



Distinct structural transitions of chromatin topological domains correlate with coordinated hormone-induced gene regulation

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Progesterone-regulated transcription in breast cancer



Le Dily, F. et al. Genes & Dev (2014)





HiC libraries

Chr.18 (Hind III)



Experimental design

Chr.18 (Ncol)

ChIP-Seq

RNA-Seq

Hi-C



Are there TADs? how robust?



>2,000 detected TADs







Are TADs homogeneous?



Do TADs respond differently to Pg treatment?





Do TADs respond differently to Pg treatment?







Pg induced fold change per TAD (6h)

Activated

TADs

Modeling 3D TADs



Chr1:26,800,000-28,700,000





61 genomic regions containing 209 TADs covering 267Mb

How TADs respond structurally to Pg?





Chr6:71,800,000-76,500,000



How TADs respond structurally to Pg?







Repressed TAD chr1 U41





Activated TAD chr2 U207



DHS HP1 H1.2 H2A

Model for TAD regulation