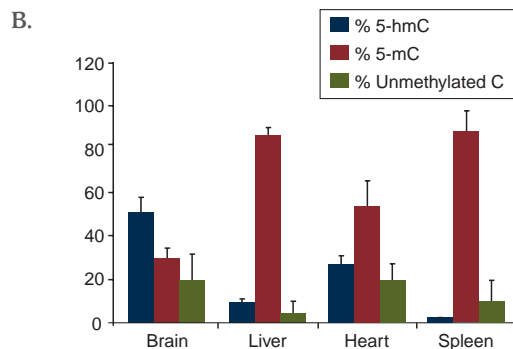
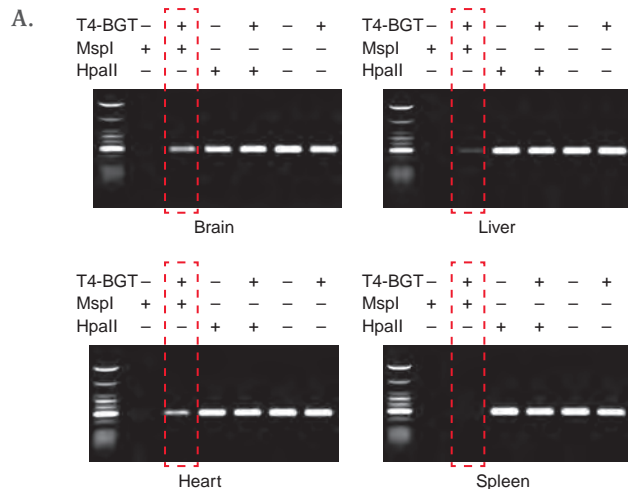


EpiMark™ 5-hmC and 5-mC Analysis Kit and T4 Phage β-glucosyltransferase

New England Biolabs is pleased to introduce the EpiMark™ 5-hmC and 5-mC Analysis Kit, a simple and robust method for the identification and quantitation of 5-hmC and 5-mC within a specific DNA locus. This enzymatic approach utilizes the differential methylation sensitivity of the isoschizomers MspI and HpaII in a simple 3-step protocol. The EpiMark kit is the first commercially available PCR-based assay to reproducibly identify and quantitate the presence of 5-hmC at a specific locus.

T4 Phage β-glucosyltransferase is a component of the EpiMark kit, but is also available as a standalone enzyme for the glucosylation of 5-hmC in DNA.

Analysis of the different methylation states in Balb/C mouse tissue samples (locus 12) using the EpiMark 5-hmC and 5-mC Analysis Kit.



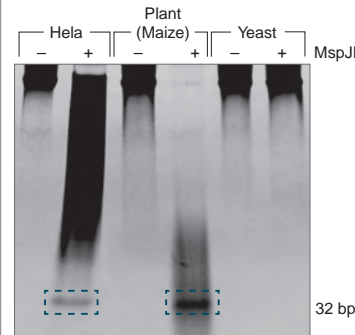
A) Endpoint PCR of the 6 different reactions needed for methylation analysis. The boxed lanes indicate the presence of 5-hmC. B) Real time PCR data was used to determine amounts of 5-hmC and 5-mC present. The results demonstrate a variation in 5-hmC levels in the tissue sources indicated.

Product	NEB #
EpiMark™ 5-hmC and 5-mC Analysis Kit	E3317
T4 Phage β-glucosyltransferase	M0357S/L

Methylation-Dependent Restriction Enzymes

Scientists at NEB recently identified the MspJI family of restriction enzymes, which are dependent on methylation and hydroxymethylation (1). These enzymes will excise 32 base pair fragments containing a centrally located 5-hmC or 5-mC modified residue that can be extracted and sequenced. Due to the known position of this modification, bisulfite conversion is not required prior to downstream analysis.

Simplify DNA methylation analysis with MspJI



MspJI recognizes methylated and hydroxymethylated DNA and cleaves out 32 bp fragments for downstream sequencing analysis. Overnight digestion of 1 μg of genomic DNA from various sources with or without MspJI is shown. Note: Yeast DNA does not contain methylated DNA, therefore no 32-mer is detected.

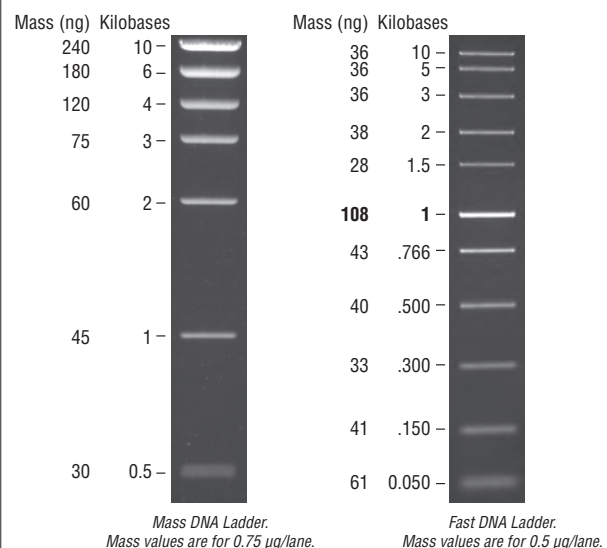
Product	NEB #
FspEI	R0662
LpnPI	R0663
MspJI	R0661

1. Zheng, Y. et al. (2010) A unique family of Mrr-like modification dependent restriction endonucleases. Nucl. Acids. Res. 38, 5527-5534.

Mass and Fast DNA Ladders

Our growing line of DNA Ladders now includes the Mass and Fast DNA Ladders. The Mass DNA Ladder is ideal for size determination and mass quantification in the range of 0.5 – 10 kb. The Fast DNA Ladder is designed for use with fast electrophoresis systems.

Product	NEB #
Mass DNA Ladder	N3237S
Fast DNA Ladder	N3238S

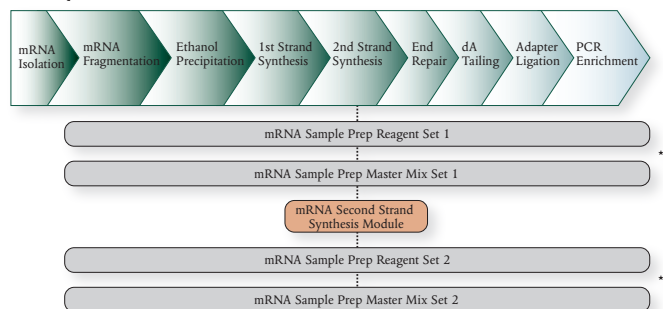


NEBNext® Reagents for mRNA Sample Preparation for Next Gen Sequencing

New England Biolabs now offers reagents for mRNA sample preparation upstream of next generation sequencing. These new NEBNext products include enzymes, buffers and protocols for the conversion of purified mRNA to DNA followed by subsequent library construction. Reagents are suitable for non-directional mRNA library preparation for sequencing using either the Illumina® GAIIX, GAIIE and HiSeq™2000 instruments, or the 454 GS FLX™ or GS Junior™ instruments. They are also suitable for the preparation of expression libraries. NEBNext reagents provide substantial cost savings, and the master mix option further streamlines the workflow by reducing the number of vials and pipetting steps.

For more information, please visit nebnext.com.

Conversion of purified mRNA to DNA followed by library construction



Product	NEB #
NEBNext® mRNA Sample Prep Reagent Set 1*	E6100S/L
NEBNext® mRNA Sample Prep Master Mix Set 1*	E6110S/L
NEBNext® mRNA Second Strand Synthesis Module	E6111S/L
NEBNext® mRNA Sample Prep Reagent Set 2**	E6115S/L
NEBNext® mRNA Sample Prep Master Mix Set 2**	E6116S/L
Companion Product	NEB #
NEBNext® Second Strand Synthesis (dNTP-Free) Reaction Buffer	B6117S

* Validation by sequencing with Illumina® GA IIX

** Validation by sequencing with 454/GS FLX

454 Sequencing, 454 GS FLX Titanium and 454 GS Junior are trademarks of Roche. Illumina is a registered trademark of Illumina, Inc.

NEBNext® Quick DNA Sample Prep Reagent Set 2 & Master Mix Set 2

The NEBNext™ Quick DNA Sample Prep Reagent Set 2 provides all the enzymes and buffers required for fast fragment DNA library preparation appropriate for Titanium sequencing on the GS FLX™ and GS Junior™, as well as making expression libraries. Starting with only 0.5 µg of fragmented DNA, this protocol enables DNA end repair, dA-tailing, and adaptor ligation in a single tube, in less than two hours, with no column purifications between the steps. Elimination of these purification steps significantly reduces both sample loss and prep time. After adaptor ligation, the correct fragment size is isolated using the provided NEBNext Sizing Buffer with Agencourt® AMPure® beads (not included).

For more information, please visit nebnext.com.

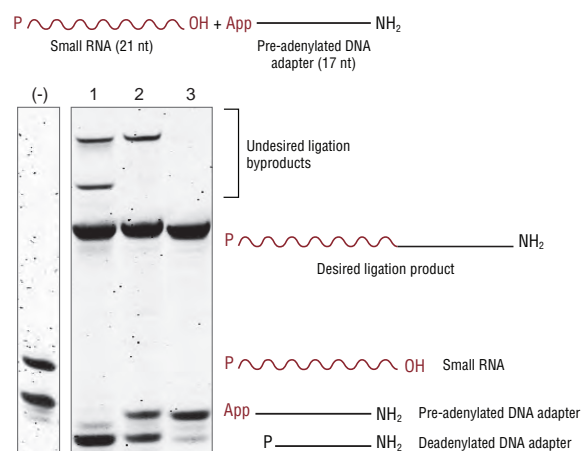
Product	NEB #
NEBNext™ Quick DNA Sample Prep Reagent Set 2	E6080S/L
NEBNext™ Quick DNA Sample Prep Master Mix Set 2	E6090S/L

T4 RNA Ligase 2, truncated K227Q

T4 RNA Ligase 2, truncated K227Q is a point mutant of T4 Rnl2 (1-249). Combining the K227Q mutation with the truncation further reduces the formation of byproducts to the lowest possible levels. This modification makes T4 Rnl2 truncated K227Q the enzyme of choice for demanding applications such as sequencing library preparation, and other applications where input material is limited.

Product	NEB #
T4 RNA Ligase 2, truncated K227Q	M0351S/L

Lower undesired ligation products with T4 RNA Ligase 2, truncated K227Q



1) T4 RNA Ligase 1; 2) T4 RNA Ligase 2, truncated; 3) T4 RNA Ligase 2, truncated K227Q. A 5'-phosphorylated 21-mer ssRNA was incubated with a 3'-blocked 17-mer pre-adenylated DNA adapter in a 1:2 molar ratio. Reactions contained RNA ligases as indicated. Ligation products were resolved by 15% denaturing PAGE and visualized with SybrGold nucleic acid stain.