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Data Brief

SuperMethyl™ kits deliver superior Infinium MethylationEpic v2.0 Array data in a fraction of the time

- Methylation array is a widely adopted platform enabling genome-wide DNA methylation profiling. The quality and accuracy of array-based genome-wide methylation profiling critically depends on maximizing C-T conversion efficiency while minimizing DNA degradation.
- SuperMethyl™ chemistries enable gentle and efficient bisulfite conversion for:
  a. Low input clinical samples (ie. FFPE-derived/cfDNA) via the **SuperMethyl™ Max Kit.**
  b. Ultra-fast, high volume, low cost bisulfite conversion via the **SuperMethyl™ Fast Kit.**
- In this Data Brief, we compared bisulfite kits SuperMethyl™ Max (Ellis Bio), SuperMethyl™ Fast (Ellis Bio), and EZ-DNA Methylation (Zymo) in combination with the Infinium MethylationEPIC v2.0 array (Illumina) read-out, using gDNA from the K562 cell line, frozen human liver tissue, and human lung FFPE samples.

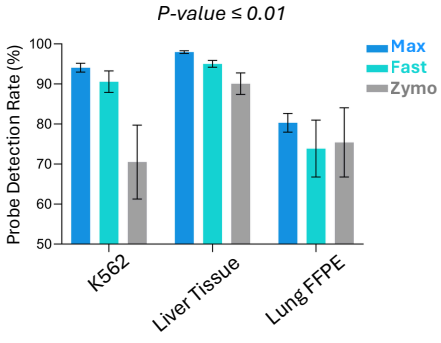
Workflows tested:

Label	Genomic DNA (gDNA) Sample & Input	Conversion Kit	Array	Replicates	Time
Max	K562 Cell line (500 ng) Liver Tissue (500 ng) Lung FFPE* (250 ng)	SuperMethyl™ Max (Ellis Bio)	Infinium MethylationEPIC v2.0 Kit (Illumina)	3	2-3 hours
Fast		SuperMethyl™ Fast (Ellis Bio)			35 min
Zymo		EZ-DNA Methylation (Zymo Research)			20+ hours

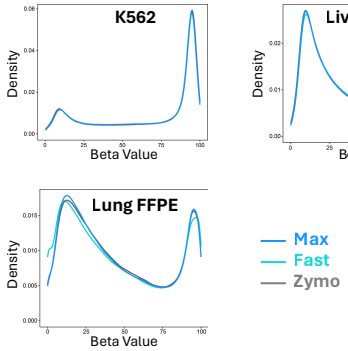
*FFPE DNA was extracted and immediately processed with the methyl conversion kits without any restoration treatment or optimization.

QC metrics after read-out on the Infinium MethylationEPIC v2.0 Array:

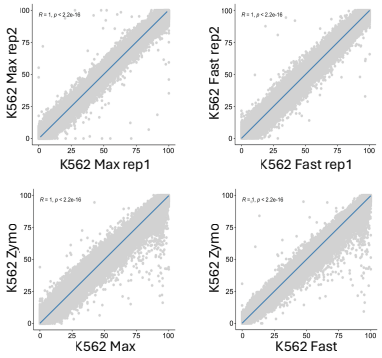
A) High Probe Detection Rate



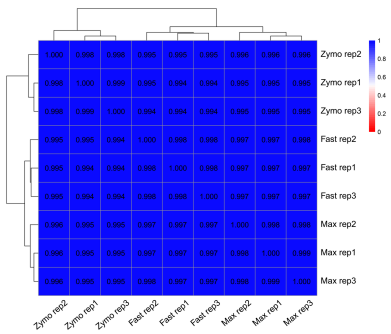
B) Expected Methylation Distribution



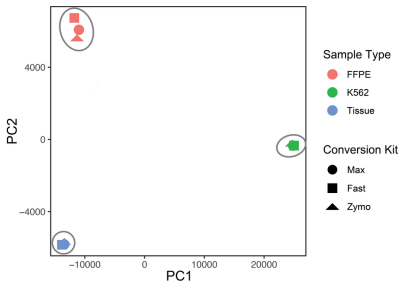
C) High Reproducibility



D) High Data Correlation



E) Minimal kit-induced bias



Results and Conclusion:

- All three bisulfite conversion kits demonstrated robust performance across multiple key metrics.
- **Both SuperMethyl™ Max and SuperMethyl™ Fast kits outperformed the EZ-DNA Methylation kit (Zymo Research) in probe detection rates, while also significantly reducing processing time.**
- The SuperMethyl™ Max kit supports low-input microarray workflow (data not shown), making it ideal for challenging and limited clinical samples.

Order your kit today

sales@ellisbio.com