Scale 100 bases hg19 54,349,400 chr12: 54,349,250 54,349,300 54,349,350 54,349,450 GenBank, CCDS, Rfam, tRNAs & Comparative Genomics) HOXC12 CQSLESDSSSSLLNEGNKGAGAGDPGSLVSPLNPGGGLSAS lincRNA and TUCP transcripts C/D and H/ACA Box snoRNAs, and microRNAs from snoRNABase and miRBase CTR147 CpG merge methylation level CTR147 I CTR149 CpG merge methylation level CTR149 CTR150 CpG merge methylation level CTR150 nerge methylation level CTR151 CpG me CTR151 CTR152 CpG merge methylation level

CTR153 CpG merge methylation level CTR152 CTR153 _1 CTR154 CpG merge methylation level CTR154 CTR84 CpG merge methylation level
CTR85 CpG merge methylation level
CTR86 CpG merge methylation level CTR84 L∎. CTR85 CTR86 CTR97 CpG merge m -_methylation level CTR97 nerge methylation le CTR98 CpG me CTR98 --CTR101 CpG merge methylation level CTR101 ___ rge methylation level CTR103 CpG me CTR103 CTR104 CpG merge methylation leve CTR104 -=-CTR106 CpG merge methylation level CTR106 CTR107 CpG merge methylation level CTR107 _== CTR108 CTR110 CpG merge methylation le CTR110 CTR132 CpG merge rge methylation leve CTR132 CTR134 CpG merge methylation level CTR134 rge methylation level CTR148 CpG me **CTR148** CTR111 CpG merge methylation leve CTR111 CTR113 CTR114 CpG merge methylation level CTR114 CTR117 CpG merge methylation level CTR117 CTR118 CpG merge methylation level CTR118 CTR126 CpG merge methylation level CTR126 CTR127 CpG merge methylation level CTR127 CTR128 CpG merge methylation level CTR128 CTR129 CpG merge methylation level CTR129 CTR131 CpG merge methylation level CTR131 UCSD Adipose Tissue Bisulfite-Seq Donor STL003 EA Release 9 AT BS 03 BI Adult Liver Bisulfite-Seq Donor 3 Library WGBS_Lib 11 EA Release 8 AL BS 3 11 4 UCSD Aorta Bisulfite-Seq Donor STL003 EA Release 9 Aorta BS 03 П eg Donor STL003 EA Release 9 UCSD Esophagus Bisulfite-Se Esophagus BS 03 BI Fetal Muscle Leg Bisulfite-Seq Donor UW H24996 Library WGBS_Lib 66 EA Release 9 FML BS 96 66 ı BI Fetal Thymus Bisulfite-Seq Donor UW 4943 Library WGBS_Lib 65 EA Release 9 FT BS 43 65 UCSD Gastric Bisulfite-Seq Donor STL003 EA Release 9 Gastric BS 03 UCSD Left Ventricle Bisulfiteq Donor STL001 EA Release 9 LV BS 01 Seq Donor STL003 EA Release 9 ш. UCSD Left Ventricle Bisulfite-LV BS 03 UCSD Lung Bisulfite-Seq D nor STL002 EA Release 9 Lung BS 02 UCSD Ovary Bisulfite-Seq Donor STL002 EA Release 9 Ovary BS 02 .. UCSD Pancreas Bisulfite-Seq Donor STL003 EA Release 9 Pancreas BS 03 UCSD Psoas Muscle Bisulfite-____ ■ eq Donor STL003 EA Release 9 PM BS 03 UCSD Right Atrium Bisulfite-Seq Donor STL003 EA Release 9 **RA BS 03** UCSD Right Ventricle Bisulfite H q Donor STL003 EA Release 9 **RV BS 03** UCSD Sigmoid Colon Bisulfite eq Donor STL001 EA Release 9 SC BS 01 q Donor STL003 EA Release 9 UCSD Sigmoid Colon Bisulfite SC BS 03 UCSD Small Intestine Bisulfite eq Donor STL001 EA Release 9 te-Se SI BS 01 UCSD Spleen Bisulfite-Seq Donor STL003 EA Release 9 Spleen BS 03 UCSD Thymus Bisulfite-Seq Donor STL001 EA Release 9

DNA methylation in brain tissue (bigWig) Thymus BS 01 Brain Methyl 2 DNA methylation in kidney tissue (bigWig) Kidney Methyl 2 DNA methylation in placenta (biological replicate 1) (bigWig) Placenta1 Methyl 2 DNA methylation in placenta (biological replicate 2) (bigWig) Placenta2 Methyl 2 DNA methylation in placenta (biological replicate 3) (bigWig) Placenta3 Methyl 2 Human_Cerebellum_Meth Human_Kidney_Meth Kidney Human_NKcells_Meth NKcells Human_Sperm_Meth Sperm Human_NormalPancreas1_Meth Human_NormalPancreas2_Meth Human_93A_Meth 93A Human_93N_Meth Human_Epidermis-old-sun-exposed_Meth Human_Epidermis-old-sun-protected_Meth Human_Epidermis-young-sun-exposed_Meth Human_Epidermis-young-sun-protected_Meth Human_Buccals_Meth Buccals Human_Sperm_Meth Sperm Human_BloodHealthy_Meth BloodHealthy Distinct Human DNA Methylomes from Different Ages, Heyn 2012 : Human_CD4T-100yr_Meth CD4T-100yr Distinct Human DNA Methylomes from Different Ages, Heyn 2012 : Human_CD4T-Newborn_Methylomes Distinct Human DNA Methylomes from Different Ages, Heyn 2012 : Human_PBMC_Meth PBMC Changes in Human Hematopoietic Stem Cells, Hodges 2011: Human_CD133HSC_Me CD133HSC Roadmap 2015 : Human_Macrophage_Meth Macrophage Roadmap 2015 : Human_NK_Meth NK Human_BCell_Meth **BCell** CD133HSC Human_HSPC_Meth Human_Neut_Meth Neut Human_H1_Meth H1 Human_H1BMP4_Meth H1BMP4 Human_H1-mesendoderm_Meth H1-mesendoderm Human_H1-NPC_Meth H1-NPC Human_Mesenchymal_Meth Mesenchymal Human_IMR90_Meth IMR90 IMR90 Cell Line DNA Methylation by Bisulfite-seq Signal from REMC/UCSD (Library:methylC-seq_imr90_r1a) IMR90 BS 1a Human_BloodALLL2_Meth Human_BloodALLL1_Meth BloodALLL1 IMR90 MCF7 Berman 2012 : ColonCancer п epigenetic domains across cancer types. : Human_ColonCancer_Meth ColonCancer HCC1954 HepG2 PancreaticCancer3 PancreaticCancer4 11 Human_PancreaticCancer6_Meth PancreaticCancer6 Human_PancreaticCancer7_Meth PancreaticCancer7 Human_PancreaticCancer8_Meth PancreaticCancer8 Human_PancreaticCancer9_Meth PancreaticCancer9 n Pano PancreaticCancer11 H3K27Ac Mark (Often Found Near Active Regulatory Elements) on 7 cell lines from ENCODE Layered H3K27Ac H3K4Me1 Mark (Often Found Near Regulatory Elements) on 7 cell lines from ENCODE Layered H3K4Me1 H3K4Me3 Mark (Often Found Near Promoters) on 7 cell lines from ENCODE Layered H3K4Me3 **DNase Clusters** Txn Factor ChIF chromHMM tracks from Roadmap LNG.IMR90 LNG.IMR90 Restriction Enzymes from REBASE Restr Enzymes Mus Hoxc12 Salmo hoxc12ba Salmo hoxc12ab Salmo hoxc12aa Danio hoxc12a Rattus Hoxc12 Salmo hoxc12bb Bos HOXC12 Danio hoxc12b UCSC annotations of RefSeq RNAs (NM_* and NR_*) HOXC12 CpG Islands (Islands < 300 Bases are Light Green) CpG: 80 Placental Mammal Basewise Conservation by PhyloP Mammal Cons Rhesus Mouse Dog Elephan Opossum Chicken Repeating Elements by RepeatMasker