A

H3K4me3 level D2.203-3 (log$_2$) vs H3K4me3 level D2.203-1 (log$_2$)

r = 0.986

B

H3K4me3 level D2.173 (log$_2$) vs H3K4me3 level D2.203-1 (log$_2$)

r = 0.976

C

H3K4me3 level D2.173 (log$_2$) vs H3K4me3 level B6.49-3 (log$_2$)

r = 0.859

D

Embryonic Stem Cells

Pearson Correlation
0.85   0.90   0.95   1.00

	BXD87K	BXD87M	BXD87I	BXD87C	BXD87X	D2.173	D2.203-2	D2.216	D2.203-1	D2.203-3	B6.139	B6.146	B6.49-3	B6.49-1	B6.49-2	BXD75A	BXD75Q	BXD75Y	BXD75F	BXD75N
BXD75N																				1
BXD75F																			1	0.99
BXD75Y																		1	0.99	0.99
BXD75Q																	1	0.97	0.98	0.97
BXD75A																1	0.99	0.96	0.97	0.96
B6.49-2															1	0.94	0.95	0.93	0.93	0.94
B6.49-1														1	0.99	0.94	0.95	0.93	0.93	0.94
B6.49-3													1	0.99	0.99	0.94	0.95	0.92	0.92	0.93
B6.146												1	0.98	0.98	0.98	0.96	0.96	0.93	0.94	0.94
B6.139											1	0.99	0.98	0.98	0.98	0.96	0.96	0.94	0.95	0.94
D2.203-3										1	0.9	0.9	0.89	0.89	0.89	0.92	0.93	0.92	0.92	0.93
D2.203-1									1	0.99	0.9	0.91	0.89	0.89	0.89	0.94	0.94	0.93	0.94	0.93
D2.203-2								1	0.98	0.99	0.9	0.9	0.89	0.9	0.9	0.92	0.93	0.92	0.92	0.93
D2.216							1	0.96	0.96	0.96	0.92	0.93	0.91	0.91	0.91	0.94	0.94	0.91	0.92	0.92
D2.173						1	0.95	0.95	0.98	0.95	0.9	0.9	0.86	0.87	0.87	0.94	0.93	0.91	0.93	0.91
BXD87X					1	0.94	0.93	0.95	0.95	0.95	0.93	0.93	0.92	0.92	0.93	0.94	0.94	0.95	0.95	0.95
BXD87C				1	0.99	0.93	0.94	0.96	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.95	0.94	0.95
BXD87I			1	0.98	0.98	0.94	0.95	0.95	0.95	0.94	0.95	0.93	0.93	0.93	0.95	0.95	0.93	0.94	0.94	
BXD87M		1	0.98	0.98	0.99	0.95	0.94	0.95	0.95	0.94	0.94	0.92	0.92	0.92	0.95	0.95	0.94	0.95	0.95	
BXD87K	1	0.99	0.97	0.98	0.99	0.93	0.93	0.94	0.93	0.93	0.91	0.91	0.91	0.94	0.94	0.94	0.95	0.95	0.95	

E

Cardiomyocytes

Pearson Correlation
0.85   0.90   0.95   1.00

	B6-1	B6-2	B6-3	DBA-1	DBA-2	DBA-3	BXD75-1	BXD75-2	BXD75-3	BXD87-1	BXD87-2	BXD87-3
BXD87-3												1
BXD87-2											1	0.97
BXD87-1										1	0.98	0.99
BXD75-3									1	0.97	0.98	0.97
BXD75-2								1	0.98	0.99	0.98	0.98
BXD75-1							1	0.92	0.94	0.89	0.94	0.87
DBA-3						1	0.96	0.9	0.93	0.87	0.92	0.86
DBA-2					1	0.98	0.96	0.9	0.94	0.88	0.91	0.86
DBA-1				1	0.98	0.97	0.95	0.94	0.96	0.91	0.94	0.9
B6-3			1	0.93	0.9	0.9	0.92	0.98	0.98	0.98	0.98	0.98
B6-2		1	0.95	0.97	0.97	0.96	0.97	0.93	0.97	0.92	0.95	0.91
B6-1	1	0.97	0.99	0.95	0.93	0.93	0.95	0.97	0.98	0.97	0.98	0.96

F

Hepatocytes

Pearson Correlation
0.94   0.96   0.98   1.00

	BXD87-1	BXD87-2	BXD87-3	BXD75-3	BXD75-1	BXD75-2	B6-1	B6-2	B6-3	DBA-3	DBA-1	DBA-2
DBA-2												1
DBA-1											1	0.994
DBA-3										1	0.984	0.987
B6-3									1	0.954	0.95	0.954
B6-2								1	0.992	0.955	0.954	0.958
B6-1							1	0.99	0.99	0.954	0.951	0.953
BXD75-2						1	0.952	0.951	0.951	0.955	0.944	0.946
BXD75-1					1	0.989	0.958	0.96	0.96	0.96	0.953	0.956
BXD75-3				1	0.979	0.977	0.933	0.939	0.939	0.935	0.928	0.933
BXD87-3			1	0.974	0.964	0.962	0.937	0.941	0.941	0.94	0.932	0.938
BXD87-2		1	0.998	0.972	0.965	0.962	0.941	0.945	0.944	0.943	0.937	0.941
BXD87-1	1	0.983	0.982	0.955	0.973	0.967	0.961	0.962	0.962	0.966	0.959	0.962

Figure S3. *Pearson Correlations for all hepatocytes, cardiomyocytes, and ESCs.* (A) Example of technical replicate H3K4me3 ChIP-seq for two independent cultures of the same D2 ESC line. (B) Example of biological replicates for H3K4me3 ChIP-seq for two ESC lines derived from independent blastocysts. (C) Scatterplot comparing H3K4me3 ChIP-seq between on B6 and one D2 ESC line. (D) Correlation matrix of all H3K4me3 ChIP-seq libraries for mouse ESCs. Cell lines and strains clustered by correlation dissimilarity. Parental strains have three technical replicates of the same cell line and three biological replicates of ESCs from independently derived blastocysts. The two BXD lines are represented by five biological replicates each. (E) Similar to *D* except showing Pearson correlations matrix for cardiomyocytes. Each biological replicate represents cells isolated from three individual mice. (D) Similar to *E* except showing correlation matrix for biological replicates of hepatocytes – each biological replicate represents cells isolated from a single female mouse.