Whyte\_Nanog Whyte Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl\_Pol2\_shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

Scannell\_TBP Whyte Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl\_Pol2\_shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

## Rahl TBP Whyte Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl\_Pol2\_shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

ahl\_Pol2\_shControl Whyte Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl\_Pol2\_shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

ahl\_Pol2\_1hr\_DMSO Whyte\_Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl\_Pol2\_shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

Kagey\_MED1 Whyte Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl\_Pol2\_shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

## CODE\_E14 H3K4me3 Whyte\_Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl\_Pol2\_shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

## CODE E14 H3K4me1 Whyte\_Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 0 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl Pol2 shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused

## CODE E14 H3K27ac Whyte\_Suz12 Whyte\_Sox2 Whyte\_Pou5f1 2 Whyte\_Nanog Whyte\_CDK9 Whyte\_CDK8 Scannell TBP Scannell\_TAF3 Scannell\_TAF1 Rahl TBP Rahl SPT5 Rahl Pol2 1hr Flavo shControl Rahl Pol2 1hr Flavo shNELFE Rahl\_Pol2\_1hr\_Flavo\_shSpt4 Rahl\_Pol2\_1hr\_Flavo\_shSpt5 Rahl Pol2 shSPT5 Rahl\_Pol2\_shNELFA Rahl\_Pol2\_shControl Rahl Pol2 Ser7p Rahl Pol2 Ser5p Rahl\_Pol2\_Ser2p Rahl Pol2 1hr Flavo Rahl\_Pol2\_1hr\_DMSO Rahl Pol2 18hr JQ1 Rahl\_Pol2\_18hr\_DMSO Rahl\_NELFA Rahl\_CTR9 Rahl BRG1 Rahl\_BRD4 Kagey\_SMC3 Kagey\_SMC1 Kagey\_NIPBL Kagey\_MED12 Kagey\_MED1 Hu\_MLL4 Gao\_MLL2 ENCODE\_E14\_H3K9me3 ENCODE\_E14\_H3K9ac ENCODE\_E14\_H3K4me3 ENCODE\_E14\_H3K4me1 ENCODE\_E14\_H3K36me3 ENCODE E14 H3K27ac Ang WDR5 Ang\_RbBP5 Ang Pou5f1 TSS\_trans\_paused