

EpiTect[®] ChIP PCR System

For reliable analysis of protein–DNA interactions

The EpiTect ChIP PCR System provides a complete solution for the analysis of the dynamic interactions between DNA and nuclear proteins that play a central role in gene regulation. This technology combines a simple and robust one-day immunoprecipitated DNA preparation kit with genome-wide qPCR primers and ChIP-grade antibodies to quickly identify DNAs that interact with proteins.

The EpiTect ChIP qPCR System provides:

- A complete system from sample isolation through data analysis
- Primer assays for promoter regions of every human, mouse, or rat gene
- Accurate results for any genomic region using a one-day workflow

Fast, accurate ChIP qPCR with a pathway focus

ChIP qPCR is a powerful, versatile method for analyzing chromatin DNA bound by transcription factors, co-regulators, modified histones, and other nuclear factors from live cells. However, time-consuming protocols and inconsistent results limit the utility of this technique. The EpiTect ChIP PCR system provides a streamlined protocol and laboratory-verified antibodies and primer assays to overcome these challenges. EpiTect ChIP PCR Arrays combine this technology with pathway-focused gene panels, providing an innovative approach for protein–DNA interaction analysis of the most relevant genes in epigenetically controlled pathways and diseases.

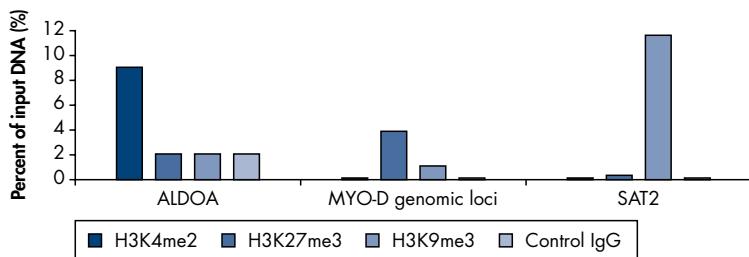


Figure 1. The EpiTect ChIP PCR System accurately identifies euchromatin and heterochromatin loci. ChIP was performed with EpiTect ChIP antibodies against H3K4me2, H3K27me3, H3K9me3, or IgG. Each ChIP DNA fraction was analyzed using real-time PCR primers for ALDOA, MYO-D, and SAT2, representing transcriptionally active or inactive genes or silenced repeats. This plot shows the percentage of co-precipitating DNA relative to input.

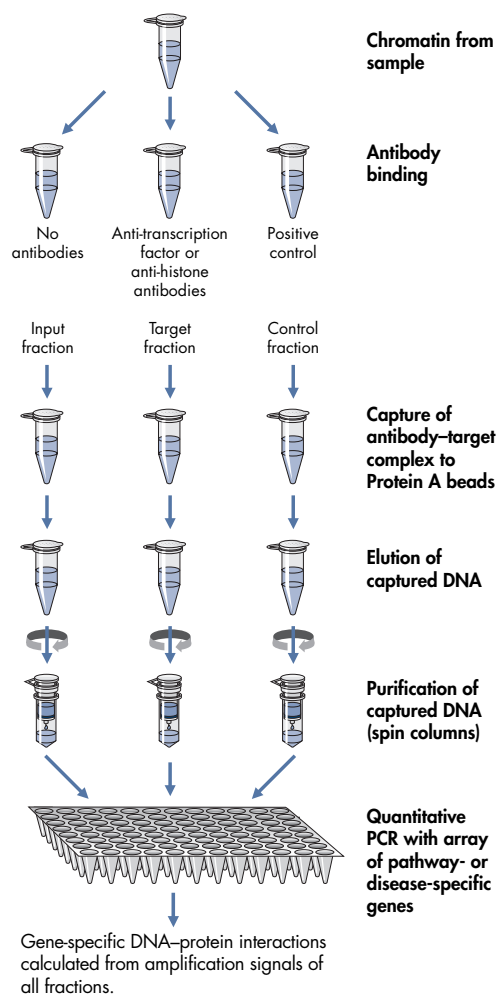


Figure 2. The EpiTect ChIP PCR System provides a streamlined workflow for results in just one workday. Regardless of starting material, the fully integrated EpiTect ChIP PCR System includes dedicated solutions for every workflow step that facilitate sample preparation, processing, and analysis.



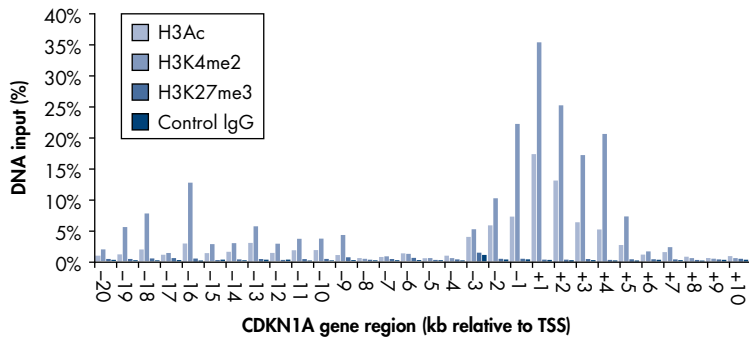
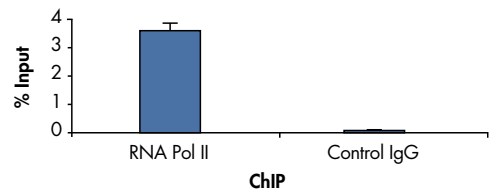


Figure 3. The EpiTect ChIP PCR System reliably monitors differential histone modifications. EpiTect ChIP antibodies against modified histones (H3Ac, H3K4me2, H3K27me3), or control IgG (NIS; non-immune serum) were used to precipitate chromatin from 1 million HeLa cells. Each ChIP DNA fraction was analyzed with an EpiTect ChIP Custom PCR Array representing thirty 1 kb tile intervals across the promoter region of the CDKN1A gene. The results indicate the enrichment of histone markers for actively transcribed genes (H3Ac and H3K4me2), but not histone markers for transcriptionally inactive genes (H3K27me3) in the genomic region surrounding the transcription start site (TSS) of CDKN1A.



Percent of input	RNA Pol II	IgG
Average	3.663%	0.023%
SD	0.18%	0.01%
& CV	4.81%	

Figure 4. EpiTect ChIP PCR results are highly reproducible. Four independent researchers collected duplicate samples of 2 million HCT116 cells. Each performed ChIP with RNA Polymerase II antibody (RNA Pol II) or control IgG, both from an EpiTect ChIP Antibody Kit. The specific enrichment of ChIP DNA was analyzed using an EpiTect ChIP qPCR Assay for the GAPDH proximal promoter. The results are expressed as percentage of input results (table, chart y-axis) and standard deviation (error bars). The ChIP-qPCR results for Pol II between these multiple researchers agreed with a coefficient of variation of only 4.8%.

Ordering Information

Product	Contents	Cat. no.
EpiTect ChIP PCR Arrays	Pathway, disease, or custom panels of gene assays	Varies*
EpiTect ChIP ChIP-Grade Antibody Kits	Antibodies, control IgGs, and positive and negative real-time qPCR control primers	Varies*
EpiTect ChIP One-Day Kit	Reagents and buffers for 12 chromatin immunoprecipitations & DNA purifications	334471
EpiTect ChIP qPCR Primer Assays	Laboratory-verified primer assays for any transcription factor or histone binding site	Varies*
RT ² SYBR® Green Mastermix	Reagents for real-time PCR reactions (available with ROX, fluorescein, or no internal reference dye)	330520

* For more information on these products, please visit www.sabiosciences.com/chipqpcr.php

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