomach	normal
	HS273 Human Marrow Stromal Cells are fibroblastoid cells immortalized with HDV16 E6/E7 genes as described in Boecklein and Torok-Storh. 1995 Blood 85:997.		
hono marrow HS27a	2 100E incort DNA is USN 16 E627 portaged in DA21	hono marrow	normal
bone_manow_msz/a	3 100, Insert Divers CASIF10 CDCP packaged IN FAST.	bolle marrow	normai
	HSS Human Marrow Stromal Cells are fibroblastoid cells immortalized with HPV16 E6/E7 genes as described in Roecklein and Torok-Storb, 1995 Blood 85:997-		
bone_marrow_HS5	3 1005, insert DNA is LXSN-16 E6E7 packaged in PA31.	bone marrow	normal
	These cells are primary fibroblastoid cells obtained from human bone marrow of normal donors as described in Roecklein and Torok-Storb, 1995 Blood 85:997-		
bone_marrow_MSC	3 1005.	bone marrow	normal
Breast_OC	3 Primary frozen breast tissue from NCTC donor IDs 11-0068A (Rep B1) and 11-0067A (Rep B2), both African American	breast	normal
Colon BC	3 colon, parent cell type to donors BC 01-11002 and BC H12817N	colon	normal
Colon OC	3 Primary frozen colon tissue from NCTC donor IDs 10-0005A (Rep B1) and 10-0170A (Rep B2), African American and caucasian	colon	normal
Esophagus BC	3 esophagus, parental cell type to donors 01-11002 and H12817N	esophagus	normal
Fibrohl	3 child füroblast	skin	normal
HADAE	3 Aprilie Advantitial Eibrohlasts from two individuals. HADAE 6090101 11 and HADAE 6111301 9 from tunica advantitia	blood vessel	pormal
HAGAE 6000101 11	3 April Adventigian Displayers from turica adventitia	blood vessel	normal
HAGAI_0050101.11	2 A det à Austrilia Holoists foir tuine auxernitie	blood vessel	normal
HAOAF_6111301.9	3 AORTIC Adventital Florobasts from funica adventitia	blood vessel	normal
HAOEC	3 Aortic Endothelial Cells (thoracic) from two individuals, HAOEC_7071706.1 and HAOEC_8061102.1	blood vessel	normal
HA0EC_7071706.1	3 Aortic Endothelial Cells	blood vessel	normal
HAoEC_8061102.1	3 Aortic Endothelial Cells from throracic	blood vessel	normal
HCF	3 cardiac fibroblasts	heart	normal
HCFaa	3 cardiac fibroblasts- adult atrial	heart	normal
нсн	3 Undifferentiated Chondrocytes from two individuals, HCH_8100808.2 and HCH_0011308.2P from knee joint	cartilage	normal
HCH 0011308.2P	3 Undifferentiated Chondrocytes from knee joint	cartilage	normal
HCH 8100808.2	3 Undifferentiated Chondrocytes from knee joint	cartilage	normal
HCM	3 cardiac myorytes	heart	normal
Heart OC	2 Drimon france hourt ticsus from NICHD dense ID: 1104 (Dan D1 DNaco) 502 (Dan D2 DNaco) 1442 (Dan D2 DNaco) 1962 (Dan D1 CAIDE) 4648 (Dan D2 CAIDE)	heart	normal
	3 Printaly Trozen Heart (15sue Horn Witchb dollor 15s 1104 (kep B1 Divase), 602 (kep B2 Divase), 1442 (kep B5 Divase), 1605 (kep B1 PAIKE), 4548 (kep B2 PAIKE)	neart	normai
Heart_STL003	3 Standard procurement of heart tissue from a 34 year old caucasian male.	heart	normal
HEEpiC	3 esophageal epithelial cells	epithelium	normal
Hepatocytes	3 primary hepatocytes, liver perfused by enzymes to generate single cell suspension	liver	normal
HFDPC	3 Follicle Dermal Papilla Cells from two individuals, HFDPC_0100503.2 and HFDPC_0102703.3 from lateral scalp (brown, blond)	skin	normal
HFDPC_0100503.2	3 Follicle Dermal Papilla Cells from lateral scalp (brown)	skin	normal
HFDPC_0102703.3	3 Follicle Dermal Papilla Cells from lateral scalp (blond)	skin	normal
HFF	3 foreskin fibroblast	foreskin	normal
MARC AT	2 Undifferentiated Macanchumal Stom Colle from two individuals IMSC AT 006160112 and MMSC AT 010260412 from subsystanceus addemon adiress tissue	adinosa	normal
bMSC AT 0102604.12	3 Undifferentiated Miscarchinghal State Colli from two mutuality, miscarchica in Miscarchinghal State Colli from two mutuality, address adjusted tick.	adipose	normal
hMSC-AT_0102004.12	3 ondarierentisted Mesenchargen Cens Consistences addonen aupose rissde	aupose	normal
NVSC-A1_9061601.12	3 Undifferentiated wiesenchymal stem cells from abdomen	subcutaneous adipose tissue	normal
hMSC-BM	3 Undifferentiated Mesenchymal Stem Cells from two individuals, hMSC-BM_0050602.11 and hMSC-BM_0051105.11 from femoral head	bone marrow	normal
hMSC-BM_0050602.11	3 Undifferentiated Mesenchymal Stem Cells from femoral head	bone marrow	normal
hMSC-BM_0051105.11	3 Undifferentiated Mesenchymal Stem Cells from femoral head	bone marrow	normal
hMSC-UC	3 Undifferentiated Mesenchymal Stem Cells from two individuals, hMSC-UC_0081101.7 and hMSC-UC_0052501.7 from matrix (Wharton's Jelly)	umbilical cord	normal
hMSC-UC_0052501.7	3 Undifferentiated Mesenchymal Stem Cells from matrix (Wharton's Jelly)	umbilical cord	normal
hMSC-UC_0081101.7	2. Undifferentiated Masenshumed Stem Calls from matrix (Wharten's Jally)	umbilical cord	normal
HMVEC-dAd	5 Unumerentialeu wesenchymai stem cens num matrix (whattur stemy)		
	3 adult demain microscular endothelial cells.	blood vessel	normal
HMVEC-dBI-Ad	3 dult block microsscular endothelial cells, dermal-derived 3 adult block microsscular endothelial cells, dermal-derived	blood vessel blood vessel	normal normal
HMVEC-dBI-Ad HMVEC-dBI-Neo	3 online endated wesenclyntar stein cens mon mark (whaton's seny) 3 adult dermal microvascular endothelial cells. 3 adult blood microvascular endothelial cells, dermal-derived 3 enonata blood microvascular endothelial cells, dermal-derived	blood vessel blood vessel blood vessel	normal normal normal
HMVEC-dBI-Ad HMVEC-dBI-Neo HMVEC-dLived	3 outil referenciated mesencliquinal setting cells from mark (what our setting) 3 adult derma microvascular endothelial cells, dermal-derived 3 adult blood microvascular endothelial cells, dermal-derived a neonatal blood microvascular endothelial cells, dermal-derived adult tempetatic microvascular endothelial cells dermal-derived	blood vessel blood vessel blood vessel blood vessel	normal normal normal
HMVEC-dBI-Ad HMVEC-dBI-Neo HMVEC-dLy-Ad HMVEC-dLy-Ad	3 outil terminated mesenclightal setting term cells from mark (what our setting) 3 adult dermal microvascular endothelial cells, 3 adult dermal-microvascular endothelial cells, dermal-derived 3 adult lymphatic microvascular endothelial cells, dermal-derived 3 adult lymphatic microvascular endothelial cells, dermal-derived 3 adult lymphatic microvascular endothelial cells, dermal-derived	blood vessel blood vessel blood vessel blood vessel blood vessel	normal normal normal normal

HMVEC-dNeo	3 neonatal microvascular endothelial cells (single donor), dermal-derived	blood vessel	normal
UNDCEDIC	2 non nigmont cilipnu ottabila calle	onitholium	normal
Lion	3 horipginent chary epitiena cens	epithenutri	normal
HOB	3 Undifferentiated Osteoblasts from two individuals, HOB_0090202.1 and HOB_0091301 from femoral nead	cancellous bone	normal
HOB_0090202.1	3 Undifferentiated Osteoblasts from femoral head	cancellous bone	normal
HOB_0091301	3 Undifferentiated Osteoblasts from femoral head	cancellous bone	normal
HPAEC	3 pulmonary artery endothelial cells.	blood vessel	normal
HPAEpiC	3 pulmonary alveolar epithelial cells	epithelium	normal
HPAF	3 pulmonary artery fibroblasts	blood vessel	normal
HPDE6-E6E7	3 nancreatic duct cells immortalized with FGE7 gene of HPV	nancreatic duct	normal
HDALE	a pariodanta liizamant filozofiaste	enithelium	normal
HDIERC	2 Desental Esthelia Calls american	placenta	normal
	S Pracentar Epithema cens anniouc memorane	placenta	normai
HPIEpC_9012801.2	3 Placental Epithelial Cells amniotic memorane	placenta	normal
HPIEpC_9041503.2	3 Placental Epithelial Cells amniotic membrane	placenta	normal
HRCEpiC	3 renal cortical epithelial cells	epithelium	normal
HRE	3 renal epithelial cells	epithelium	normal
HRGEC	3 renal glomerular endothelial cells	kidney	normal
HRPEpiC	3 retinal pigment epithelial cells	epithelium	normal
HS-N/EC	2. Sandar Promote Epidetical Calls from two individuals. HCaVEC 0100101 15 and HCaVEC 0022202 16 from thigh	blood vossal	normal
HSaVEC 0022202.16		blood vessel	normal
HSAVEC_0022202.18	S septemos ven enconenar cens non migh	biood vessel	normai
HSaVEC_9100101.15	3 Saphenous Vein Endothelial Cells from thigh	blood vessel	normal
HSMM	3 skeletal muscle myoblasts	muscle	normal
HSMMtube	3 skeletal muscle myotubes differentiated from the HSMM cell line	muscle	normal
	trophoblast (HTR-8/SVneo) cell line, a thin layer of ectoderm that forms the wall of many mammalian blastulas and functions in the nutrition and implantation		
HTR8svn	3 of the embryo	blastula	normal
HVMF	3 villous mesenchymal fibroblast cells	connective	normal
HVME 6091203 3	3 Villous Mesenchymal Fibroblasts from villous tissue	nlacenta	normal
LV/ME_6100401.2	2 Villous Mesonchung Elizablacte from villous tissue	placenta	normal
HN/D 8120201 F	3 Vindus Mesencity Indi Tuto Diasts From Vince a sm 2 Unal fearantisted White Personal from Vince a sm 2 Unal fearantisted White Personal from Vince a sm 2 Unal fearantisted Vince A statements and the statement of the statem	subsutaneous adinasa tissua	normal
	s online entrated white Preadportes from upper ann	subcutaneous autpose tissue	normai
IPS_NFID2_IPS4	3 induced pluripotent stem cell line 4 derived from skin fibroblast of a 30 year old donor, same donor as IPS_hFib2_IPS5	induced pluripotent cell (IPS)	normal
iPS_hFib2_iPS5	3 induced pluripotent stem cell line 5 derived from skin fibroblast of a 30 year old donor, same donor as iPS_hFib2_iPS4	induced pluripotent cell (iPS)	normal
Kidney_BC	3 kidney, parental cell type to donors 01-11002 and H12817N	kidney	normal
	Primary frozen kidney tissue from NICHD donor IDs 1104 (Rep B1 DNase), 602 (Rep B2 DNase), 1442 (Rep B3 DNase), 1863 (Rep B3 FAIRE) and NCTC donor ID 10	-	
Kidney OC	3 0022A (Rep B1 FAIRE)	kidnev	normal
			normai
	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an		
LHSR	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncoercie callelo df H-ras (R).	epithelium	normal
LHSR Liver OC	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R).	epithelium liver	normal
LHSR Liver_OC	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary tissue from the right portion of a standard liver procurement from a 6 year old female.	epithelium liver	normal normal
LHSR Liver_OC Liver_STL004	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurrement from a 6 year old female.	epithelium liver liver	normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary frozen liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary fiver tissue of a standard liver procurement from a 36 year old caucasian male.	epithelium liver liver liver enithelium	normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells	epithelium liver liver liver epithelium	normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE_RA	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 9 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells 3 bronchial epithelial cells	epithelium liver liver epithelium bronchial epithelium	normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE_RA NHDF	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary forzen liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary fiver tissue of a standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells 4 bronchial epithelial cells with retinoic acid 3 Dermal Fibroblasts from temple / breast	epithelium liver liver liver epithelium bronchial epithelium skin	normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE_RA NHDF-N NHDF-Ad	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells with retinoic acid 3 Dermal Fibroblasts from temple / breast 3 adult dermal fibroblasts	epithelium liver liver epithelium bronchial epithelium skin skin	normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE_RA NHDF- NHDF-Ad NHDF-neo	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 9 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 9 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 9 bronchial epithelial cells 9 bronchial epithelial cells with retinoic acid 9 Dermal Fibroblasts from temple / breast 9 adult dermal fibroblasts	epithelium liver liver epithelium bronchial epithelium skin skin skin	normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHDF-Ad NHDF-Ad NHDF-neo NHDF-neo NHDF-neo NHDF-0600801.3	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary forzen liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary fiver tissue of a standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells 4 bronchial epithelial cells with retinoic acid 3 Dermal Fibroblasts from temple / breast 3 adult dermal fibroblasts 3 neonatal dermal fibroblasts 3 Dermal Fibroblasts (Precedent)	epithelium liver liver epithelium bronchial epithelium skin skin skin skin	normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL014 NHBE NHBE_RA NHDF-NOF NHDF-Ad NHDF-ne0 NHDF-0060801.3 NHDF 701701.2	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells 4 bronchial epithelial cells 5 bronchial epithelial cells 6 Dermal Fibroblasts from temple / breast 6 adult dermal fibroblasts 7 neonatal dermal fibroblasts from temple 9 Dermal Fibroblasts from temple 9 Dermal Fibroblasts from temple 9 Dermal Fibroblasts from temple	epithelium liver liver epithelium bronchial epithelium skin skin skin skin	normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE RA NHDF NHDF-Rd NHDF-R0 NHDF-R00 NHDF_0060801.3 NHDF_7001701.2 NHFK	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 9 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 9 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 9 bronchial epithelial cells with retinoic acid 9 bronchial epithelial cells with retinoic acid 9 Dermal Fibroblasts from temple / breast 9 adult dermal fibroblasts 9 neonatal dermal fibroblasts 9 Dermal Fibroblasts from temple 9 Dermal Fibroblasts from temple	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin	normal normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE_RA NHDF-NHDF NHDF_OD60801.3 NHDF-ne0 NHDF_0060801.3 NHDF_0060801.3 NHDF_0071701.2 NHEK M2	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 9 Primary liver tissue fa standard liver procurement from a 36 year old female. 9 Primary liver tissue fa standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells 9 bronchial epithelial cells with retinoic acid 9 Dermal Fibroblasts from temple / breast 9 adult dermal fibroblasts 9 Dermal Fibroblasts from temple 2 9 Dermal Fibroblasts from temple 9 De	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal normal normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE_RA NHDF- NHDF-Ad NHDF-neo NHDF-neo NHDF-noo NHDF_7071701.2 NHEK NHEK_MAD_F071202.2	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 6 year old caucasian male. 3 bronchial epithelial cells 4 bronchial epithelial cells 4 bronchial epithelial cells 5 bronchial epithelial cells 6 adult dermal fibroblasts 7 neonatal fibroblasts 8 neonatal dermal fibroblasts 9 Dermal Fibroblasts from temple 9 Dermal Fibroblasts from temgle 9 Dermal Fibroblasts from temgel 9 Dermal Fibroblasts from breast 9 epidermal keratinocytes 9 Epidermal Melanocytes (from two individuals, NHEM.f_M2_5071302.2 and NHEM.f_M2_6022001 from foreskin	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal normal normal normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE RA NHDF NHDF-ne0 NHDF-ne0 NHDF_0060801.3 NHDF_0060801.3 NHDF_7071701.2 NHEM_f_M2 NHEM_f_M2 NHEM_f_M2 NHEM_f_0020001	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 9 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 9 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 9 bronchial epithelial cells with retinoic acid 9 bronchial epithelial cells with retinoic acid 9 Dermal Fibroblasts from temple / breast 9 adult dermal fibroblasts 9 contrail efibroblasts from temple 9 Dermal Fibroblasts f	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal normal normal normal normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL014 Liver_STL011 NHBE NHBE_RA NHDF-NNHDF-NNHDF NHDF-0060801.3 NHDF-0060801.3 NHDF_0071701.2 NHEK NHEM.f_M2_5071302.2 NHEM.f_M2_5071302.2 NHEM.f_M2_6022001	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells 4 bronchial epithelial cells with retinoic acid 3 Dermal Fibroblasts from temple / breast 3 adult dermal fibroblasts 3 Dermal Fibroblasts from temple 4 peidermal keratinocytes 3 Epidermal Melanocytes from two individuals, NHEM.f_M2_5071302.2 and NHEM.f_M2_6022001 from foreskin 3 Epidermal Melanocytes (foreskin)	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal normal normal normal normal normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL011 NHBE NHBE RA NHDF-	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 6 year old female. 3 bronchial epithelial cells 3 bronchial epithelial cells 3 bronchial epithelial cells 3 adult dermal fibroblasts 3 neonatal dermal fibroblasts 3 Dermal Fibroblasts from temple 3 Dermal Fibroblasts from temst 9 epidermal keratinocytes 3 Epidermal Melanocytes (foreskin) 3 Epidermal Melanocytes (foreskin) 3 Epidermal Melanocytes (foreskin) 3 Epidermal Melanocytes (doult) from two individuals, NHEM_2_7011001.2 and NHEM_M2_7012030 from cheek / temple	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal normal normal normal normal normal normal normal normal normal normal normal normal normal normal normal
LHSR Liver_OC Liver_STL004 Liver_STL014 Uiver_STL011 NHBE NHBE_RA NHDF-MOCOS001.3 NHDF-Ad NHDF-0060801.3 NHDF_0060801.3 NHDF_7071701.2 NHEK_M2_S071302.2 NHEM.f_M2_S071302.2 NHEM.f_M2_S071302.2 NHEM.f_M2_S071302.2 NHEM_M2_S071302.2 NHEM_M2_S071302.2 NHEM_M2_S071302.2 NHEM_M2_S071302.2 NHEM_M2_S071302.2	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 9 Primary liver tissue fa standard liver procurement from a 36 year old caucasian male. 3 bronchial epithelial cells 9 bronchial epithelial cells with retinoic acid 9 Dermal Fibroblasts from temple / breast 9 adult dermal fibroblasts 9 nonatal dermal fibroblasts 9 Dermal Fibroblasts from temple 9 Dermal Melanocytes (foreskin) 9 Epidermal Melanocytes (foreskin) 9 Epidermal Melanocytes (foreskin) 9 Epidermal Melanocytes (adult) from two individuals, NHEM_M2_7011001.2 and NHEM_M2_7012303 from cheek / temple	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal
LHSR Liver_OC Liver_STL004 Liver_STL0104 Liver_STL011 NHBE NHBF_RA NHDF-NO NHDF-NO NHDF-NO NHDF-0060801.3 NHDF_0060801.3 NHDF_0060801.3 NHDF_0010.2 NHEM_M2_00120 NHEM_M2_00120 NHEM_M2_00120 NHEM_N2_0000 NHEM_N2_0000 NHEM_N2_00000 NHEM_N2_000	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 3 Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 6 year old female. 3 bronchial epithelial cells b bronchial epithelial cells b bronchial epithelial tells a duit dermal fibroblasts a neonatal dermal fibroblasts 3 Dermal Fibroblasts from temple 3 Epidermal Melanocytes (foreskin) 3 Epidermal Melanocytes (foreskin) 3 Epidermal Melanocytes (foreskin) 3 Epidermal Melanocytes (foreskin) 3 Epidermal Melanocytes (adult) from two individuals, NHEM_M2_7011001.2 and NHEM_M2_7012303 from cheek / temple	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal
LHSR Liver_OC Liver_STL004 Liver_STL0104 Liver_STL011 NHBE NHBE RA NHDF-	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 9 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 Primary frozen liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue for the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 6 year old caucasian male. 9 bronchial epithelial cells with retinoic acid 3 bornchial epithelial cells with retinoic acid 3 meanal fibroblasts from temple / breast 3 adult dermal fibroblasts 9 memal Fibroblasts from temple 4 Dermal Fibroblasts from temple 9 Dermal Fibroblasts from temple 9 Dermal Fibroblasts from temple 9 Epidermal Melanocytes (foreskin) 8 Epidermal Melanocytes (foreskin) 8 Epidermal Melanocytes (foreskin) 8 Epidermal Melanocytes (dut) from two individuals, NHEM_f_M2_7011001.2 and NHEM_fM2_7012303 from cheek / temple 8 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from foreskin 9 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from temple 9 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from temple 9 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from temple 9 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from temple 9 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from temple 9 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from temple 9 Epidermal Melanocytes (adut) from two individuals, NHEM_STOR 2000 from temple 9 Human olfactory neurosphere-derived cells from mucosal biopsies	epithelium liver liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal normal
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LHSR Liver_OC Liver_STL004 Liver_STL0104 Liver_STL011 NHBE NHBE_RA NHDF- NHDF- NHDF- NHDF- NHDF- NHDF- NHDF_	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 rimary liver tissue from the right portion of a standard liver procurement from a 6 year old female. 3 Primary liver tissue of a standard liver procurement from a 6 year old female. 9 ronchial epithelial cells 9 bronchial epithelial cells 9 bronchial epithelial cells 9 bronchial epithelial cells 9 adult dermal fibroblasts from temple / breast 9 adult dermal fibroblasts 9 neonatal dermal fibroblasts 9 Dermal Fibroblasts from temple 9 Epidermal Melanocytes (foreskin) 9 Epidermal Melanocytes (dault) from two individuals, NHEM_f_M2_7011001.2 and NHEM_f_M2_701203 from cheek / temple 9 Epidermal Melanocytes (adult) from temple 9 Human olfactory neurosphere-derived cells from mucosal biopsies 9 osteoblasts (NHOst) 9 Primary forzen pancreas tissue from NCTC donor IDs 09-0144A (Rep B1) and 10-0021A (Rep B2) 9 pancreatic islets from 2 donors, the sources of these primary cells are cadavers from National Disease Research Interchange (NDRI) and another sample isolated	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal no
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LHSR Liver_OC Liver_STL004 Liver_STL014 NHBE NHBE RA NHDF-MO NHDF-MO NHDF-0060801.3 NHDF 0060801.3 NHDF 0060801.3 NHDF 2071701.2 NHEM.f_M2 NHEM.f_M2 NHEM.f_M2 NHEM.f_M2_0012001 NHEM.f_M2_011001.2 NHEM.M2 NHEM_M2_7011001.2 NHEM_M2 NHEM NHEM NHEMA NH	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 rimary liver tissue for standard liver procurement from a 6 year old female. 9 Primary liver tissue fa standard liver procurement from a 56 year old caucasian male. 3 bronchial epithelial cells 9 bronchial epithelial cells with retinoic acid 3 bronchial epithelial cells with retinoic acid 3 coreanic libroblasts from temple / breast 3 adult dermal fibroblasts 9 normat libroblasts from temple / breast 3 acontaid ermal fibroblasts 9 Dermal Fibroblasts from temple / breast 3 epidermal Melanocytes (from two individuals, NHEM.f_M2_5071302.2 and NHEM.f_M2_6022001 from foreskin 4 Epidermal Melanocytes (foreskin) 4 Epidermal Melanocytes (foreskin) 4 Epidermal Melanocytes (foreskin) 4 Epidermal Melanocytes (foreskin) 4 Epidermal Melanocytes (adult) from two individuals, NHEM_M2_7011001.2 and NHEM_M2_7012303 from cheek / temple 4 Epidermal Melanocytes (adult) from temple 4 Human olfactory neurosphere-derived cells from mucosal biopsies 4 osteoblasts (NHOst) 4 Primary Index of the state of the st	epithelium liver liver epithelium bronchial epithelium skin skin skin skin skin skin skin skin	normal
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LHSR Liver_OC Liver_STL004 Liver_STL0104 Liver_STL011 NHBE NHBE_RA NHOF- NHOF-Ad NHOF-Ad NHOF-0060801.3 NHOF_0060801.3 NHOF_100 NHOF_0060801.3 NHOF_100 NHOF_100 NHOF_100 NHOF_100 NHOF_100 NHOF_100 NHEM_102_6071302.2 NHEM_102_602001 NHEM_M2_011001.2 NHEM_M2_7012001 NHEM_M2_7012001 NHEM_M2_7012030 OIf_neurosphere Osteobl Pancreas_OC PanIslets PBDEFetal PrEC Prostate_OC	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an 3 oncogenic allele of H-ras (R). 3 Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) 9 rimary liver tissue fa standard liver procurement from a 6 year old female. 9 Primary liver tissue fa standard liver procurement from a 5 year old female. 9 bronchial epithelial cells 9 bronchial epithelial cells with retinoic acid 9 bernal Fibroblasts from temple / breast 9 adult dermal fibroblasts 9 adult dermal fibroblasts 9 adult dermal fibroblasts 9 anothial epithelial cells with retinoic acid 9 bernal Fibroblasts from temple / breast 9 adult dermal fibroblasts 9 adult dermal fibroblasts from temple / Standard	epithelium liver liver liver epithelium bronchial epithelium skin	normal no
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LHSR Liver_OC Liver_STL004 Liver_STL014 NHBE NHBE RA NHDF-MO NHDF-MO NHDF-0060801.3 NHDF 0060801.3 NHDF 7071701.2 NHEM.f_M2 NHEM.f_M2_5071302.2 NHEM.f_M2_6022001 NHEM.f_M2_6022001 NHEM.f_M2_7011001.2 NHEM_M2 NHEM_M2_701203.3 Olf_neurosphere Osteobl Panlsiets PBDEFetal PricC Prostate_OC Psoas_muscle_OC RPTEC BWDF1	prostate epithelial cells (PrEC), multiple human donors, all of whom are HIV-1, Hepatitis B and Hepatitis C negative, treatment: to create LHSR, cells were infected with amphotropic retroviruses encoding the SV40 large T antigen (L), the telomerase catalytic subunit hTERT (H), the SV40 small T antigen (S) and an oncogenic allele of H-ras (R). Primary frozen liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) Primary liver tissue from NICHD donor IDs 1104 (Rep B1), 602 (Rep B2), 1442 (Rep B3) Primary liver tissue from the right portion of a standard liver procurement from a 6 year old female. Primary liver tissue from the right portion cald B bronchial epithelial cells bronchial epithelial cells with retinoic acid D bernal Fibroblasts from temple / breast a dult dermal fibroblasts D bernal Fibroblasts from temple / breast a dult dermal fibroblasts D bernal Fibroblasts from temple D ermal Melanocytes (adult) from temple D erman fibroblasts from temple D erman fibroblasts from NCC donor IDs 09-0144A (Rep B1) and 10-0021A (Rep B2) P ancreatic islets from 2 donors, the sources of these primary cells are cadavers from National Disease Research Interchange (NDRI) and another sample isolated D as in Bucher, P. et al., Assessment of a	epithelium liver liver epithelium bronchial epithelium skin	normal no

SAEC	3 small airway epithelial cells	epithelium	normal
Skeletal_Muscle_BC	3 skeletal muscle, parental cell type to donors 01-11002 and H12817N	skeletal muscle	normal
SkMC	3 Skeletal Striated Muscle Cells from two individuals, SkMC_9011302 SkMC_8121902.17 from M. pectoralis / Mm. intercostales	muscle	normal
SKMC	3 skeletal muscle cells	muscle	normal
SkMC 8121902.17	3 Skeletal Muscle Cells from Mm. intercostales	striated muscle	normal
SkMC 9011302	3 Skeletal Muscle Cells from M. pectoralis	striated muscle	normal
Small intestine OC	3 Primary frozen small intestine tissue from NCTC donor IDs 10-0063A (Rep B1) and 09-0143A (Rep B2)	small intestine	normal
Spleen OC	3 Primary frozen spleen tissue from NICHD door IDs 1863 (Ren B1) and 4548 (Ren B2)	snleen	normal
Stellate	3 henatic stellate cells, liver that was perfused with collagence and selected for henatic stellate cells hy density gradient	liver	normal
Stomach BC	S stomaste narental cell type to doors 01-1002 and 12817N	stomach	normal
Steindein_Se	similarly previous carry by the devices of previous of the device of from a 12 year old aid and immortalized by transfection with a temperature concision SV 40 large T antiger	Stornden	liointai
Urothelia	a none	urothelium	normal
		diothendin	normai
Desider	decloud cells (part of the mucous memorane lining uterus), Fetal memoranes were collected from women who underwent planned cesarean delivery at term,		
Decidua	s before labor and without rupture of memoranes	liver	normal
HAL	3 aduit liver, genomic DiNA purified from surgicality excised aduit numan liver	liver	normai
FIDROP_AGU8395	3 Tibroblasts taken from individuals with Parkinson's disease	skin fibroblast	normal
CD34+_Mobilized	3 hematopoietic progenitor cells- mobilized, from donor R001679.	blood	normal
CD34+_Mobilized	3 hematopoietic progenitor cells- mobilized, from donor R001679.	blood	normal
	skeletal myoblasts derived from satellite cells from the pectoralis major muscle of a 41 year old caucasian heart transplant donor, immortalized with lox-hygro-		
LHCN-M2	2 hTERT ("LH"), and Cdk4-neo ("CN"), Zhu et al. (2007) in Aging Cell, vol. 6, pp 515-523, newly promoted to tier 2: not in 2011 analysis.	skeletal muscle myoblast	normal
	chorion cells (outermost of two fetal membranes), fetal membranes were collected from women who underwent planned cesarean delivery at term, before		
Chorion	3 labor and without rupture of membranes.	fetal membrane	normal
HConF	3 conjunctival fibroblast	eye	normal
HEK293	3 embryonic kidney, cells contain Adenovirus 5 DNA (PMID: 11967234)	kidney	normal
	embryonic kidney cells transformed with Adenovirus 5 DNA stably expressing tetracycline repressor, HEK293 (ATCC number CRL-1573) is the parental cell line.		
HEK293-T-REx	3 hypotriploid. XXX	kidnev	normal
HEK293T	a embryonic kidney that expresses SV40 large T antigen HEK293 (ATCC number CRI-1573) is the narental cell line	kidney	normal
HSMM emb	S embryonic much act	muscle	normal
	2 original multiplication from Encine control Muscular Distrophy (ESHD) potients, muscle people biopsies	musele	normal
HSMMtube omb	3 primary myourast monitorial actoscapulonamenar widscalar bystrophy (13hb) patients, muscle needle biopsies	musele	normal
	S emplyonic myolade	muscle	
HSIMIVITUDE_FSHD	3 myotube from Facioscapulonumeral Muscular Dystrophy (FSHD) patient, muscle needle biopsies	muscle	normai
	3 induced pluripotent stem cell derived from skin filoroblast	Induced pluripotent stem cel	i normai
	2 IDC colls derived trees AC20AC2 tibreblast	induced pluripetent cell (iDC)	
IPS_NIHI11	S IPS CERIS CERIVECTIVITI ACCOURSE	induced plumpotent cell (IP3)	normal
IPS_NIHI1 IPS_NIHI7	3 iPS cells derived from AG08395 fibroblast	induced pluripotent cell (iPS)	normal
IPS_NIHITI IPS_NIHI7 Ishikawa	3 IPS cells derived from Ad20445 Introdust 3 IPS cells derived from Ad08395 fibroblast 3 endometrial adenocarcinoma	induced pluripotent cell (iPS) uterus	normal normal normal
IPS_NIHI11 IPS_NIHI7 Ishikawa	3 IPS cells derived from AG08395 fibroblast 3 IPS cells derived from AG08395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase	induced pluripotent cell (iPS) uterus	normal normal normal
IPS_NIHI11 IPS_NIHI7 Ishikawa MCF10A-Er-Src	 3 IPS cells derived from AG08395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 	induced pluripotent cell (iPS) uterus breast	normal normal normal
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD	 3 IPS cells derived from A020445 initiolosist 3 IPS cells derived from A0608395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets 	induced pluripotent cell (iPS) induced pluripotent cell (iPS) uterus breast pancreas	normal normal normal normal
IPS_NIHI11 IPS_NIHI7 Ishikawa MCF10A-Er-Src PBDE PBDE	3 IPS cells derived from AG0395 fibroblast 3 IPS cells derived from AG0395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as Panislets 3 peripheral blood-derived erythroblasts	induced pluripotent ceri (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood	normal normal normal normal normal normal
IPS_NIHI11 IPS_NIHI7 Ishikawa MCF10A-Er-Src PanIsletD PBDE pHTE	3 IPS cells derived from AG08395 fibroblast 3 IPS cells derived from AG08395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets 3 primary tracheal epithelial cells	induced pluripotent cell (iPS) induced pluripotent cell (iPS) uterus breast pancreas blood epithelium	normal normal normal normal normal normal
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib	3 IPS cells derived from AG08395 fibroblast 3 IPS cells derived from AG08395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as Panislets 3 peripheral blood-derived erythroblasts 4 primary tracheal epithelial cells 3 fibroblasts, Hutchinson-Cellford prograi syndrome (cell line HGPS, HGADEN167, progeria research foundation)	induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin	normal normal normal normal normal normal normal
IPS_NIHIT IPS_NIHIT Ishikawa MCF10A-Er-Src PanIsletD PBDE pHTE ProgFib prostate	3 IPS cells derived from AG0395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from AG0395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as Panislets 3 peripheral blood-derived erythroblasts 3 primary tracheal epithelial cells 3 fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADFN167, progeria research foundation) 3 prostate tissue purchased for CSHL project	induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate	normal normal normal normal normal normal normal normal
IPS_NIHI11 IPS_NIHI7 Ishikawa MCF10A-Er-Src PanIsletD PBDE pHTE ProgFib prostate BC Leukocyte UHN00204	3 IPS cells derived from AG204395 fibroblast 3 IPS cells derived from AG08395 fibroblast 3 IPS cells derived from AG08395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets 3 primary tracheal epithelial cells 3 fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADEN167, progeria research foundation) 3 porstate tissue purchased for CSH project 3 peripheral blood-noculear cell, donor UHN00204, age 54, caucasian, DNA extract	induced pluripotent cell (iPS) induced pluripotent cell (iPS) uterus breast blood epithelium skin prostate blood	normal no
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 MNNC-CB	3 IPS cells derived from AG0395 fibroblast 3 IPS cells derived from AG0395 fibroblast 3 IPS cells derived from AG0395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v.Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as Panislets 3 peripheral blood-derived erythroblasts 3 primary tracheal epithelial cells 3 fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADEN167, progeria research foundation) 3 prostate tissue purchased for CSHL project 3 peripheral blood-derived from UHN00204, age 54, caucasian, DNA extract 3 Mononuclear cells (umblical cord blood-single donor) from two individuals. hMNC-CB 911701.6 and hMNC-CB 8072802.6	induced pluripotent cell (iPS) induced pluripotent cell (iPS) uterus breast pancreas blood epithelium skin prostate blood blood	normal normal normal normal normal normal normal normal normal normal
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanIsletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB MMC-CB	3 IPS cells derived from AG0395 fibroblast 3 IPS cells derived from AG0395 fibroblast 3 endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase 3 oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) 3 dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets 3 peripheral blood-derived erythroblasts 3 primary tracheal epithelial cells 3 fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADFN167, progeria research foundation) 3 prostate tissue purchased for CSHL project 3 peripheral blood mononuclear cell, donor UHN00204, age 54, caucasian, DNA extract 3 Mononuclear Cells (umbilical cord blood-single donor) from two individuals, hMNC-CB_9111701.6 and hMNC-CB_8072802.6	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood blood blood	normal normal normal normal normal normal normal normal normal normal normal
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IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB hMNC-CB_9111701.6 hMNC-CB_911701.6	S IFS cells derived from A020445 Initiolosist S IFS cells derived from A020445 Initiolosist S IFS cells derived from A068395 fibroblast sendometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase a oncoprotein (vSrc) that is fued to the ligand-binding domain of the estrogen receptor (ER) dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets peripheral blood-derived erythroblasts primary tracheal epithelial cells fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADEN167, progeria research foundation) prostate tissue purchased for CSHL project peripheral blood-derived rold-single donor (HON2004, age 54, caucasian, DNA extract Mononuclear Cells, umbilical cord blood-single donor Mononuclear	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood blood blood blood blood	normal
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IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB hMNC-CB_3012802.6 hMNC-CB_9111701.6 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0022330.9 MMC-PB_0022330.9 MMC-PB_0022330.9 MMC-PB_002430.9 CD34+_Mobilized PBMC Adult_CO4_Th0 CD4+_Naive_Wb1870640 CD4+_Naive_Wb1895824 Cord_CD4_naive Cord_CD4_Th0 Adult_CO4_Th1	S IF3 cells derived from A020445 Initiality Since Served from A02045 Initiality Since Served from A063395 fibroblast Since Served from Served from Served from the National Disease Research Interchange (NDRI), same source as PanIslets Since Served from CSHL project Since Served from Served from CSHL project Since Served from Served fro	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus pancreas blood epithelium skin prostate blood	normal
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE PHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB_8072802.6 hMNC-CB_9111701.6 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0022330.9 MMCCAJ_naive Adult_CD4_naive Adult_CD4_naive Adult_CO4_naive Cord_CO4_naive Cord_CO4_naive Adult_CO4_Th1 Cord_CO4_Th1	S IFS cells derived from A020445 Initial and the set of the s	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood	normal
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB hMNC-CB MNC-CB_002230.9 hMNC-PB_002230.9 hMNC-PB_002230.9 CD34+_Mobilized PBMC Adult_CO4_naive Adult_CO4_Th0 CD4+_Naive_Wb1970640 COrd_CD4_TN0 Cord_CD4_TN0 Cord_CD4_TN0 Cord_CD4_TN1 Th0 Adult_CO4_TN1 Th1	If y cells derived from A020445 Initial and the served from A02045 Initial advector and the served from A02045 Initial advector and the served from A02045 Initial advector advect	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood	normal
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB hMNC-CB_002230.0 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0022330.9 MMC-PB_0022330.9 MMC-PB_0022330.9 CD34+_Mobilized PBMC Adult_CD4_naive CD4+_Naive_Wb1870640 CD4+_Naive_Wb1970640 Cord_CD4_Th0 Adult_CO4_Th1 Cord_CD4_Th1 Th_Wb54553204 Th1	S IF3 cells derived from A020445 Initiality S IF3 cells derived from A02045 S IF3 cells derived from A063395 fibroblast andometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase anocorrote (Vsrc) that is fused to the ligand-binding domain of the estrogen receptor (ER) dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets peripheral blood-derived erythroblasts primary tracheal epithelial cells primary tracheal epithelial cells fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADEN167, progeria research foundation) prostate tissue purchased for CSHL project peripheral blood mononuclear cell, donor UHN00204, age 54, caucasian, DNA extract mononuclear Cells, umbilical cord blood-single donor from two individuals, hMNC-CB_9111701.6 and hMNC-CB_8072802.6 Mononuclear Cells, unbilical cord blood-single donor Mononuclear Cells, peripheral blood-single donor Monon	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus pancreas blood epithelium skin prostate blood	normal no
IPS_NIHIT IPS_NIHIT Ishikawa MCF10A-Er-Src PanisletD PBDE PHTE ProgFib prostate BC_Leukoxyte_UHN00204 hMNC-CB_8072802.6 hMNC-CB_9111701.6 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0082430.9 C024+_Mobilized PBMC Adult_C04_naive Adult_C04_naive Adult_C04_naive Cord_L04+_naive Cord_C04_th0 Adult_C04_Th1 Cord_C04_Th0 Adult_C04_Th1 Th1 Th1	S IF3 cells derived from A020445 Initiality S IF3 cells derived from A02045 Initiality S IF3 cells derived from A080395 fibroblast S endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase a oncoprotein (v-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets a peripheral blood-derived erythroblasts primary tracheal epithelial cells fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADFN167, progeria research foundation) prostate tissue purchased for CSHL project a peripheral blood mononuclear cell, donor UHN00204, age 54, caucasian, DNA extract Mononuclear Cells (unbilical cord blood-single donor) from two individuals, hMNC-CB_9111701.6 and hMNC-CB_8072802.6 Mononuclear Cells (unbilical cord blood-single donor) Mononuclear Cells (peripheral blood-single donor) Mononuclear Cells (peripheral blood-single donor Mononuclear Cells, peripheral blood-single donor Mononuclear Cells, mobilized, from dono RO01679. Prejheral blood mononuclear cells Cell+ realve sorted cells, donor is Caucasian, male 26 year old, primary pheresis of single normal subject CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from cord blood and enriched for Th0 populations CD4+ cells isolated from cord blood and enriched for Th0 populations CD4+ cells isolated f	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood	normal no
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB_072802.6 hMNC-CB_072802.6 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0082430.9 CD24+_Mobilized PBMC Adult_CD4_naive Cord_CD4_Naive_Wb11970640 CD4+_Naive_Wb78495824 Cord_CD4_Th0 Adult_CO4_Th0 Adult_CO4_Th1 Th1_ MD Adult_CO4_Th1 Th1 Th1 Th1 Th1 Th1 Th2	S IFS cells derived from Ad20445 Initial and the set of the s	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood	normal no
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB hMNC-CB MMC-CB_002230.9 hMNC-PB hMNC-PB_002230.9 hMNC-PB_002230.9 hMNC-PB_002230.9 MMC-PB_002230.9 CD34+_Mobilized PBMC Adult_CD4_naive CD4+_Naive_Wb11970640 CD4+_Naive_Wb1895824 Cord_CD4_Th0 Adult_CO4_Th1 Cord_CD4_Th1 Cord_CD4_Th1 Th1_Wb54553204 Th1 Th2_Wb33676984 Th2_Wb33676984	S Fields Gerived From AGS0395 fibroblast Since Set Serived From AGS0395 fibroblast and metrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase anocported in (vSrc) that is fused to the ligand-binding domain of the estrogen receptor (ER) dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets primary tracheal epithelial cells primary tracheal epithelial cells fibroblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADEN167, progeria research foundation) prostate tissue purchased for CSHL project seripheral blood-donclear cell, donor UHN00204, age 54, caucasian, DNA extract Mononuclear Cells (umbilical cord blood-single donor) from two individuals, hMNC-CB_9111701.6 and hMNC-CB_8072802.6 Mononuclear Cells (umbilical cord blood-single donor) Mononuclear Cells (peripheral blood-single donor Mononuclear Cells (peripheral blood-single donor Mononuclear Cells (peripheral blood-single donor Mononuclear Cells, peripheral blood-single donor Mononuclear Cells (peripheral blood-single donor Mononuclear Cells (peripheral blood-and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from human blood and enriched for Th1 populations CD4+ cells isolated from human blood and enriched for Th1 populations CD4+ cells isolated from human bl	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood	normal no
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE PHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB_0223802.6 hMNC-CB_011701.6 hMNC-PB_0022330.9 hMNC-PB_0022330.9 hMNC-PB_0082430.9 C024+_Mobilized PBMC Adult_CO4_naive Adult_CO4_naive Adult_CO4_naive Adult_CO4_naive Cord_Loh_naive Cord_Loh_naive Cord_CD4_Th0 Cord_CD4_Th1 Th1 Th2_Wb33676984 Th2_Wb33676984 Th2_Wb54553204	S Fields Gerived From AGS0395 fibroblast Since decimal adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase anocported in (vSrc) that is fused to the ligand-binding domain of the estrogen receptor (ER) dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as PanIslets peripheral blood-derived erythroblasts primary tracheal epithelial cells firinoplasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADEN167, progeria research foundation) prostate tissue purchased for CSHL progeria dyndrome (cell line HGPS, HGADEN167, progeria research foundation) prostate tissue purchased for CSHL progeria dyndrome (cell on the individuals, hMNC-CB_9111701.6 and hMNC-CB_8072802.6 Mononuclear Cells, unbilical cord blood-single donor Mononuclear Cells, unbilical cord blood-single donor Mononuclear Cells, unbilical cord blood-single donor Mononuclear Cells, peripheral blood-single donor Mononuclear Cells, donor is Causasian, male 26 year old, primary pheresis of single normal subject CD4+ cells isolated from human blood and enriched for Th0 populations CD4+ cells isolated from cord blood and enriched for Th0 populations CD4+ cells isolated from cord blood and enriched for Th0 populations CD4+ cells isolated from cord blood and enriched for Th0 populations CD4+ cells isolated from cord blood and enriched for	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus breast pancreas blood epithelium skin prostate blood	normal no
IPS_NIH11 IPS_NIH17 Ishikawa MCF10A-Er-Src PanisletD PBDE pHTE ProgFib prostate BC_Leukocyte_UHN00204 hMNC-CB hMNC-CB MNC-CB PBDE hMNC-PB hMNC-PB hMNC-PB Adut_CO4_naive Adut_CO4_naive Adut_CO4_naive Adut_CO4_naive Adut_CO4_naive Cord_CO4_naive Cord_CO4_naive Adut_CO4_Th1 Th1 Th2_wb3s576984 Th2_wb3s319432	 a) Fix Cells derived from AG20445 introduist. a) Fix Cells derived from AG20455 fibrobiast a) Fix Cells derived from AG20455 fibrobiast a) endometrial adenocarcinoma mammary gland, non-tumorigenic epithelial, inducible cell line, derived from the MCF-10A parental cells and contain ER-Src, a derivative of the Src kinase a) oncoprotein (V-Src) that is fused to the ligand-binding domain of the estrogen receptor (ER) a) dedifferentiated human pancreatic islets from the National Disease Research Interchange (NDRI), same source as Panislets a) peripheral blood-derived erythroblasts a) primary tracheal epithelial cells a) Introblasts, Hutchinson-Gilford progeria syndrome (cell line HGPS, HGADFN167, progeria research foundation) b) prostate tissue purchased for CSHL project b) project b) project Cells (umbilical cord blood-single donor) from two individuals, hMNC-CB_9111701.6 and hMNC-CB_8072802.6 b) Mononuclear Cells, umbilical cord blood-single donor b) Mononuclear Cells, umbilical cord blood-single donor c) Mononuclear Cells, peripheral blood-single donor RO01679. c) peripheral blood on enriched for naive populations c) CD4 + cells isolated from human blood and enriched for Th0 populations c) CD4 + cells isolated from human blood and enriched for Th0	Induced pluripotent cell (IPS) induced pluripotent cell (IPS) uterus preast pancreas blood epithelium skin prostate blood	normal no

Key	
cell_Line_name	Cell line name
ENCODE_Tier	ENCODE tier (phase)
Description	Description of ENCODE cell line
Tissue	Tissue or cell type
Karyotype	Karyotype (Normal or cancer)
Cell Bucket for analysis	Major cell type associated to cell line for this analysis
B:	B cells
T:	T cells
M:	Monocytes/macrophages
0:	Other
L:	Lung

Supplementary Table 5. Epigenomic Roadmap Project cells used in this analysis

Standardized Epigenome name	Epigenome name (from EDACC Release 9 directory)	ANATOMY	TYPE Cell Bud	cket for Aanalysis
Primary B cells from cord blood	CD19_Primary_Cells_Cord_BI	BLOOD	PrimaryCell	В
Primary B cells from peripheral blood	CD19_Primary_Cells_Peripheral_UW	BLOOD	PrimaryCell	В
GM12878 Lymphoblastoid Cell Line	GM12878_Lymphoblastoid	BLOOD	CellLine	В
Brain Cingulate Gyrus	Brain_Cingulate_Gyrus	BRAIN	PrimaryTissue	C
Brain Dorsolateral Prefrontal Cortex	Brain_Dorsolateral_Prefrontal_Cortex	BRAIN	Primarylissue	<u> </u>
Brain Germinal Matrix	Brain_Germinal_Matrix	BRAIN	Primaryl issue	С С
Brain Hippocampus Midule	Brain_Hippocampus_Middle	BRAIN	PrimaryTissue	
Brain Substantia Nigra	Brain_Substantia_Nigra	DIAIN	Priman/Tissue	C
Cortex derived primary cultured neurospheres	Neurosphere Cultured Cells Cortex Derived	BRAIN	PrimaryCell	C
Eetal Brain Eemale	Fetal Brain Female	BRAIN	PrimaryTissue	C
Brain Angular Gyrus	Brain Angular Gyrus	BRAIN	PrimaryTissue	C
Brain Anterior Caudate	Brain Anterior Caudate	BRAIN	PrimaryTissue	C
Fetal Brain Male	Fetal Brain Male	BRAIN	PrimaryTissue	C
Ganglion Eminence derived primary cultured neurospheres	Neurosphere Cultured Cells Ganglionic Eminence Derived	BRAIN	PrimaryCell	C
H9 Derived Neuronal Progenitor Cultured Cells	H9_Derived_Neuronal_Progenitor_Cultured_Cells	ESC_DERIVED	CellLineDerived	С
H1 Derived Neuronal Progenitor Cultured Cells	H1 Derived Neuronal Progenitor Cultured Cells	ESC DERIVED	CellLineDerived	С
H9 Derived Neuron Cultured Cells	H9_Derived_Neuron_Cultured_Cells	ESC_DERIVED	CellLineDerived	С
H1 Derived Mesenchymal Stem Cells	H1_Derived_Mesenchymal_Stem_Cells	ESC_DERIVED	CellLineDerived	L
IMR90 fetal lung fibroblasts Cell Line	IMR90_Cell_Line	LUNG	CellLine	L
NHLF Lung Fibroblast Primary Cells	NHLF_Lung_Fibroblasts	LUNG	PrimaryCell	L
Fetal Lung	Fetal_Lung	LUNG	PrimaryTissue	L
Lung	Lung	LUNG	PrimaryTissue	L
Monocytes-CD14+ RO01746 Primary Cells	Monocytes-CD14+_RO01746	BLOOD	PrimaryCell	M
Primary monocytes from peripheral blood	CD14_Primary_Cells	BLOOD	PrimaryCell	M
Fetal Adrenal Gland	Fetal_Adrenal_Gland	ADRENAL	PrimaryTissue	0
Primary hematopoietic stem cells	CD34_Primary_Cells	BLOOD	PrimaryCell	0
Primary hematopoietic stem cells G-CSF-mobilized Female	Mobilized_CD34_Primary_Cells_Female	BLOOD	PrimaryCell	0
Primary hematopoietic stem cells G-CSF-mobilized Male	Mobilized_CD34_Primary_Cells_Male	BLOOD	PrimaryCell	0
Primary hematopoietic stem cells short term culture	CD34_Cultured_Cells	BLOOD	PrimaryCell	0
Primary mononuclear cells from peripheral blood	Peripheral_Blood_Mononuclear_Primary_Cells	BLOOD	PrimaryCell	0
Primary neutrophils from peripheral blood	CD15_Primary_Cells	BLOOD	PrimaryCell	0
Osteoblast Primary Cells	Osteoblasts	BONE	PrimaryCell	0
Breast Myoepithelial Primary Cells	Breast_Myoepithelial_Cells	BREAST	PrimaryCell	0
Breast variant Human Mammary Epithelial Cells (vHMEC)	Breast_vHMEC	BREAST	PrimaryCell	0
HMEC Mammary Epithelial Primary Cells	HMEC_Mammary_Epithelial	BREAST	PrimaryCell	0
HUES6 Cell Line	HUES6_Cell_Line	ESC	CellLine	0
ES-UCSF4 Cell Line	4star	ESC	CellLine	0
ES-I3 Cell Line	ES-I3_Cell_Line	ESC	CellLine	0
ES-WA7 Cell Line	ES-WA7_Cell_Line	ESC	CellLine	0
H1 Cell Line	H1_Cell_Line	ESC	CellLine	0
H9 Cell Line	H9_Cell_Line	ESC	CellLine	0
HUES48 Cell Line	HUES48_Cell_Line	ESC	CellLine	0
HUES64 Cell Line	HUES64_Cell_Line	ESC	CellLine	0
H1 BMP4 Derived Mesendoderm Cultured Cells	H1_BMP4_Derived_Mesendoderm_Cultured_Cells	ESC_DERIVED	CellLineDerived	0
H1 BMP4 Derived Trophoblast Cultured Cells	H1_BMP4_Derived_Trophoblast_Cultured_Cells	ESC_DERIVED	CellLineDerived	0
hESC Derived CD184+ Endoderm Cultured Cells	hESC_Derived_CD184+_Endoderm_Cultured_Cells	ESC_DERIVED	CellLineDerived	0
hESC Derived CD56+ Ectoderm Cultured Cells	hESC_Derived_CD56+_Ectoderm_Cultured_Cells	ESC_DERIVED	CellLineDerived	0
hESC Derived CD56+ Mesoderm Cultured Cells	hESC_Derived_CD56+_Mesoderm_Cultured_Cells	ESC_DERIVED	CellLineDerived	0
Adipose Derived Mesenchymal Stem Cell Cultured Cells	Adipose_Derived_Mesenchymal_Stem_Cell_Cultured_Cells	FAT	PrimaryCell	0
Adipose Nuclei	Adipose_Nuclei	FAT	PrimaryTissue	0
Mesenchymal Stem Cell Derived Adipocyte Cultured Cells	Mesenchymal_Stem_Cell_Derived_Adipocyte_Cultured_Cells	FAT	CellLineDerived	0
Colon Smooth Muscle	Colon_Smooth_Muscle	GI_COLON	PrimaryTissue	0
Colonic Mucosa	Colonic_Mucosa	GI_COLON	PrimaryTissue	0
Sigmoid Colon	Sigmoid_Colon	GI_COLON	Primarylissue	0
Duodenum Mucosa	Duodenum_Mucosa	GI_DUODENUM	Primarylissue	0
Duodenum Smooth Muscle	Duodenum_Smootn_Muscle	GI_DUODENUM	Primary I issue	0
Esophagus	Esopliagus	GI_ESOPHAGOS	Primary Tissue	0
Fetal Intestine Large	Fetal_Intestine_Large		PrimaryTissue	0
Small Intestine	Small Intestine		Primap/Tissue	0
Pactal Mucosa Dopor 29	Bestal Musesa Dopor 29	GL RECTUM	Priman/Tissue	0
Rectal Mucosa Donor 21	Rectal_Mucosa.Donor_29	GL RECTUM	Primap/Tissue	0
Rectal Smooth Muscle	Rectal Smooth Muscle	GL RECTUM	PrimaryTissue	0
Castric	Costric		Priman/Tissue	0
Stomach Mucosa	Stomach Mucosa	GL STOMACH	PrimaryTissue	0
Stomach Smooth Muscle	Stomach Smooth Muscle	GL STOMACH	PrimaryTissue	0
Fetal Heart	Fetal Heart	HEART	PrimaryTissue	0
Left Ventricle	Left Ventricle	HEART	PrimaryTissue	0
Right Atrium	Right Atrium	HEART	PrimaryTissue	0
Right Ventricle	Right_Ventricle	HEART	PrimaryTissue	0
iPS-20b Cell Line	iPS-20b Cell Line	IPSC	CellLine	0
iPS DF 6.9 Cell Line	iPS DF 6.9 Cell Line	IPSC	CellLine	0
iPS DF 19.11 Cell Line	iPS DF 19.11 Cell Line	IPSC	CellLine	0
iPS-15b Cell Line	iPS-15b Cell Line	IPSC	CellLine	0
iPS-18 Cell Line	iPS-18 Cell Line	IPSC	CellLine	0
Fetal Kidney	Fetal Kidney	KIDNEY	PrimaryTissue	0
Liver	Adult_Liver	LIVER	PrimaryTissue	0
Psoas Muscle	Psoas_Muscle	MUSCLE	PrimaryTissue	0
Fetal Muscle Trunk	Fetal_Muscle_Trunk	MUSCLE	PrimaryTissue	0
HSMM Skeletal Muscle Myoblasts Cell Line	HSMM_Skeletal_Muscle_Myoblasts	MUSCLE	CellLine	0
Muscle Satellite Cultured Cells	Muscle_Satellite_Cultured_Cells	MUSCLE	PrimaryCell	0
Skeletal Muscle Female	Skeletal_Muscle_Female	MUSCLE	PrimaryTissue	0
Skeletal Muscle Male	Skeletal_Muscle_Male	MUSCLE	PrimaryTissue	0
Fetal Muscle Leg	Fetal_Muscle_Leg	MUSCLE_LEG	PrimaryTissue	0
Ovary	Ovary	OVARY	PrimaryTissue	0
Pancreas	Pancreas	PANCREAS	PrimaryTissue	0
Pancreatic Islets	Pancreatic_Islets	PANCREAS	PrimaryTissue	0
Placenta	Fetal_Placenta	PLACENTA	PrimaryTissue	0
Placenta Amnion	Placenta_Amnion	PLACENTA	PrimaryTissue	0
NHDF-Ad Adult Dermal Fibroblast Primary Cells	NHDF-Ad_Adult_Dermal_Fibroblasts	SKIN	PrimaryCell	0
NHEK-Epidermal Keratinocyte Primary Cells	NHEK-Epidermal_Keratinocytes	SKIN	PrimaryCell	0
Foreskin Fibroblast Primary Cells skin01	Penis_Foreskin_Fibroblast_Primary_Cells_skin01	SKIN	PrimaryCell	0
Foreskin Fibroblast Primary Cells skin02	Penis_Foreskin_Fibroblast_Primary_Cells_skin02	SKIN	PrimaryCell	0
Foreskin Keratinocyte Primary Cells skin02	Penis_Foreskin_Keratinocyte_Primary_Cells_skin02	SKIN	PrimaryCell	0
Foreskin Keratinocyte Primary Cells skin03	Penis Foreskin Keratinocyte Primary Cells skin03	SKIN	PrimaryCell	0

Foreskin Melanocyte Primary Cells skin01 Penis_Foreskin_Melanocyte_Primary_Cells_skin01 SKIN Pri	PrimaryCell C)
Foreskin Melanocyte Primary Cells skin03 Penis_Foreskin_Melanocyte_Primary_Cells_skin03 SKIN Pr	rimaryCell C)
Spleen Spleen SPLEEN Pr	PrimaryTissue C)
Bone Marrow Derived Cultured Mesenchymal Stem Cells Bone_Marrow_Derived_Mesenchymal_Stem_Cell_Cultured_Cells STROMAL_CONNECTIVE Pr	rimaryCell C	C
Mesenchymal Stem Cell Derived Chondrocyte Cultured Cells Chondrocytes_from_Bone_Marrow_Derived_Mesenchymal_Stem_Cell_Cultured_Cells STROMAL_CONNECTIVE Pr	rimaryCell C)
Thymus Thymus THYMUS Pr	rimaryTissue C)
Aorta Aorta VASCULAR Pr	rimaryTissue C)
HUVEC Umbilical Vein Endothelial Primary Cells HUVEC_Umbilical_Vein_Endothelial_Cells VASCULAR Pr	rimaryCell C)
Primary Natural Killer cells from peripheral blood CD56_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T CD8+ memory cells from peripheral blood CD8_Memory_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T CD8+ naive cells from peripheral blood CD8_Naive_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T cells effector/memory enriched from peripheral blood CD4+_CD25int_CD127+_Tmem_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T cells from cord blood CD3_Primary_Cells_Cord_BI BLOOD Pr	rimaryCell T	Г
Primary T cells from peripheral blood CD3_Primary_Cells_Peripheral_UW BLOOD Pr	rimaryCell T	Г
Primary T helper cells from peripheral blood CD4+_CD25Th_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T helper cells PMA-I stimulated CD4+_CD25LL17PMA-Ionomycin_stimulated_MACS_purified_Th_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T helper memory cells from peripheral blood 1 CD4+_CD25CD45RO+_Memory_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T helper memory cells from peripheral blood 2 CD4_Memory_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T helper naive cells from peripheral blood CD4_Naive_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T helper naive cells from peripheral blood CD4+_CD25CD45RA+_Naive_Primary_Cells BLOOD Pr	rimaryCell T	Г
Primary T helper 17 cells PMA-I stimulated CD4+_CD25IL17+_PMA-Ionomcyin_stimulated_Th17_Primary_Cells BLOOD Pr	rimaryCell Th:	17
Primary T regulatory cells from peripheral blood CD4+_CD25+_CD127Treg_Primary_Cells BLOOD Pr	PrimaryCell Tre	eg

Кеу	
Standardized Epigenome name	Name of cell line
Epigenome name (from EDACC Release 9 directory)	alias
ANATOMY	cell type or tissue of procedence
TYPE	primary or established cell line
Cell Bucket for Aanalysis	Major cell type associated to cell line for this analysis
B:	B cells
T:	T cells
M:	Monocytes/macrophages
0:	Other
L:	Lung

Supplementary Table 6. Assignment of regulatory features into broad categories for this analysis

Histone modification or variant	Putative functions
H2az	Histone protein variant (H2A.Z) associated with regulatory elements with dynamic chromatin
H3k4me1	Mark of regulatory elements associated with enhancers and other distal elements, but also enriched downstream of transcription starts
H3k04me1	Mark of regulatory elements associated with enhancers and other distal elements, but also enriched downstream of transcription starts
H3k4me2	Mark of regulatory elements associated with promoters and enhancers
H3k04me2	Mark of regulatory elements associated with promoters and enhancers
H3k4me2	Mark of regulatory elements associated with promoters and enhancers
H3k04me2	Mark of regulatory elements associated with promoters and enhancers
H3k4me3	Mark of regulatory elements primarily associated with promoters/transcription starts
H3k04me3	Mark of regulatory elements primarily associated with promoters/transcription starts
H3k04me3Ohtam	Mark of regulatory elements primarily associated with promoters/transcription starts
H3k9ac	Mark of active regulatory elements with preference for promoters
H3k09ac	Mark of active regulatory elements with preference for promoters
H3k9me1	Preference for the 5' end of genes
H3k09me1	Preference for the 5' end of genes
H3k9me3	Repressive mark associated with constitutive heterochromatin and repetitive elements
H3k09me3	Repressive mark associated with constitutive heterochromatin and repetitive elements
H3k27ac	Mark of active regulatory elements; may distinguish active enhancers and promoters from their inactive counterparts
H3k27ac	Mark of active regulatory elements; may distinguish active enhancers and promoters from their inactive counterparts
H3k27me3	Repressive mark established by polycomb complex activity associated with repressive domains and silent developmental genes
H3k36me3	Elongation mark associated with transcribed portions of genes, with preference for 3' regions after intron 1
H3k79me2	Transcription-associated mark, with preference for 5' end of genes
H4k20me1	Preference for 5' end of genes
Active TSS	
Flanking Active TSS	
Transcr. at gene 5' and 3'	Transcription/Elongation marker observed
Strong transcription	Transcription/Elongation marker observed
Weak transcription	Transcription/Elongation marker observed
Genic enhancers	
Enhancers	
ZNF genes & repeats	ZNF genes harbor 3' repeats and have promoter and elongation markers. However, they don't seem to promote any gene activity tested.
Heterochromatin	Dead zone
Bivalent/Poised TSS	Inactive Promoter
Flanking Bivalent TSS/Enh	Inactive Enhancer
Bivalent Enhancer	Inactive Enhancer
Repressed PolyComb	
Weak Repressed PolyComb	
Quiescent/Low	No/low marker activity
Kov	

Histone modification or variant	Type of regulatory element or histone modification
Putative functions	predicted regulatory function
Bucket_for_analysis	Major regulatory function associated to element for this analysis