

Table S1. Summary and accession numbers of data used in this study

Data Type	Factor	Antibody	Cell Type	Factor Accession Number	Background Accession Number
ChIP-seq	PDS5A	Bethyl A300-089A	WT mESC	GSM5970922 GSM5970923	GSE199356
	PDS5B	Bethyl A300-538A	WT mESC	GSM5970924 GSM5970925	GSE199356
	RAD21	Bethyl A300-080A	WT mESC	GSM4074281 GSM4074282	GSE137285
	CTCF	Active Motif 61311	WT mESC	GSM4074279 GSM4074280	GSE137285
	OCT4	Santa Cruz sc-8628X	WT mESC	GSM1082340	GSE44286
	SOX2	R&D Systems MAB2018	WT mESC	GSM1082341	GSE44286
	NANOG	Bethyl A300-397A	WT mESC	GSM1082342	GSE44286
	RAD21	Abcam ab992	WT mESC	GSM4280484 GSM4280485	GSE144116
	PDS5A	Bethyl A300-089A	<i>Pds5b</i> ^{-/-} mESC	GSM5970926 GSM5970927	GSE199356
	RAD21	Abcam ab992	<i>Pds5b</i> ^{-/-} mESC	GSM5970928 GSM5970929	GSE199356
	PDS5B	Bethyl A300-538A	<i>Pds5a</i> ^{-/-} mESC	GSM5970930 GSM5970931	GSE199356
	RAD21	Abcam ab992	<i>Pds5a</i> ^{-/-} mESC	GSM5970932 GSM5970933	GSE199356
	RAD21	Abcam ab992	WT siGLO mESC	GSM5970934 GSM5970935	GSE199356
			WT siPds5b mESC	GSM5970936 GSM5970937	GSE199356
			<i>Pds5a</i> ^{-/-} siGLO mESC	GSM5970938 GSM5970939	GSE199356
			<i>Pds5a</i> ^{-/-} siPds5b mESC	GSM5970940 GSM5970941	GSE199356
	STAG1	Bethyl A300-0157A	WT mESC	GSM4280480 GSM4280481	GSE144116
	STAG2	Bethyl A300-0159A	WT mESC	GSM4280482 GSM4280483	GSE144116
RNA-seq	-	-	WT siGLO mESC	GSM5968203 GSM5968204 GSM5968205	GSE199356
	-	-	<i>Pds5a</i> ^{-/-} siGLO mESC	GSM5968209 GSM5968210 GSM5968211	GSE199356
	-	-	<i>Pds5b</i> ^{-/-} siGLO mESC	GSM5968212 GSM5968213 GSM5968214	GSE199356
			WT siPds5b mESC	GSM5968206 GSM5968207 GSM5968208	GSE199356
	-	-	<i>Pds5a</i> ^{-/-} siPds5b mESC	GSM5968215 GSM5968216 GSM5968217	GSE199356
	-	-	<i>Pds5a</i> ^{-/-} siStag1 mESC	GSM5968218 GSM5968219 GSM5968220	GSE199356
	-	-	<i>Pds5a</i> ^{-/-} siStag2 mESC	GSM5968221 GSM5968222 GSM5968223	GSE199356
	-	-	WT siGLO mESC	GSM4280519 GSM4280520 GSM4280521	GSE144116
	-	-	<i>Stag2</i> ^{-/-} siStag1 mESC	GSM4280531 GSM4280532 GSM4280533	GSE144116