



## **Development of microfluidic chip for automated Chromatin Immunoprecipitation and library construction.**

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### **Abstract**

Chromatin Immunoprecipitation sequencing (ChIP-Seq) is the key experimental approach to locate histone modifications and transcription factors in the genome, yet for robust and automated detection this assay requires large numbers of cells. Miniaturization of the ChIP-seq workflow will enable increased sensitivity, robustness and throughput at reduced labour and reagent costs. A Blueprint custom-made PDMS microfluidic chip has been produced by Fluidigm. The microfluidic chip contains reactors that facilitate immunoprecipitation of chromatin and subsequent library construction in a parallelized fashion. Our automated workflow performs highly reproducible chromatin immunoprecipitations on thousands of cells. We also show DNA purification and library construction starting from lower picogram range of DNA as input.