Supplemental Materials
Molecular Biology of the Cell

Zheng et al.

Figure S1

A
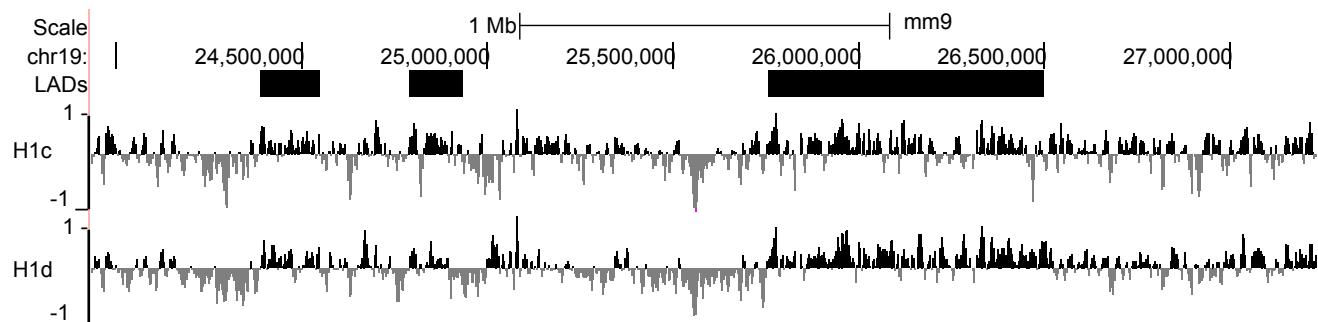
B
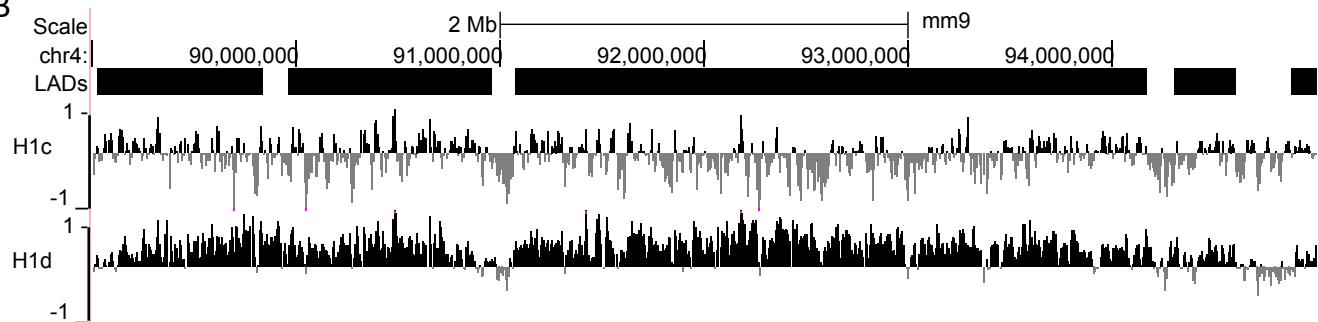
C

	Lamin-B1	H3	H1c	H1d	H3K4me1	H3K9me3	H3K27me3
PC1	0.469	0.282	0.288	0.500	-0.566	0.215	0.030
PC2	0.122	-0.512	-0.070	0.031	0.095	0.593	0.596
PC3	0.390	0.120	-0.795	-0.326	-0.280	0.090	-0.097

D

Transition matrix

	B	P	O	Y	G	R
B	0.962	0.015	0.000	0.005	0.018	0.000
P	0.010	0.990	0.000	0.000	0.000	0.000
O	0.001	0.000	0.885	0.015	0.058	0.042
Y	0.014	0.000	0.018	0.922	0.022	0.024
G	0.027	0.000	0.035	0.010	0.928	0.000
R	0.000	0.000	0.038	0.016	0.000	0.946

Emission parameters

	B			P			O			Y			G			R		
delta	5.58			4.01			4.53			4.04			6.56			8.71		
mu	0.70	-0.43	0.08	1.30	-0.32	0.00	-0.42	-0.92	-0.91	-0.37	-1.48	-0.53	0.29	-0.74	-0.39	-0.44	-3.16	-0.98
beta	-1.40	3.38	-0.28	-1.20	2.33	1.76	-6.22	4.89	2.16	-1.15	1.57	1.46	-4.41	7.17	-0.18	-14.78	12.90	4.99
Gamma	4.69	-1.45	-1.25	4.46	-1.13	-1.88	4.86	-1.35	-0.50	3.14	-0.64	-0.77	5.11	-1.78	-0.91	8.98	-2.72	-0.88
	-1.45	5.83	-0.67	-1.13	4.84	-0.62	-1.35	5.74	-0.37	-0.64	4.39	-0.38	-1.78	6.22	-0.57	-2.72	10.38	-0.56
	-1.25	-0.67	4.24	-1.88	-0.62	5.47	-0.50	-0.37	2.30	-0.77	-0.38	2.76	-0.91	-0.57	3.35	-0.88	-0.56	4.53

Figure S2

A

HiLands-B

Emerin Dam-ID in WT mESCs

Lamin-B1 Dam-ID in WT mESCs

R=0.784

B

HiLands-P

Emerin Dam-ID in WT mESCs

Lamin-B1 Dam-ID in WT mESCs

R=0.833

C

(Emerin Dam-ID) - (Lamin-B1 Dam-ID)

HiLands-B   HiLands-P

D

Scale   2 Mb   mm9
chr10:   65,000,000 66,000,000 67,000,000 68,000,000 69,000,000 70,000,000 71,000,000 72,000,000
cLADs
fLADs
Emerin Dam-ID
WT mESCs
(Amendola)
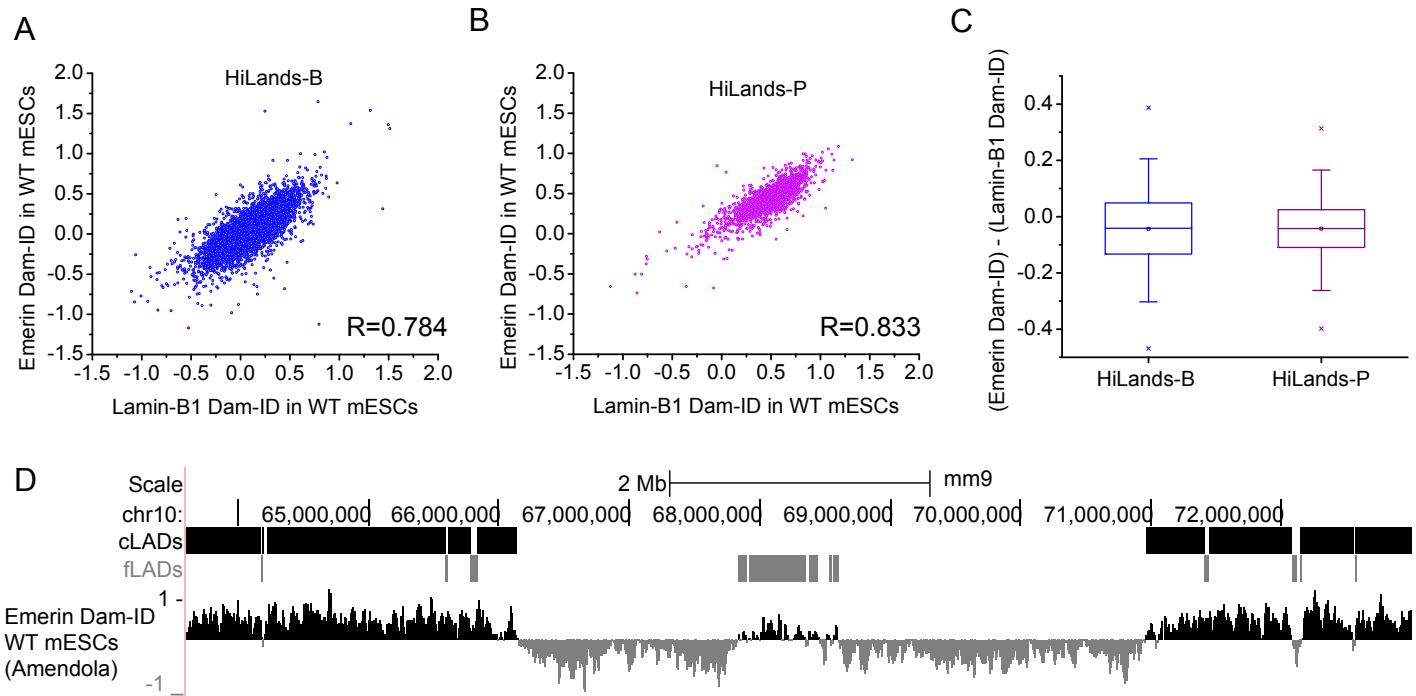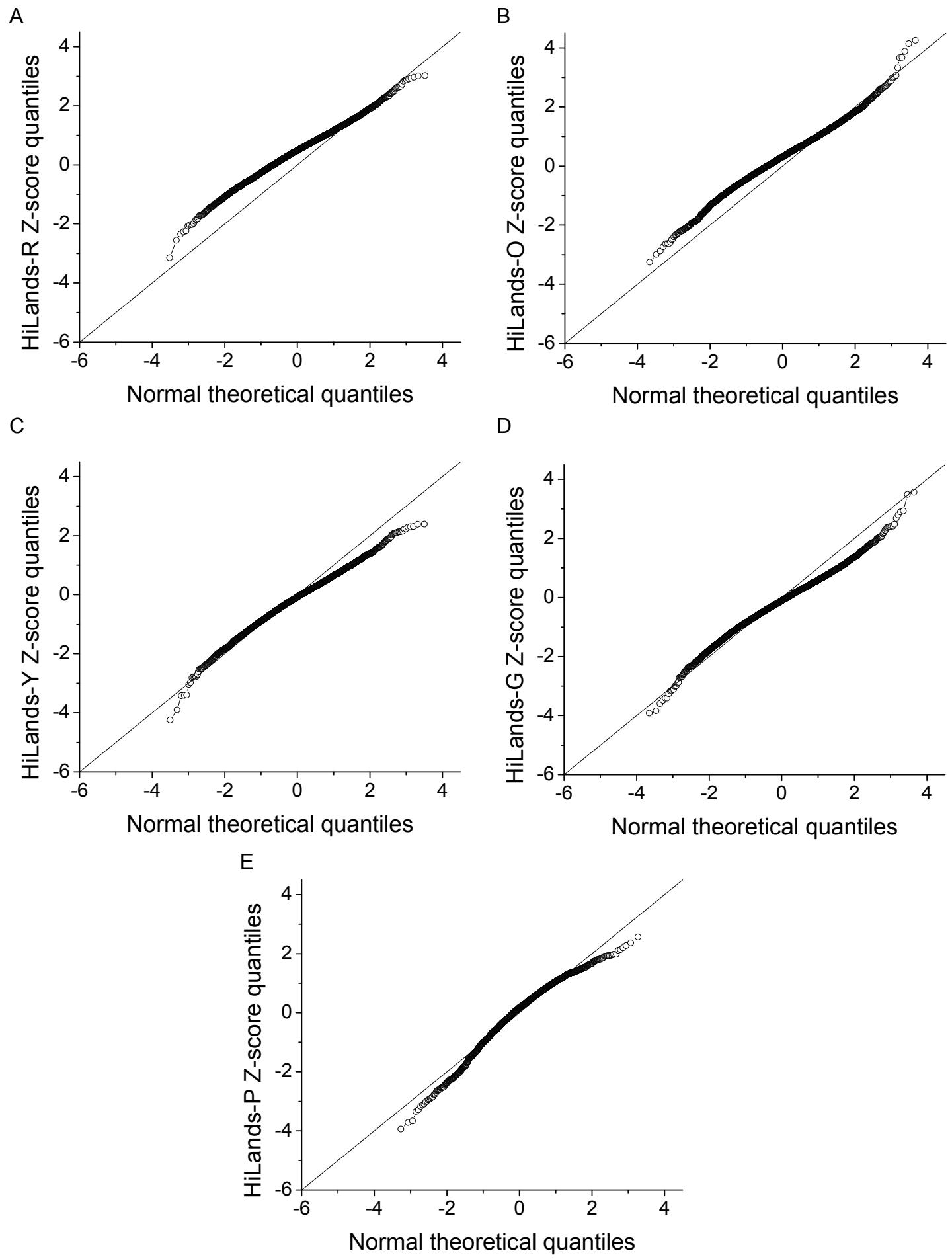
Figure S3

Supplementary Figure legends:

Supp Figure 1. Examples of H1c and H1d enrichments on different LADs. (A) LADs showing both H1c and H1d enrichments. (B) LADs enriched of H1d but not H1c. (C) Principal component (PC) analysis parameters. (D) HMM parameters. For the meaning of emission parameters, see the reference (Øigård *et al.*, 2005).

Supp Figue 2. (A) Scatter plot comparing emerin Dam-ID and lamin-B1 Dam-ID on HiLands-B. (B) Scatter plot comparing emerin Dam-ID and lamin-B1 Dam-ID on HiLands-P. (C) Box plot showing that the differences between emerin Dam-ID and lamin-B1 Dam-ID are similar in HiLands-B and –P. (D) A genome browser view of a representative region showing fLADs (grey blocks) with lower Dam-ID signal than cLADs (black blocks).

Supp Figure 3. QQ-plots for comparison of the Z-scores of (A) HiLands-R, (B) HiLands-O, (C) HiLands-Y, (D) HiLands-(G), and (E) HiLands-P, with the normal distribution. The Z-scores are calculated based on the statistical method described in (Peric-Hupkes *et al.*, 2010).