

Table S1. High throughput Sequencing Datasets Used in The Study

Data types	Source from	Access number
Hi-C, RNA-seq data (ES Cells, Primary Neocortex Cortical Neurons, Primary Neocortex NP Cells)	Bonev et al., 2017	GEO: GSE96107
RNA-seq data (Primary Thymocytes, CD69-CD4 <sup>+</sup> CD8 <sup>+</sup> )	Karimi et al., 2021	GEO: GSE154670
RNA-seq data (Macrophages)	Cuartero et al.2018	GEO: GSE108599
RNA-seq data (K562, HeLa)	She et al., 2023	GEO: GSE207330
Hi-C, H3K27ac ChIP-seq data (Primary Thymocytes, CD69-CD4 <sup>+</sup> CD8 <sup>+</sup> )	Guo et al., 2022	GEO: GSE199059
Hi-C data (Macrophages)	Mumbach et al., 2019	GEO: GSE115524
Hi-C data (K562)	<a href="https://data.4dnucleome.org/">https://data.4dnucleome.org/</a>	4DN: 4DNFICEGAHRC
Hi-C data (HeLa)	<a href="https://data.4dnucleome.org/">https://data.4dnucleome.org/</a>	4DN: 4DNFITUOMFUQ
CUT&Tag, ChIP-seq data (Nipbl for K562 and HeLa, H3K27ac for K562)	This Study	GEO: GSE227868
ChIP-seq data (H3K9me3 for ES Cells)	Navarro et al., 2020	GEO: GSE149080
ChIP-seq data (H3K27ac for ES Cells)	Kubo et al., 2021	GEO: GSE160890
ChIP-seq data (Nipbl for ES Cells)	Kagey et al., 2010	GEO: GSE22557
ChIP-seq data (Nipbl for thymocyte)	Seitan et al., 2013	GEO: GSE48763
ChIP-seq data (H3K9me3 for HeLa)	Timms et al., 2016	GEO: GSE86814
ChIP-seq data (H3K27ac for HeLa)	ENCODE Project Consortium (2012).	GEO: GSE29611
ChIP-seq data (H3K9me3 for K562)	Siegenfeld et al., 2022	GEO: GSE198613