

UNCOVER EPIGENETIC SIGNATURES FASTER WITH SURESELECT^{XT} HUMAN METHYL-SEQ

The First Comprehensive Methylation Discovery System

Highlights

- 84Mb design
- Covering 3.7 million CpGs
- Comprehensive tool for methylation discovery
- Probes are not methylation-state dependent
- High sensitivity with single base resolution
- Increased throughput and reduced cost
- Increased library complexity
- Reduce bias compared to existing methylation methods

Summary

SureSelect^{XT} Human Methyl-Seq is the first comprehensive target enrichment system to enable researchers to focus on the regions where methylation is known to impact gene regulation: CpG islands, CpG island shores, undermethylated regions, promoters, and differentially methylated regions (DMRs).

SureSelect^{XT} Human Methyl-Seq

- Uniquely delivers more information than methylation microarrays by detecting individual CpGs
- Increases throughput and reduces costs compared to whole genome bisulfite sequencing
- Reveals methylated regions not detected by restriction enzyme and immunoprecipitation or SNP-based assays

SureSelect^{XT} Human Methyl-Seq Protocol



Figure 1. The SureSelect^{XT} Human Methyl-Seq protocol is optimized for DNA methylation analysis using the Agilent SureSelect target enrichment system.



SureSelect^{XT} Human Methyl-Seq Results

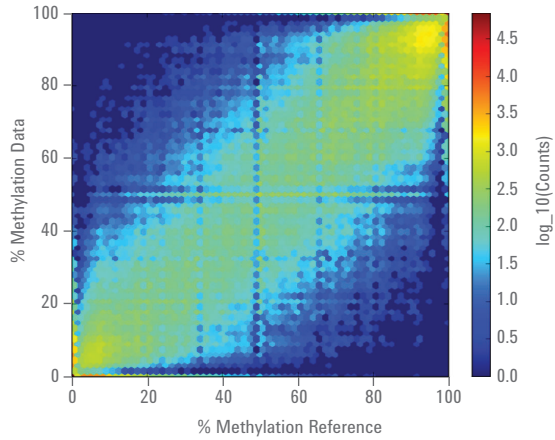


Figure 2. Methyl-Seq achieves excellent correlation with whole genome bisulfite sequencing (WGS) data ($R=0.93$, Lister R. *et al.* 2009).

SureSelect^{XT} Human Methyl-Seq Content Types

- CpG islands
- GENCODE promoters
- Cancer, tissue-specific DMRs, or regulatory features in:
 - CpG Islands, shores/shelves ($\pm 4\text{kb}$)
 - Enhancers
 - Ensemble regulatory regions
 - DNase I hypersensitive sites

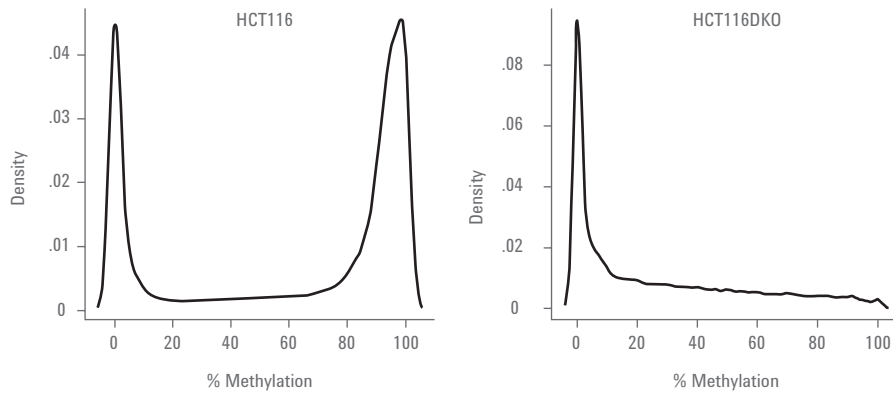


Figure 3. Highly sensitive and accurate methylation detection after SureSelect target enrichment demonstrated DNA methylation differences between HCT116 human colon cancer cells and its methyltransferase double-knockout (DNMT1^{-/-} and DNMT3b^{-/-}).

www.agilent.com/genomics/sureselect

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