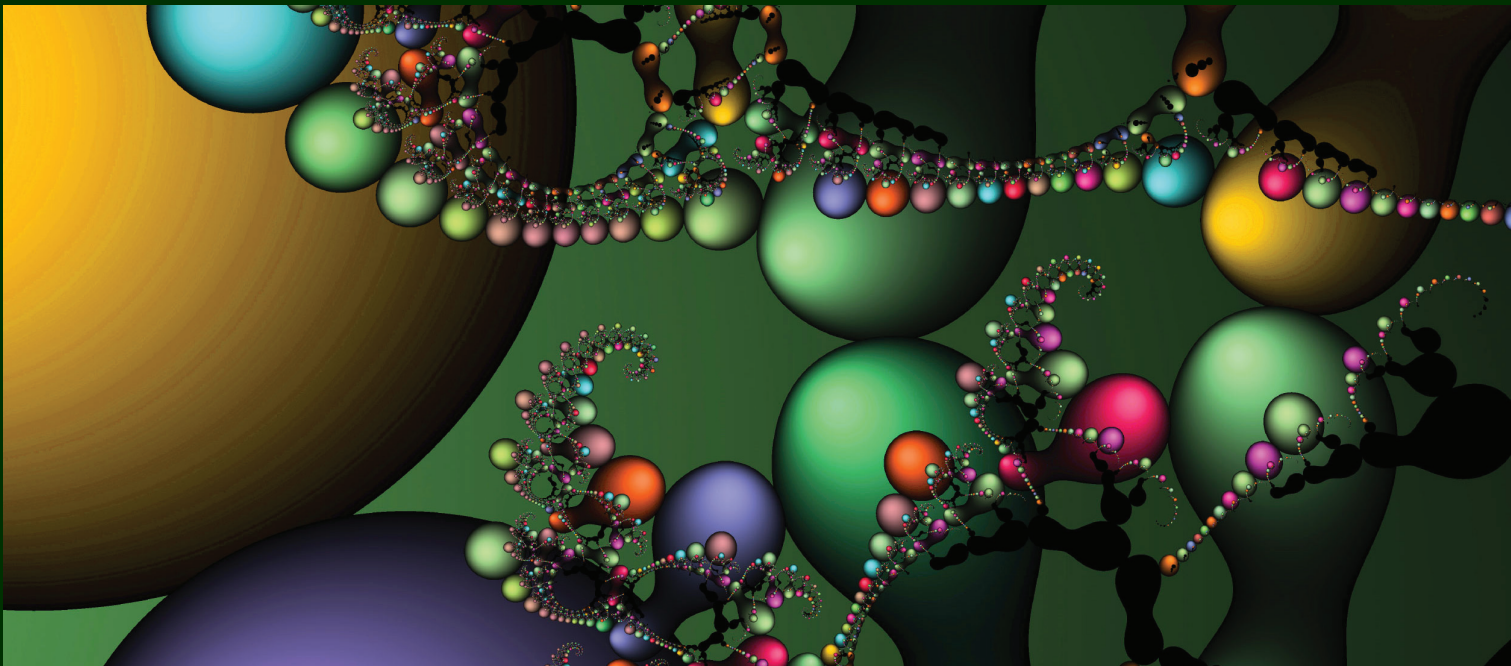


Epigenetic Solutions

Volume 4



research tools for:

DNA Modification & Methylation
Chromatin & Transcription
Histone Modifications
Gene Expression & Silencing
DNA Damage & Repair
Phosphorylation
Sumoylation

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DNA Methylation Quantification

MethylFlash™ Methylated DNA Quantification Kit

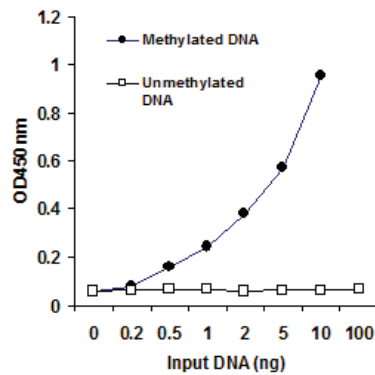
The MethylFlash™ Methylated DNA Quantification Kit, available in both colorimetric and fluorometric versions, is a complete set of optimized buffers and reagents to quantify global DNA methylation by specifically measuring levels of 5-methylcytosine (5-mC) in a microplate-based format.

Product Features

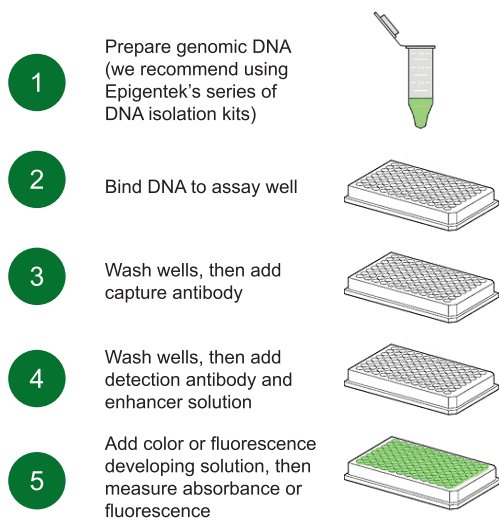
The MethylFlash™ Methylated DNA Quantification Kit (Colorimetric) is a further refinement of our previous Methylamp™ global DNA methylation quantification kits by simplifying the workflow and improving the consistency of results. It uses an innovative method to enable background signals to be extremely low, eliminating the plate drying and blocking steps. Compared to chromatography-based methods such as HPLC or mass spectrometry, this product provides a cost-effective way to accurately measure levels of 5-methylcytosine. The kit has the following advantages and features:

- ✓ Colorimetric or fluorometric assay with easy-to-follow steps for convenience and speed. The entire procedure can be finished within 4 hours.
- ✓ Innovative kit composition enables background signals to be extremely low, which eliminates the need for plate blocking and allows the assay to be simple, accurate, reliable, and consistent.
- ✓ High sensitivity, of which the detection limit of the colorimetric assay can be as low as 0.2 ng of methylated DNA and the fluorometric assay as low as 50 pg of methylated DNA.
- ✓ Optimized antibody and enhancer solutions allow high specificity to 5-mC, with no cross-reactivity to unmethylated cytosine and no or negligible cross-reactivity to hydroxymethylcytosine within the indicated concentration range of the sample DNA.
- ✓ Universal positive and negative controls are included, which are suitable for quantifying methylated DNA from any species.
- ✓ Strip-well microplate format makes the assay flexible: manual or high throughput analysis.

This kit is also specifically optimized for paired use with the MethylFlash™ Hydroxymethylated DNA Quantification Kit series for simultaneously quantifying both methylated DNA and hydroxymethylated DNA.



Demonstration of high sensitivity and specificity of methylated DNA detection achieved by the MethylFlash™ kit. Synthetic unmethylated DNA (contains 50% of cytosine) and methylated DNA (contains 50% of 5-methylcytosine) were added into the assay wells at different concentrations and then measured with the MethylFlash™ Methylated DNA Quantification Kit (Colorimetric).



Product Name	Size	Cat. No.
MethylFlash Methylated DNA Quantification Kit (Colorimetric)	48 assays	P-1034-48
	96 assays	P-1034-96
MethylFlash Methylated DNA Quantification Kit (Fluorometric)	48 assays	P-1035-48
	96 assays	P-1035-96

DNA Hydroxymethylation Quantification

MethylFlash™ Hydroxymethylated DNA Quantification Kit

The MethylFlash™ Hydroxymethylated DNA Quantification Kit, available in both colorimetric and fluorometric versions, is a complete set of optimized buffers and reagents to quantify global DNA hydroxymethylation by specifically measuring levels of 5-hydroxymethylcytosine (5-hmC) in a microplate-based format.

About 5-Hydroxymethylcytosine

5-hmC is a modified form of cytosine, recently discovered in animal tissues. The function of 5-hmC in epigenetics may be different from its forerunner 5-methylcytosine (5-mC) and currently remains a mystery. It is believed, though, that 5-hmC plays an important role in switching genes on and off. The presence of 5-hmC makes it necessary to not only re-evaluate existing DNA methylation data, but also necessary to determine the relative distribution and changes of 5-hmC in human tissues of healthy and diseased states. Prior to Epigentek's MethylFlash™ technology, there were no methods for practically and routinely identifying 5-hmC and discriminating this base from 5-mC.

Distinguishing Between 5-hmC and 5-mC

Currently used methylated DNA analysis methods including restriction enzyme digestion and bisulfite or MeDIP-mediated MS-PCR and sequencing are not suitable for 5-hmC detection as 5-hmC and 5-mC are virtually indistinguishable between each other with these methods. To address this problem, Epigentek offers the MethylFlash™ Hydroxymethylated DNA Quantification Kit which uses a unique immunospecific procedure to quantify global DNA hydroxymethylation. This product provides a cost-effective way to measure levels of 5-hydroxymethylcytosine and to distinguish between 5-hmC, 5-mC, and C. This allows for researchers to re-evaluate their DNA methylation data for DNA hydroxymethylation and to efficiently look for DNA hydroxymethylation in new DNA samples. The kit has the following advantages and features:

- ✓ Colorimetric or fluorometric assay with easy-to-follow steps for convenience and speed. The entire procedure can be completed within 3 hours and 45 minutes.
- ✓ High sensitivity, of which the detection limit of the colorimetric assay can be as low as 40 pg of hydroxymethylated DNA and the fluorometric assay as low as 20 pg of hydroxymethylated DNA.
- ✓ High specificity with no cross-reactivity to methylcytosine and unmethylated cytosine. 5-hydroxymethylcytosine is separately detected.
- ✓ Universal positive and negative controls are included, which are suitable for quantifying hydroxymethylated DNA from any species.
- ✓ Strip-well microplate format makes the assay flexible for either manual or high throughput analysis.
- ✓ Simple, reliable, and consistent assay conditions.

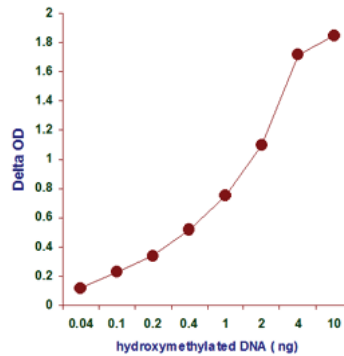


Fig 1 | Demonstration of high sensitivity of 5-hydroxymethylcytosine detection achieved by the MethylFlash™ kit. Synthetic hydroxymethylated DNA was added into the assay wells at different concentrations and then measured with the MethylFlash™ Hydroxymethylated DNA Quantification Kit.

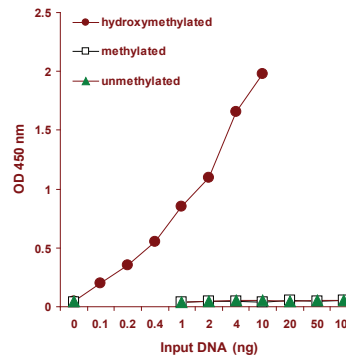
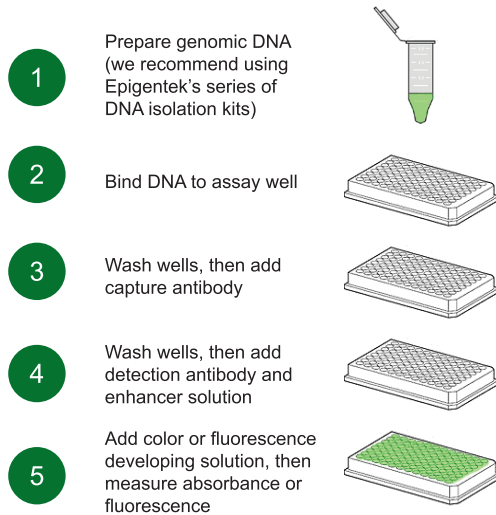


Fig 2 | Demonstration of high specificity of 5-hydroxymethylcytosine detection achieved by the MethylFlash™ kit. Synthetic unmethylated DNA (contains only cytosine), methylated DNA (contains only 5-methylcytosine), and hydroxymethylated DNA standard (contains only 5-hydroxymethylcytosine) were added into the assay wells at different concentrations and then measured with the MethylFlash™ Hydroxymethylated DNA Quantification Kit.



Product Name	Size	Cat. No.
MethylFlash Hydroxymethylated DNA Quantification Kit (Colorimetric)	48 assays	P-1036-48
	96 assays	P-1036-96
MethylFlash Hydroxymethylated DNA Quantification Kit (Fluorometric)	48 assays	P-1037-48
	96 assays	P-1037-96

Bisulfite DNA Modification

BisulFlash™ DNA Modification Kit

The BisulFlash™ DNA Modification Kit is a complete set of optimized buffers and reagents to perform DNA modification using a next generation DNA bisulfite conversion technology developed by Epigentek. Through a proprietary composition which allows DNA denaturation and bisulfite conversion to be processed at the same time, the complete procedure is reduced to only 30 minutes. Furthermore, it prevents more than 90% of DNA loss, completely converting unmethylated cytosine into uracil.

About Bisulfite Conversion

Traditional methods involve a separate denaturation step followed by a subsequent sodium bisulfite DNA conversion step -- but with the BisulFlash™ method, DNA denaturation status is concurrently sustained throughout the entire bisulfite DNA conversion process. This breakthrough approach enables the DNA conversion process to be significantly faster with higher conversion efficiency and accuracy. We continue to innovate with the development of the new BisulFlash™ kit by identifying four critical components of bisulfite conversion:

- ✓ **Speed:** Reduce the entire procedure to as short as 30 minutes without any reagent setup time.
- ✓ **Efficiency:** Completely convert unmethylated cytosine into uracil -- modified DNA > 99.99%.
- ✓ **DNA Protection:** Protect against DNA degradation of which more than 90% of DNA loss can be prevented, allowing for greater recovery.
- ✓ **Sensitivity:** Start with the lowest amount of input DNA for modification -- only 0.2 ng or just 50 cells.

The convenient ready-to-use, DNA conversion mix solution and single temperature incubation along with the features mentioned above allow for true perfection in bisulfite conversion. The BisulFlash™ DNA Modification Kit is suitable for MS-PCR, real time MS-PCR, methylation microarray, and pyrosequencing. Additionally, based on its ability for a complete cytosine conversion, it is specifically suitable for next generation methylation sequencing/pyrosequencing.

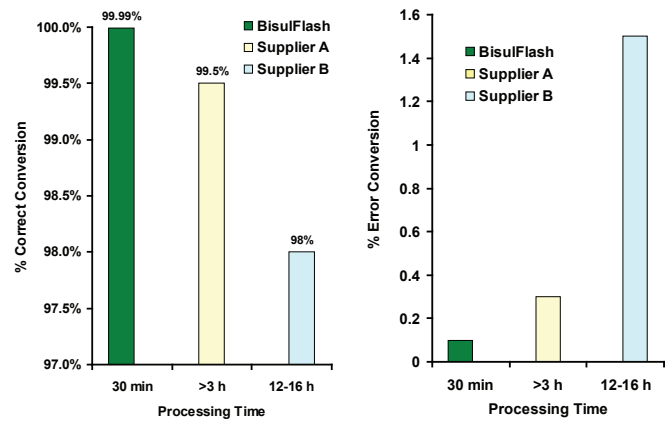
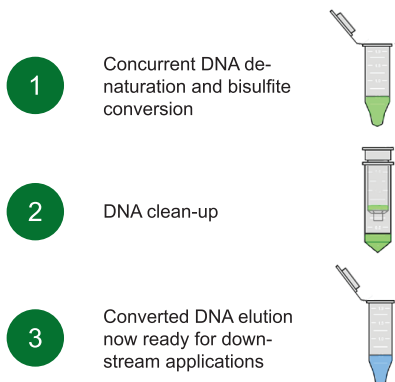


Fig 1 | Demonstration of high accuracy of DNA conversion achieved by the BisulFlash™ DNA Modification Kit. 50 ng of genomic DNA methylated in all CpG sites by DNA methylase was treated with the BisulFlash™ DNA Modification Kit. Converted DNA was then amplified by real time qPCR using primers for multiple promoters containing numerous CpG sites and then directly sequenced. Correct conversion (C-U) and inappropriate or error conversion (mC-T) rates were calculated as percentage of total cytosines or mCpGs. *Left Image:* correct conversion rate; *Right Image:* inappropriate or error conversion rate.

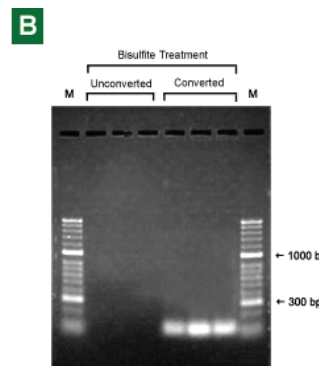
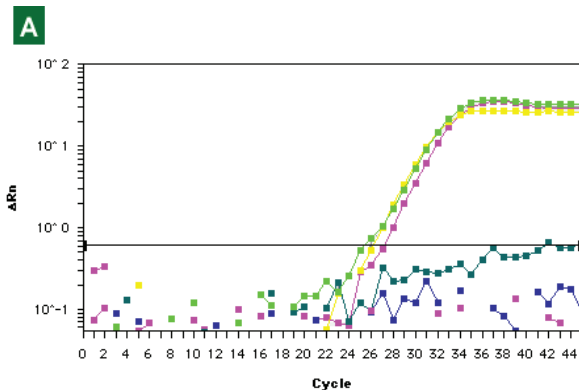
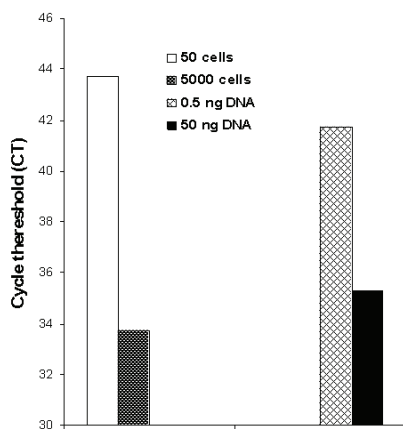


Fig 2 | Complete Cytosine Conversion. 200 ng of genomic DNA isolated from 3 cancer cell lines was treated with the BisulFlash™ DNA Modification Kit. Next, the unconverted and converted DNA in each treated sample were determined using unconverted DNA-specific and converted DNA-specific primers (β -actin, 110 bps), respectively. *Image A:* real time PCR with the Methylamp™ MS-qPCR Fast Kit (Cat. No. P-1028); *Image B:* end-point PCR. The BisulFlash™ kit treated DNA was completely converted and no unconverted DNA in the treated samples was determined after 45 cycles.

Product Name	Size	Cat. No.
BisulFlash DNA Modification Kit	50 reactions	P-1026-050

Methylamp™ Whole Cell Bisulfite Modification Kit

The Methylamp™ Whole Cell Bisulfite Modification Kit is an innovative and unique set of essential components which enables the experimenter to modify DNA directly from cells or tissues using Epigentek's uniquely simplified and streamlined bisulfite method in order to perform DNA methylation analysis. The entire procedure can be completed within only 3 hours. The Methylamp™ Whole Cell Bisulfite Modification Kit is specifically designed for DNA methylation research using minute amounts of starting materials including cells cultured in 96-well/384-well plates, tissue section samples, microdissection samples, tissue biopsy, and early embryonic cells/oocytes.



The different amounts of MCF-7 cells or DNA isolated from MCF-7 cells were modified using the Methylamp™ Whole Cell Bisulfite Modification Kit or Methylamp™ One-Step DNA Modification Kit, respectively. 10 µl of modified DNA were eluted and 2 µl of elution were used in real time PCR. A pair of primers and a probe designed to amplify both methylated and unmethylated alleles of β-actin.

Product Name	Size	Cat. No.
Methylamp Whole Cell Bisulfite Modification Kit	40 samples	P-1016-40
	80 samples	P-1016-80

Methylamp™ 96 DNA Modification Kit

High throughput DNA bisulfite conversion via a 96-well filter format. 2 hour and 30 minute procedure.

Product Name	Size	Cat. No.
Methylamp 96 DNA Modification Kit	96 samples	P-1008-1
	192 samples	P-1008-2

Methylamp™ Coupled DNA Isolation & Modification Kit

Streamlined method to isolate DNA and then perform bisulfite conversion, all in one kit. 2 hour and 20 minute procedure.

Product Name	Size	Cat. No.
Methylamp Coupled DNA Isolation & Modification Kit	40 samples	P-1002-40

Methylamp™ Universal Methylated DNA Kit

Provides a methylation-positive control for methylation studies. Includes enzymatically methylated human genomic DNA and all components for DNA modification. Methylated human DNA needs to be modified before it is used as a positive control in methylation specific PCR.

Product Name	Size	Cat. No.
Methylamp Universal Methylated DNA Kit	10 modifications	P-1011-1
	20 modifications	P-1011-2

Methylated DNA Amplification

Methylamp™ MS-qPCR Fast Kit

Enables you to perform fast, specific, sensitive and reproducible methylation-specific quantitative PCR. Very suitable for quantitative methylation-specific PCR in a fast format using very minute amounts of DNA. The included hot start DNA polymerase can specifically reduce the overall time required for MS-qPCR from 2.5 hours to less than 70 minutes. Significantly increases primer-bisulfite DNA template annealing, while simultaneously reduces non-specific annealing.

- ✓ Extremely fast 70 minute procedure.
- ✓ Abundant yields due to high amplification efficiency.

- ✓ Highly accurate and specific in MSP, with reduced false-positive results.
- ✓ Convenient master mix format allows easy reaction setup.
- ✓ Simple, reliable, and consistent assay conditions.
- ✓ Can be used with any block-based real-time PCR device.

Product Name	Size	Cat. No.
Methylamp MS-qPCR Fast Kit	100 reactions	P-1028-100
	200 reactions	P-1028-200

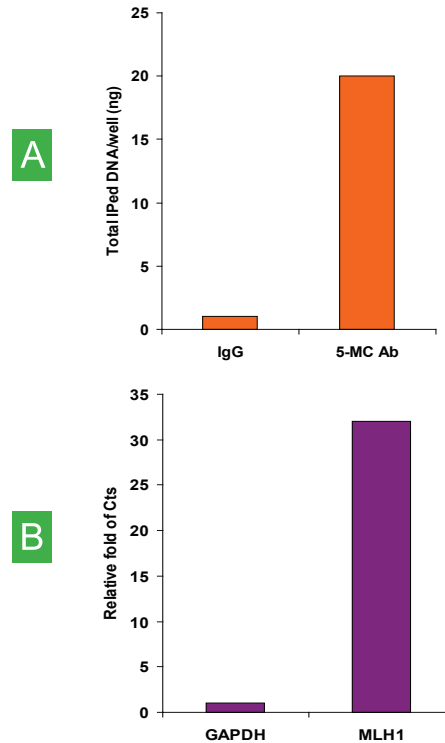
Methylated DNA Immunoprecipitation (meDIP)

Methylamp™ Methylated DNA Capture Kit

The Methylamp™ Methylated DNA Capture Kit is a complete set of essential components which enables the experimenter to use a proprietary and unique procedure and composition to enrich methylated DNA in a convenient 96-well plate format. In the assay, an antibody specific to methyl cytosine is used to immunoprecipitate methylated genomic DNA (meDIP). The enriched methylated fractions can then be used for a standard DNA detection. Product features include:

- ✓ Highly efficient enrichment of methylated DNA: > 98%
- ✓ Directly immunoprecipitate the methylated fractions of DNA from cell lysates.
- ✓ Extremely fast procedure: from cells to eluted DNA in just 3-4 hours.
- ✓ Strip microplate format makes the assay flexible: manual or high throughput.
- ✓ Columns for DNA purification are included: save time and reduce labor.
- ✓ Compatible with all DNA amplification-based approaches.
- ✓ Simple, reliable, and consistent assay conditions.

This kit contains all the reagents required for carrying out a successful capture of methylated DNA from a DNA sample. Particularly, this kit includes a ChIP-grade 5-methylcytosine antibody and a negative control normal mouse IgG. DNA is sheared, added into the microplate wells and is captured by the antibody. DNA is released from the antibody-captured methylated DNA complex, and purified through the specifically designed F-Spin Column. Eluted DNA can be used for various down-stream applications.



Enrichment of methylated DNA using the Methylamp™ Methylated DNA Capture Kit (Cat. No. P-1015), DNA (0.5 µg) isolated from MCF-7 cells was added into the microtubes. (a) Methylated DNA was captured by a 5-mC antibody. (b) Captured methylated DNA was used for analyzing methylation level of GAPDH and MLH1 promoter with the use of primers and probes specific to GAPDH and MLH1 promoters, respectively.

Product Name	Size	Cat. No.
Methylamp Methylated DNA Capture (MeDIP) Kit	24 reactions	P-1015-24
	48 reactions	P-1015-48

EpiQuik™ Methylated DNA Immunoprecipitation Kit

Enrich methylated DNA directly from cells. In this assay, an antibody specific to methyl cytosine is used to immunoprecipitate methylated genomic DNA. The immunoprecipitated methylated fractions can then be used for a standard DNA detection. The kit is suitable for combining the specificity of methylated DNA immunoprecipitation with qualitative and quantitative PCR, and southern blot, as well as DNA microarray.

Product Name	Size	Cat. No.
EpiQuik Methylated DNA Immunoprecipitation Kit	24 reactions	P-2019-24
	48 reactions	P-2019-48

EpiQuik™ Tissue Methylated DNA Immunoprecipitation Kit

Enrich methylated DNA directly from various mammalian tissues. An antibody specific to methyl cytosine is used to immunoprecipitate methylated genomic DNA. The immunoprecipitated methylated fractions can then be used for a standard DNA detection.

Product Name	Size	Cat. No.
EpiQuik Tissue Methylated DNA Immunoprecipitation Kit	24 reactions	P-2020-24
	48 reactions	P-2020-48

DNA Methyltransferase Assays

EpiQuik™ DNA Methyltransferase (DNMT) Activity/Inhibition Assay Ultra Kit

The EpiQuik™ DNA Methyltransferase Activity/Inhibition Assay Ultra Kit is a complete set of optimized buffers and reagents that allows the experimenter to measure DNA methyltransferase activity or inhibition at extremely fast speeds. The kit is ready-to-use and provides all the essential components needed to carry out a successful DNMT activity/inhibition experiment without the need for radioactivity or any special equipment.

About DNA Methyltransferases

The addition of methyl groups is carried out by a family of enzymes, DNA methyltransferases (DNMTs). Chromatin structure in the vicinity of gene promoters also affects DNA methylation and transcriptional activity. DNMT1, DNMT3A, and DNMT3B are required for the establishment and maintenance of DNA methylation patterns. Two additional enzymes, DNMT2/TRDMT1 and DNMT3L, may also have more specialized but related functions. DNMT1 appears to be responsible for maintenance of established patterns of DNA methylation, while DNMT3A and 3B seem to mediate establishment of new or de novo, DNA methylation patterns. DNMT2/TRDMT1 was shown to methylate tRNA^{Asp} at C38 and DNMT3L is found to be a catalytically inactive regulatory factor of DNA methyltransferases, which is essential for the function of DNMT3A and DNMT3B. Diseased cells such as cancer cells may be different in that DNMT1 alone is not responsible for maintaining abnormal gene hypermethylation and both DNMT1 and DNMT3B may cooperate with this function.

About The Assay

The EpiQuik DNMT Activity/Inhibition Assay Ultra Kit is a further refinement of its predecessor kit by enhancing sample signals and significantly minimizing background signals, in addition to being five times more sensitive. In this assay, a universal DNMT substrate is stably coated onto the wells. DNMT enzymes transfer methyl groups to cytosines from Adomet to methylate the DNA substrate. The methylated DNA can be recognized with an anti-5-methylcytosine antibody. The ratio or amount of methylated DNA, which is proportional to the enzyme activity, can then be colorimetrically or fluorometrically measured by reading the absorbance or fluorescence in a microplate spectrophotometer. The activity of DNMT enzymes is proportional to the OD or RFU intensity measured. The kit has the following advantages and features:

- ✓ Colorimetric or fluorometric assay with easy-to-follow steps for convenience and speed. The entire procedure can be completed within 3 hours and 45 minutes.
- ✓ 5 fold higher sensitivity, of which the detection limit can be as low as 0.5 µg of nuclear extract or 0.5 ng of purified enzymes.
- ✓ Optimized antibody and enhancer solutions allow high specificity to 5-mC, with no cross-reactivity to unmethylated cytosine.

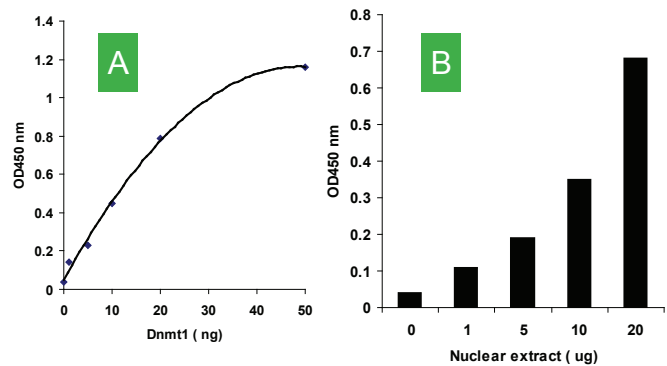
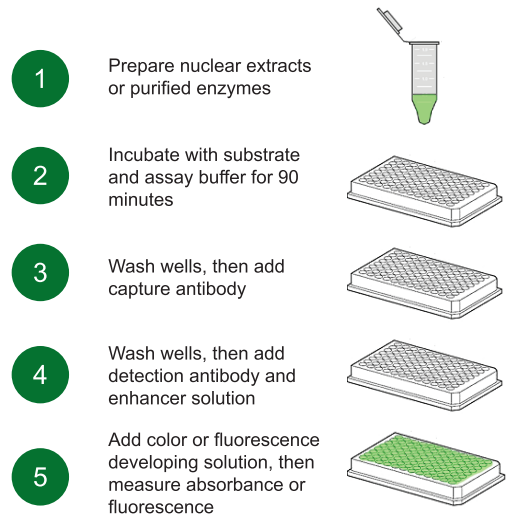


Fig 1 | EpiQuik DNMT activity and inhibition colorimetric assay. (a) High sensitivity and specificity achieved by using recombinant DNMT1 with the EpiQuik DNA Methyltransferase Activity/Inhibition Assay Ultra Kit (Colorimetric); (b) High sensitivity and specificity of achieved by using nuclear extract with the EpiQuik DNMT Activity/Inhibition Assay Ultra Kit (Colorimetric). Nuclear extracts were prepared from MCF-7 cells using the EpiQuik Nuclear Extraction Kit (Cat # OP-0002).

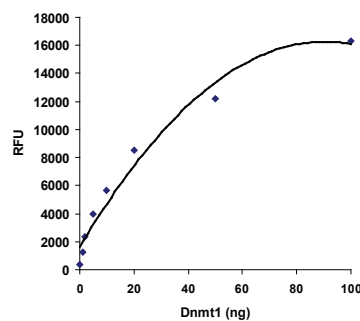


Fig 2 | EpiQuik DNMT activity and inhibition fluorometric assay. High sensitivity and specificity of achieved by using recombinant DNMT1 with the EpiQuik DNMT Activity/Inhibition Assay Ultra Kit (Fluorometric).

Product Name	Size	Cat. No.
EpiQuik DNA Methyltransferase Activity/Inhibition Assay Ultra Kit (Colorimetric)	48 assays	P-3009-48
	96 assays	P-3009-96
EpiQuik DNA Methyltransferase Activity/Inhibition Assay Ultra Kit (Fluorometric)	48 assays	P-3010-48
	96 assays	P-3010-96

DNA Methyltransferase Quantification

EpiQuik™ DNMT1, DNMT3A, and DNMT3B Assay Kits

Each of these three kits allows the experimenter to quantitatively measure either total DNMT1, DNMT3A, or DNMT3B amounts, respectively, with fresh tissues or cultured cells from humans or mice.

In the assay, a unique DNMT affinity substrate is stably coated on the strip well. The sample is then added into the wells and the specific DNMT enzyme contained in the sample binds to the substrate. The bound DNMT enzyme can be recognized with a specific DNMT antibody and is then colorimetrically quantified through an ELISA-like reaction. The amount of DNMT is proportional to the intensity of color development. The entire procedure can be completed within 3 hours.

Product Name	Size	Cat. No.
EpiQuik DNMT1 Assay Kit	24 assays	P-3011-1
	48 assays	P-3011-2
	96 assays	P-3011-3
EpiQuik DNMT3A Assay Kit	24 assays	P-3012-1
	48 assays	P-3012-2
	96 assays	P-3012-3
EpiQuik DNMT3B Assay Kit	24 assays	P-3013-1
	48 assays	P-3013-2
	96 assays	P-3013-3

DNA Methyltransferase Screening Assays

EpiQuik™ DNA Methyltransferase 1 Activity/Inhibitor Screening Assay Kit

Microplate format kit selectively screens DNMT1 activity/inhibition in 3 hours. The selective inhibition of Dnmt1 may lead to demethylation and expression of the silenced tumor suppressor genes, and possibly cancer therapeutic agents.

Product Name	Size	Cat. No.
EpiQuik DNA Methyltransferase 1 Activity/Inhibitor Screening Assay Kit	48 assays	P-3006-48
	96 assays	P-3006-96

EpiQuik™ DNA Methyltransferase 3B Activity/Inhibitor Screening Assay Kit

Microplate format kit selectively screens DNMT3B activity/inhibition in 3 hours. The selective inhibition of Dnmt1 may lead to demethylation and expression of the silenced tumor suppressor genes, and possibly cancer therapeutic agents.

Product Name	Size	Cat. No.
EpiQuik DNA Methyltransferase 3B Activity/Inhibitor Screening Assay Kit	48 assays	P-3007-48
	96 assays	P-3007-96

Other DNA Methylation Related Assays

EpiQuik™ DNA Demethylase Activity/Inhibition Assay Kit

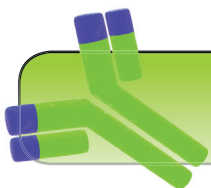
Microplate format kit to measure DNA demethylase activity/inhibition in 3 hours.

Product Name	Size	Cat. No.
EpiQuik DNA Demethylase Activity/Inhibition Assay Kit	48 assays	P-3019-48
	96 assays	P-3019-96

EpiQuik™ MBD2 Binding Activity/Inhibition Assay Kit

Microplate format kit to measure binding activity of MBD2 to methylated DNA in 3 hours.

Product Name	Size	Cat. No.
EpiQuik MBD2 Binding Activity/Inhibition Assay Kit	48 assays	P-3021-48
	96 assays	P-3021-96



Epigentek is your one stop shop for epigenetic-related antibodies, with an extensive collection of over 600 antibodies for epigenetic research and experiments. For a complete list, visit www.epigentek.com/antibodies

Chromatin Immunoprecipitation

ChromaFlash™ Chromatin Immunoprecipitation Kit

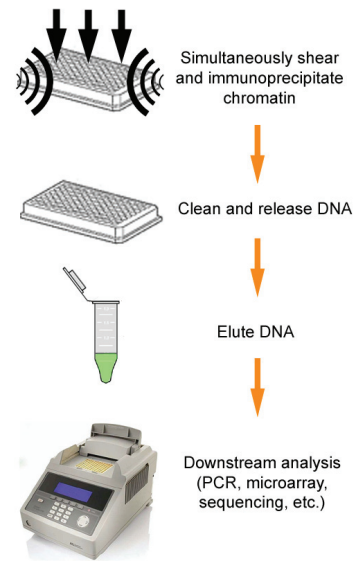
Next generation sequencing and microarrays are becoming major technologies of massive protein-DNA analysis. The major features of these technologies are their rapidness and high throughput capabilities. To be compatible with these new technologies, rapid and massive generation of target protein-bound DNA is critically required. To meet this requirement, Epigentek developed ChromaFlash™, a new ChIP technology, and incorporated it into the ChromaFlash™ One-Step ChIP Kit. By utilizing this kit and the powerful EpiSonic™ sonication instrument, chromatin shearing and immunoprecipitation can be simultaneously processed, which greatly propels ChIP to the fastest speeds in a high throughput format with much greater efficiency. Alternatively, the standalone protocol* can be used without the need for the EpiSonic sonication instrument. The kit has the following advantages and features:

- ✓ *The fastest and most convenient ChIP method.* The entire procedure (from intact chromatin sample to ready-for-use DNA) via the accelerated protocol is less than 60 minutes with the actual handling time being less than 10 minutes due to simultaneous processing of chromatin shearing and immunoprecipitation ("One-Step ChIP"). The entire procedure via the alternative standalone protocol is less than 4 hours.
- ✓ *96-well plate format makes the assay flexible.* Either (a) manual with one single reaction each time; or (b) high throughput with 96 reactions each time.
- ✓ *Highly efficient enrichment.* Enrichment ratio of positive to negative control > 120, and an extremely low number of cells required (as low as 10,000 cells per ChIP reaction).
- ✓ *High reproducibility.* Pre-optimized ChIP conditions and, with the EpiSonic 1000, digitally acoustic-controlled reaction processing in sealed vials make the ChIP procedure consistent.
- ✓ *Wide downstream analysis compatibility.* Compatible with various downstream analysis workflows including ChIP-PCR, ChIP-on-chip, and ChIP-seq.

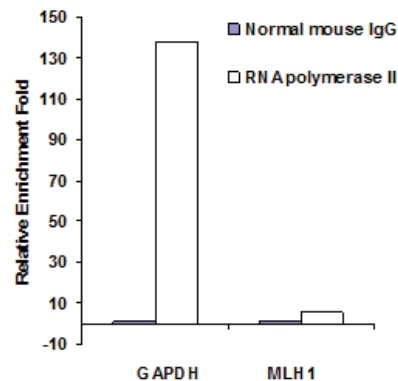
*The standalone protocol requires separate chromatin shearing and an additional procedure time of 2-3 hours.

The ChromaFlash™ One-Step ChIP Kit contains all necessary reagents required for carrying out a successful chromatin immunoprecipitation directly from chromatin extracts isolated from mammalian cells or tissues. This kit includes a positive control antibody (RNA polymerase II), a negative control non-immune IgG, and GAPDH primers that can be used as a positive control to demonstrate the efficacy of the kit reagents and protocol. RNA polymerase II is considered to be enriched in the GAPDH gene promoter that is expected to be undergoing transcription in most growing mammalian cells and can be immunoprecipitated by RNA polymerase II but not by non-immune IgG. Immunoprecipitated DNA is then cleaned, released, and eluted. Eluted DNA can be used for various downstream applications such as ChIP-PCR, ChIP-on-chip, and ChIP-seq.

The predecessors EpiQuik™ ChIP Kit and EpiQuik™ Tissue ChIP Kit are also available, except in the United States.



▲ Schematic procedure of the accelerated protocol of the ChromaFlash™ One-Step ChIP Kit.



The data above shows the analysis of enrichment of RNA polymerase II in GAPDH and MLH1 promoters by the ChromaFlash One-Step ChIP Kit, with chromatin extract prepared from formaldehyde fixed colon cancer cells. Captured DNA was used for analyzing levels of RNA polymerase II enriched in the GAPDH and MLH1 promoters.

Product Name	Size	Cat. No.
ChromaFlash One-Step ChIP Kit	48 reactions	P-2025-48
	96 reactions	P-2025-96
ChromaFlash One-Step Magnetic ChIP Kit	48 reactions	P-2026-48
	96 reactions	P-2026-96
EpiQuik Chromatin Immunoprecipitation Kit (not available in USA)	48 reactions	P-2002-2
	96 reactions	P-2002-3
EpiQuik Tissue Chromatin Immunoprecipitation Kit (not available in USA)	48 reactions	P-2003-2
	96 reactions	P-2003-3

Methyl-Histone & Acetyl-Histone ChIP

EpiQuik™ Chromatin Immunoprecipitation Kits

Chromatin immunoprecipitation (ChIP) offers an advantageous tool for studying protein-DNA interaction. It allows for detecting that a specific protein binds to the specific sequences of a gene in living cells through the combination of PCR (ChIP-PCR), microarray (ChIP-chip), and sequencing (ChIP-Seq). For example, measurement of the amount of methylated histone H3 at lysine 9 (meH3-K9) associated with a specific gene promoter region under various conditions can be achieved through a ChIP-PCR assay, while recruitment of meH3-K9 to the promoters on the genome-wide scale can be detected by ChIP-chip. Particularly, ChIP with antibodies directly against modified histones and various transcriptional factors is widely demanded. However, the conventional ChIP is time consuming (2-3 days) with low throughput.

Epigentek provides a series of microplate-based ChIP kits with included acetyl histone or methyl histone antibodies that allows the experimenter to perform chromatin immunoprecipitation at extraordinarily rapid speeds and consistency. The kits are ready-to-use and provide all the essential components needed to carry out a successful ChIP experiment. The kits are suitable for combining the specificity of immunoprecipitation with qualitative and quantitative PCR, DNA sequencing, and DNA microarray.

- ✓ Extremely fast procedure available, which can be finished within 5 hours.
- ✓ Strip-well microplate format makes the assay flexible: manual or high throughput.
- ✓ Columns for DNA purification are included: save time and reduce labor.

Product Name	Size	Cat. No.
EpiQuik Methyl Histone H3K4 ChIP Kit	24 reactions	P-2007-24
	48 reactions	P-2007-48
EpiQuik Tissue Methyl Histone H3K4 ChIP Kit	24 reactions	P-2009-24
	48 reactions	P-2009-48
EpiQuik Methyl Histone H3K9 ChIP Kit	24 reactions	P-2006-24
	48 reactions	P-2006-48
EpiQuik Tri-Methyl Histone H3K9 ChIP Kit	24 reactions	P-2006T-24
	48 reactions	P-2006T-48
EpiQuik Tissue Methyl Histone H3K9 ChIP Kit	24 reactions	P-2008-24
	48 reactions	P-2008-48
EpiQuik Methyl Histone H3K27 ChIP Kit	24 reactions	P-2015-24
	48 reactions	P-2015-48
EpiQuik Tissue Methyl Histone H3K27 ChIP Kit	24 reactions	P-2016-24
	48 reactions	P-2016-48
EpiQuik Acetyl Histone H3 ChIP Kit	24 reactions	P-2010-24
	48 reactions	P-2010-48
EpiQuik Tissue Acetyl Histone H3 ChIP Kit	24 reactions	P-2012-24
	48 reactions	P-2012-48
EpiQuik Acetyl Histone H4 ChIP Kit	24 reactions	P-2011-24
	48 reactions	P-2011-48
EpiQuik Tissue Acetyl Histone H4 ChIP Kit	24 reactions	P-2013-24
	48 reactions	P-2013-48

Other Protein-DNA Interaction Related Kits

EpiQuik™ Plant ChIP Kit

Microplate format kit for carrying out chromatin immunoprecipitation from plant cells. 6 hour procedure with columns included for DNA purification. Suitable for combining the specificity of immunoprecipitation with qualitative and quantitative PCR, MS-PCR, DNA sequencing, and Southern blot, as well as DNA microarray.

Product Name	Size	Cat. No.
EpiQuik Plant ChIP Kit	24 reactions	P-2014-24
	48 reactions	P-2014-48

EpiQuik™ General Protein-DNA Binding Assay Kit

Microplate format kit investigates protein-DNA interaction efficiently by measuring the transcription factor of DNA binding activity in nuclear extracts. Quick, 3 hour procedure.

Product Name	Size	Cat. No.
EpiQuik General Protein-DNA Binding Assay Kit (Colorimetric)	96 assays	P-2004-96
EpiQuik General Protein-DNA Binding Assay Kit (Fluorometric)	96 assays	P-2005-96

Histone Methyltransferase Assays

EpiQuik™ Histone Methyltransferase Activity/Inhibition Assay Kits

Histone methyltransferases (HMTs) control or regulate DNA methylation through chromatin-dependent transcription repression or activation. Inhibition of HMTs may lead to expression of the silenced genes, and HMT inhibitors are currently developed for various therapeutic or experimental applications. The EpiQuik™ Histone Methyltransferase Activity/Inhibition Assay Kits for H3K4, H3K9, and H3K27 replaces radioisotopic methods by using a microplate-based, colorimetric procedure to measure HMT activity/inhibition in 3 hours.

Product Name	Size	Cat. No.
EpiQuik Histone Methyltransferase Activity/Inhibition Assay Kit (H3K4)	48 assays	P-3002-1
	96 assays	P-3002-2
EpiQuik Histone Methyltransferase Activity/Inhibition Assay Kit (H3K9)	48 assays	P-3003-1
	96 assays	P-3003-2
EpiQuik Histone Methyltransferase Activity/Inhibition Assay Kit (H3K27)	48 assays	P-3005-48
	96 assays	P-3005-96

Histone Demethylase Assays

EpiQuik™ Histone Demethylase (H3K4 Specific) Activity/Inhibition Assay Kit

Fluorescence microplate format kit measures activity/inhibition of H3K4 specific histone demethylases from cells or tissue extracts in 3 hours.

Product Name	Size	Cat. No.
EpiQuik Histone Demethylase (H3K4 Specific) Activity/Inhibition Assay Kit	48 assays	P-3074-48
	96 assays	P-3074-96

EpiQuik™ Histone Demethylase (H3K9 Specific) Activity/Inhibition Fast Assay Kit

Fluorescence microplate format kit measures activity/inhibition of H3K9 specific histone demethylases from cells or tissue extracts in 1.5 hours.

Product Name	Size	Cat. No.
EpiQuik Histone Demethylase (H3K9 Specific) Activity/Inhibition Fast Assay Kit	48 assays	P-3077-48
	96 assays	P-3077-96

Epigenase™ LSD1 Activity/Inhibition Assay Kit

96-well micropate format kit measures LSD1 demethylase activity/inhibition using nuclear extracts or purified enzymes from a broad range of species such as mammal, plant, and bacteria, in a variety of forms including cultured cells and fresh tissues. Available in both colorimetric and fluorometric formats. This 3 hour procedure directly detects LSD1-converted demethylated product, rather than byproducts, thereby eliminating assay interferences caused by thiol-containing chemicals such as DTT, GSH, and 2-mercaptoethanol. The activity can be detected from as low as 5 ng of purified LSD1 enzyme, which is about 20 times better than that obtained by H₂O₂/formaldehyde release-based LSD1 assays.

Product Name	Size	Cat. No.
Epigenase LSD1 Activity/Inhibition Assay Kit (Colorimetric)	48 assays	P-3078-48
	96 assays	P-3078-96
Epigenase LSD1 Activity/Inhibition Assay Kit (Fluorometric)	48 assays	P-3079-48
	96 assays	P-3079-96

EpiQuik™ Histone Demethylase LSD1 Inhibitor Screening Assay Core Kit

Fluorescence microplate format kit screens LSD1 demethylase inhibitors and measures inhibition of LSD1 in 1 hour. No microplate washing step necessary.

Product Name	Size	Cat. No.
EpiQuik Histone Demethylase LSD1 Inhibitor Screening Assay Core Kit	48 assays	P-3075A-48
	96 assays	P-3075A-96



We also offer **epigenetic drug discovery services** with many screening targets including DNA methyltransferases, histone deacetyltransferases, histone methylation, histone acetylases, DNA methylation, and phosphorylation. Learn more at www.epigentek.com/discover

Histone Methylation Quantification

EpiQuik™ Total Histone H3 Quantification Kit

This ELISA-like kit quantifies levels of all histone H3 proteins independent of their modified states, and can be used for normalizing the modified histone H3 content of samples when run in parallel with Epigentek's histone modification quantification kit series. A 2.5 hour procedure for use with human, mouse, and rat samples, including from fresh and frozen tissues, and cultured adherent and suspension cells.

Product Name	Size	Cat. No.
EpiQuik Total Histone H3 Quantification Kit (Colorimetric)	48 assays	P-3062-48
	96 assays	P-3062-96
EpiQuik Total Histone H3 Quantification Kit (Fluorometric)	48 assays	P-3063-48
	96 assays	P-3063-96

EpiQuik™ In Situ Histone Methylation Assay Kits

These microplate format kits specifically measure modified histone H3 methylation *in situ* using cultured adherent cells within 3 hours.

Product Name	Size	Cat. No.
EpiQuik In Situ Histone H3K4 Methylation Assay Kit	96 assays	P-3015-096
	2x96 assays	P-3015-192
EpiQuik In Situ Histone H3K9 Methylation Assay Kit	96 assays	P-3016-096
	2x96 assays	P-3016-192
EpiQuik In Situ Histone H3K27 Tri-Methylation Assay Kit	96 assays	P-3014-096
	2x96 assays	P-3014-192

Quantification of Modified Histone Methylation

EpiQuik™ Global Histone Methylation Quantification Kits

Quantitative detection of global histone methylation could provide useful information for better understanding of epigenetic regulation of gene activation/repression and for developing HMT-targeted drugs. These ELISA-like kits are available in both colorimetric and fluorometric versions as a complete series for both H3 and H4 at all lysines. By using the EpiQuik™ kits for quantifying methylated or acetylated histone H3 and H4, you are guaranteed the following features:

- ✓ *Speed* - 2 hour 30 minute procedure
- ✓ *Convenience* - No radioactivity, electrophoresis, or chromatography. Control is conveniently included for measurement of methylated histones.
- ✓ *Sensitivity* - Specifically capture methylated histones with the detection limit as low as 2 ng/well colorimetrically and 0.2 ng/well fluorometrically. Detection range from 20 ng to 5 µg/well of histone extracts.
- ✓ *Flexibility* - Strip microplate format allows either manual or high throughput assays.
- ✓ *Reliability* - Consistent assay condition and superior results.

Histone	Methyl Group	Detection Type	Size	Cat. No.
H3K4	Mono-Methyl	Colorimetric	48 assays	P-3024-48
			96 assays	P-3024-96
H3K4	Mono-Methyl	Fluorometric	48 assays	P-3025-48
			96 assays	P-3025-96
H3K4	Di-Methyl	Colorimetric	48 assays	P-3022-48
			96 assays	P-3022-96
H3K4	Di-Methyl	Fluorometric	48 assays	P-3023-48
			96 assays	P-3023-96
H3K4	Tri-Methyl	Colorimetric	48 assays	P-3026-48
			96 assays	P-3026-96
H3K4	Tri-Methyl	Fluorometric	48 assays	P-3027-48
			96 assays	P-3027-96
H3K4	Pan-Methyl	Colorimetric	96 assays	P-3028-96
H3K4	Pan-Methyl	Fluorometric	96 assays	P-3029-96

Histone	Methyl Group	Detection Type	Size	Cat. No.
H3K9	Mono-Methyl	Colorimetric	48 assays	P-3030-48
			96 assays	P-3030-96
H3K9	Mono-Methyl	Fluorometric	48 assays	P-3031-48
			96 assays	P-3031-96
H3K9	Di-Methyl	Colorimetric	48 assays	P-3032-48
			96 assays	P-3032-96
H3K9	Di-Methyl	Fluorometric	48 assays	P-3033-48
			96 assays	P-3033-96
H3K9	Tri-Methyl	Colorimetric	48 assays	P-3034-48
			96 assays	P-3034-96
H3K9	Tri-Methyl	Fluorometric	48 assays	P-3035-48
			96 assays	P-3035-96
H3K9	Pan-Methyl	Colorimetric	96 assays	P-3036-96
H3K9	Pan-Methyl	Fluorometric	96 assays	P-3037-96

Histone	Methyl Group	Detection Type	Size	Cat. No.
H3K27	Mono-Methyl	Colorimetric	48 assays	P-3038-48
			96 assays	P-3038-96
H3K27	Mono-Methyl	Fluorometric	48 assays	P-3039-48
			96 assays	P-3039-96
H3K27	Di-Methyl	Colorimetric	48 assays	P-3040-48
			96 assays	P-3040-96
H3K27	Di-Methyl	Fluorometric	48 assays	P-3041-48
			96 assays	P-3041-96
H3K27	Tri-Methyl	Colorimetric	48 assays	P-3042-48
			96 assays	P-3042-96
H3K27	Tri-Methyl	Fluorometric	48 assays	P-3043-48
			96 assays	P-3043-96
H3K27	Pan-Methyl	Colorimetric	96 assays	P-3044-96
H3K27	Pan-Methyl	Fluorometric	96 assays	P-3045-96
H3K36	Mono-Methyl	Colorimetric	48 assays	P-3046-48
			96 assays	P-3046-96
H3K36	Mono-Methyl	Fluorometric	48 assays	P-3047-48
			96 assays	P-3047-96
H3K36	Di-Methyl	Colorimetric	48 assays	P-3048-48
			96 assays	P-3048-96
H3K36	Di-Methyl	Fluorometric	48 assays	P-3049-48
			96 assays	P-3049-96
H3K36	Tri-Methyl	Colorimetric	48 assays	P-3050-48
			96 assays	P-3050-96
H3K36	Tri-Methyl	Fluorometric	48 assays	P-3051-48
			96 assays	P-3051-96
H3K36	Pan-Methyl	Colorimetric	96 assays	P-3052-96
H3K36	Pan-Methyl	Fluorometric	96 assays	P-3053-96

Histone	Methyl Group	Detection Type	Size	Cat. No.
H3K79	Mono-Methyl	Colorimetric	48 assays	P-3054-48
			96 assays	P-3054-96
H3K79	Mono-Methyl	Fluorometric	48 assays	P-3055-48
			96 assays	P-3055-96
H3K79	Di-Methyl	Colorimetric	48 assays	P-3056-48
			96 assays	P-3056-96
H3K79	Di-Methyl	Fluorometric	48 assays	P-3057-48
			96 assays	P-3057-96
H3K79	Tri-Methyl	Colorimetric	48 assays	P-3058-48
			96 assays	P-3058-96
H3K79	Tri-Methyl	Fluorometric	48 assays	P-3059-48
			96 assays	P-3059-96
H3K79	Pan-Methyl	Colorimetric	96 assays	P-3060-96
H3K79	Pan-Methyl	Fluorometric	96 assays	P-3061-96
H4K20	Mono-Methyl	Colorimetric	48 assays	P-3064-48
			96 assays	P-3064-96
H4K20	Mono-Methyl	Fluorometric	48 assays	P-3065-48
			96 assays	P-3065-96
H4K20	Di-Methyl	Colorimetric	48 assays	P-3066-48
			96 assays	P-3066-96
H4K20	Di-Methyl	Fluorometric	48 assays	P-3067-48
			96 assays	P-3067-96
H4K20	Tri-Methyl	Colorimetric	48 assays	P-3068-48
			96 assays	P-3068-96
H4K20	Tri-Methyl	Fluorometric	48 assays	P-3069-48
			96 assays	P-3069-96
H4K20	Pan-Methyl	Colorimetric	96 assays	P-3070-96
H4K20	Pan-Methyl	Fluorometric	96 assays	P-3071-96

Histone Acetyltransferase (HAT) Assays

EpiQuik™ HAT Activity/Inhibition Assay Kit

Histone acetyltransferases (HATs) play a critical role in transcriptional activation of gene expression in eukaryotic cells through modifying N-terminal lysine residues of histones by the addition of an acetyl group from acetyl coenzyme A. HAT activation or inhibition displays significant effects on several diseases ranging from neurodegenerative disorders to cancer. The impact of HATs on cellular physiology and disease would benefit from the identification of specific pharmacological inhibitors.

Epigentek's EpiQuik HAT Activity/Inhibition Assay Kit uses an innovative colorimetric assay method on a 96-well plate format to directly and accurately measure HAT activity/inhibition by quantifying the amount of acetylated histone substrate, thereby avoiding any false inhibitory effect on HATs. The entire procedure can be completed within 3 hours.

Product Name	Size	Cat. No.
EpiQuik HAT Activity/Inhibition Assay Kit	48 assays	P-4003-48
	96 assays	P-4003-96

Histone Deacetylase (HDAC) Assays

EpiQuik™ HDAC Activity/Inhibition Assay Kit

This microplate based kit directly measures HDAC activity/inhibition safely from mammalian cells/tissues, plants, or bacteria within just 3 hours. Available in both colorimetric and fluorometric versions.

Product Name	Size	Cat. No.
EpiQuik HDAC Activity/Inhibition Assay Kit (Colorimetric)	48 assays	P-4002-48
	96 assays	P-4002-96
EpiQuik HDAC Activity/Inhibition Assay Kit (Fluorometric)	48 assays	P-4001-48
	96 assays	P-4001-96

EpiQuik™ HDAC Assay Kits

Measure amounts of HDAC1, HDAC2, or HDAC8 in 3 hours.

Product Name	Size	Cat. No.
EpiQuik HDAC1 Assay Kit	24 assays	P-4005-24
	96 assays	P-4005-96
EpiQuik HDAC2 Assay Kit	24 assays	P-4006-24
	96 assays	P-4006-96
EpiQuik HDAC8 Assay Kit	24 assays	P-4007-24
	96 assays	P-4007-96

Histone Acetylation Quantification

EpiQuik™ Global Histone Acetylation Quantification Kits

Epigentek's ELISA-based histone acetylation quantification kits can globally measure total histone H3 or H4 acetylation levels in addition to acetylation levels of modified histones at various lysines.

- ✓ Quick and efficient procedure, finish within 2 to 3 hours.
- ✓ Innovative colorimetric or fluorometric versions without the need for radioactivity, electrophoresis, or chromatography.
- ✓ Excellent detection sensitivity of histone acetylation.
- ✓ Controls are conveniently included for the quantification of the amount of acetylated histones.
- ✓ Strip microplate format makes the assay flexible: manual or high throughput.

Histone	Detection Type	Size	Cat. No.
Total H3	Colorimetric	48 assays	P-4030-48
		96 assays	P-4030-96
Total H3	Fluorometric	48 assays	P-4031-48
		96 assays	P-4031-96
Total H4	Colorimetric	48 assays	P-4032-48
		96 assays	P-4032-96
Total H4	Fluorometric	48 assays	P-4033-48
		96 assays	P-4033-96
H3K9	Colorimetric	48 assays	P-4010-48
		96 assays	P-4010-96
H3K9	Fluorometric	48 assays	P-4011-48
		96 assays	P-4011-96
In Situ H3K9	Colorimetric	96 assays	P-4004-096
		2x96 assays	P-4004-192
H3K14	Colorimetric	48 assays	P-4012-48
		96 assays	P-4012-96

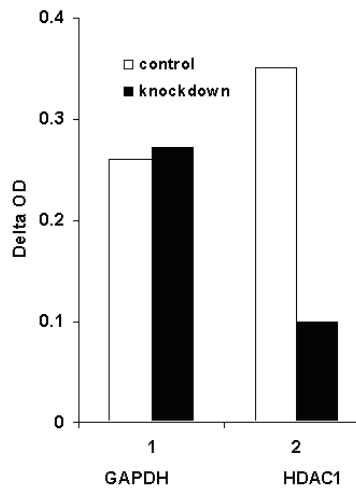
Histone	Detection Type	Size	Cat. No.
H3K14	Fluorometric	48 assays	P-4013-48
		96 assays	P-4013-96
H3K18	Colorimetric	48 assays	P-4014-48
		96 assays	P-4014-96
H3K18	Fluorometric	48 assays	P-4015-48
		96 assays	P-4015-96
H3K23	Colorimetric	48 assays	P-4016-48
		96 assays	P-4016-96
H3K23	Fluorometric	48 assays	P-4017-48
		96 assays	P-4017-96
H3K36	Colorimetric	48 assays	P-4018-48
		96 assays	P-4018-96
H3K36	Fluorometric	48 assays	P-4019-48
		96 assays	P-4019-96
H3K56	Colorimetric	48 assays	P-4020-48
		96 assays	P-4020-96
H3K56	Fluorometric	48 assays	P-4021-48
		96 assays	P-4021-96
H4K5	Colorimetric	48 assays	P-4022-48
		96 assays	P-4022-96
H4K5	Fluorometric	48 assays	P-4023-48
		96 assays	P-4023-96
H4K8	Colorimetric	48 assays	P-4024-48
		96 assays	P-4024-96
H4K8	Fluorometric	48 assays	P-4025-48
		96 assays	P-4025-96
H4K12	Colorimetric	48 assays	P-4028-48
		96 assays	P-4028-96
H4K12	Fluorometric	48 assays	P-4029-48
		96 assays	P-4029-96
H4K16	Colorimetric	48 assays	P-4026-48
		96 assays	P-4026-96
H4K16	Fluorometric	48 assays	P-4027-48
		96 assays	P-4027-96

General Gene Knockdown Quantification

QuantiSir™ General Gene Knockdown Quantification Kit

Targeted gene knockdown using small interfering RNA (siRNA) or antisense oligonucleotides has been a valuable technology for studying gene function. Gene knockdown leads to a reduction in miRNAs and subsequently protein expression. Our kit uses a unique procedure and composition to directly quantify gene knockdown effects at the protein level in various mammalian cell or tissue lysates. This kit provides a simple and rapid tool for measuring levels of gene expression/silencing.

The *QuantiSir™ General Gene Knockdown Quantification Kit* is part of Epigentek's advanced gene knockdown assay system to quantitate gene knockdown induced by siRNA or antisense oligonucleotide at the protein level in cultured cells or tissues. The ELISA-like kit offers a significantly more convenient process than traditional methods such as Northern blot, quantitative RT-PCR, and Western Blot. The kit addresses and corrects traditional problems such as the decrease in the amount of a specific mRNA not typically correlating well with protein levels present in the cell, and the lack of ability to discriminate between samples in which the differences in protein levels are minimal.



Quantification of HDAC1 knockdown. MCF-7 cells were treated or untreated with HDAC1 siRNA. Protein extracts were prepared and used for detection of HDAC1 protein level.

Product Name	Size	Cat. No.
QuantiSir General Gene Knockdown Quantification Kit	48 assays	P-5001-48
	96 assays	P-5001-96

Specific Gene Knockdown Quantification

QuantiSir™ Specific Gene Knockdown Quantification Kits

The *QuantiSir™ Gene Knockdown Quantification Kit* is also available specifically for 387 different genes in 8 different applications. Applications include:

- Epigenetic Regulators**
- DNA Damage/Repair**
- Cell Death/Apoptosis**
- Cell Cycle Regulation**
- Cell Proliferation**
- Tumor Suppressors/Oncogenes**
- Signal Transduction**
- Transcription Factors**

* For a complete list of available genes, please visit our website at www.epigentek.com. When ordering specific gene knockdown quantification kits, please specify which gene. The variable x in the catalog numbers for *QuantiSir Specific Gene Knockdown Quantification Kits* refers to the specific gene for the kit.

Product Name	Size	Cat. No.
QuantiSir Specific Gene Knockdown Quantification Kit for Epigenetic Regulators	96 assays	P-5002-x-96*
QuantiSir Specific Gene Knockdown Quantification Kit for DNA Damage/Repair	96 assays	P-5003-x-96*
QuantiSir Specific Gene Knockdown Quantification Kit for Cell Death/Apoptosis	96 assays	P-5004-x-96*
QuantiSir Specific Gene Knockdown Quantification Kit for Cell Cycle Regulation	96 assays	P-5005-x-96*
QuantiSir Specific Gene Knockdown Quantification Kit for Cell Proliferation	96 assays	P-5006-x-96*
QuantiSir Specific Gene Knockdown Quantification Kit for Tumor Suppressors/Oncogenes	96 assays	P-5007-x-96*
QuantiSir Specific Gene Knockdown Quantification Kit for Signal Transduction	96 assays	P-5008-x-96*
QuantiSir Specific Gene Knockdown Quantification Kit for Transcription Factors	96 assays	P-5009-x-96*

DNA Damage & Repair Assays

EpiQuik™ Superoxide Dismutase Activity/Inhibition Assay Kit

High throughput microplate format kit to colorimetrically measure superoxide dismutase (SOD) activity within 60 minutes.

Product Name	Size	Cat. No.
EpiQuik Superoxide Dismutase Activity/Inhibition Assay Kit	96 assays	OP-0001-1
	2x96 assays	OP-0001-2
	5x96 assays	OP-0001-3

EpiQuik™ In Situ DNA Damage Assay Kit

High throughput microplate format kit to colorimetrically measure DNA damage or apoptosis *in situ* through phospho H2AX^{Ser139} detection using cultured cells without the need to prepare cell lysates, all within 3 hours.

Product Name	Size	Cat. No.
EpiQuik In Situ DNA Damage Assay Kit	96 assays	P-6001-096
	2x96 assays	P-6001-192

CytoX-Red™ Cell Proliferation/Cytotoxicity Assay Kit

Measures cell viability, proliferation, and cytotoxicity in adherent or monolayer cells by quantifying total protein contents.

Product Name	Size	Cat. No.
CytoX-Red Cell Proliferation/Cytotoxicity Assay Kit	3x96 assays	OP-0004-1
	5x96 assays	OP-0004-2
	10x96 assays	OP-0004-3

CytoX-Violet™ Cell Proliferation/Cytotoxicity Assay Kit

Measures cell viability, proliferation, and cytotoxicity in adherent or suspension cells by measuring the activity of cellular dehydrogenases.

Product Name	Size	Cat. No.
CytoX-Violet Cell Proliferation/Cytotoxicity Assay Kit	5x96 assays	OP-0005-1
	10x96 assays	OP-0005-2
	20x96 assays	OP-0005-3

Sumoylation Assays

EpiQuik™ In Vivo Universal Protein Sumoylation Assay Kit

High throughput microplate format kit to colorimetrically measure *in vivo* protein sumoylation.

- ✓ Fast procedure, which can be finished within 5 hours.
- ✓ One-step colorimetric assay without the need for affinity chromatography or Western Blot.
- ✓ Flexible antibody choice allows the detection of sumoylation of multiple target proteins simultaneously.
- ✓ Included SUMO protein as the positive control allows protein sumoylation to be quantified reliably.
- ✓ Strip microplate format makes the assay flexible: manual or high throughput analysis.

Product Name	Size	Cat. No.
EpiQuik In Vivo Universal Protein Sumoylation Assay Kit	48 assays	P-8001-48
	96 assays	P-8001-96

EpiQuik™ In Vivo HDAC1 Sumoylation Assay Kit

High throughput microplate format kit to colorimetrically measure *in vivo* HDAC1 sumoylation from multiple mammalian cells or tissues, including from human, mouse, and rat.

- ✓ Fast procedure, which can be finished within 3 hours.
- ✓ One-step colorimetric assay without the need for affinity chromatography and Western Blot.
- ✓ Included SUMO protein as the positive control allows HDAC1 sumoylation to be quantified.
- ✓ Strip microplate format makes the assay flexible: manual or high throughput analysis.

Product Name	Size	Cat. No.
EpiQuik In Vivo HDAC1 Sumoylation Assay Kit	48 assays	P-8002-48
	96 assays	P-8002-96

DNA Preparation

FitAmp™ DNA Isolation Kit Series

Epigentek's series of DNA isolation kits can be used with many different sample sources, with emphasis on convenience, speed, and reliability. The kits are designed to work optimally with Epigentek's main assay kits that require DNA.

Product Name	Size	Cat. No.
FitAmp General Tissue Section DNA Isolation Kit	50 samples	P-1003-1
	100 samples	P-1003-2
FitAmp Plasma/Serum DNA Isolation Kit	50 samples	P-1004-1
	100 samples	P-1004-2
FitAmp Gel DNA Isolation Kit	50 samples	P-1007-1
	100 samples	P-1007-2
FitAmp Paraffin Tissue Section DNA Isolation Kit	50 samples	P-1009-1
	100 samples	P-1009-2
FitAmp Urine DNA Isolation Kit	50 samples	P-1017-050
	100 samples	P-1017-100
FitAmp Blood and Cultured Cell DNA Extraction Kit	50 samples	P-1018-050
	100 samples	P-1018-100

FitAmp™ DNA Quantification Kit Series

Epigentek's series of DNA quantification kits can be used for quantitatively measuring double stranded DNA or circulating DNA.

Product Name	Size	Cat. No.
FitAmp General DNA Quantification Kit	48 assays	P-1020-48
	96 assays	P-1020-48
FitAmp Circulating DNA Quantification Kit	48 assays	P-1012-1
	96 assays	P-1012-1

EpiQuik One Step DNA Hydrolysis Kit

Rapidly hydrolyze DNA to deoxynucleosides in a single incubation in as little as 1 hour using our proprietary enzymatic DNA digestion solution to DNA or oligonucleotides. After treatment with the DNA digestion buffer, DNA is easily digested into single nucleosides without phosphate groups.

Product Name	Size	Cat. No.
EpiQuik One-Step DNA Hydrolysis Kit	96 samples	P-1023-96

DNA Concentrator Kit

Efficiently concentrate DNA within just 2 minutes from various DNA samples with low concentration of DNA including those from microdissection samples, paraffin-embedded tissues, restriction enzyme digestions, PCR reactions, and home-made minipreps.

Product Name	Size	Cat. No.
DNA Concentrator Kit	50 samples	P-1006-1
	100 samples	P-1006-2

Methylamp™ Universal Methylated DNA Preparation Kit

Generate and purify up methylated DNA at CpG sites as a methylation-positive control from various sources including genomic DNA, plasmid DNA and oligonucleotides, for use in methylation studies.

Product Name	Size	Cat. No.
Methylamp Universal Methylated DNA Preparation Kit	40 µg	P-1019-1

TuMinute PCR Clean-Up Kit

Efficiently clean up PCR products from various sources including conventional or real time thermal cycling PCR and isothermal gene amplification (PCR) in just 2 minutes.

Product Name	Size	Cat. No.
TuMinute PCR Clean-Up Kit	50 samples	P-1005-1
	100 samples	P-1005-2

Methylamp PCR Enhancer

Enhances specificity and yield of PCR amplification including methylation-specific PCR amplification. Useful for enabling an amplification that had previously failed or for reducing problematic PCR artifacts by decreasing formation of secondary structures in the GC region,

Product Name	Size	Cat. No.
Methylamp PCR Enhancer	400 reactions	R-1002

Histone Protein Preparation

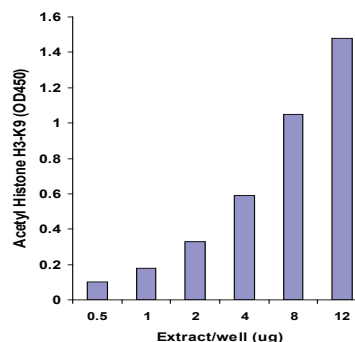
EpiQuik™ Total Histone Extraction Kit

This product is a complete set of reagents for extracting total core histones from mammalian cells or tissues in just 60 minutes. The post-translational modifications in the histone extracts are kept intact and thus can be used with Epigentek's histone modification assay kits or in a variety of downstream applications for histone acetylation, methylation, phosphorylation, and sumoylation.

This product allows for a minimal amount of starting material, as low as 10^5 cells or 1 mg of tissue. The yield of total histone proteins extracted with this product can be up to 400 μ g per standard extraction using 10^7 cells or 100 mg of tissue.

Features Include:

- ✓ Complete toolset containing all required reagents
- ✓ Pre-optimized and simple 1 hour protocol
- ✓ Standardized procedure for reproducible results
- ✓ Extracts a high yield of total core histones
- ✓ Post-translational modifications are kept intact



Histone extracts were prepared from MCF-7 cells using the EpiQuik Total Histone Extraction Kit and acetyl histone H3-K9 was quantified using the EpiQuik Global Acetylated Histone H3-K9 Quantification Kit (Fluorometric) (Cat #P-4011).

Product Name	Size	Cat. No.
EpiQuik Total Histone Extraction Kit	100 extractions	OP-0006-100

Nuclear Protein Preparation

EpiQuik™ Nuclear Extraction Kit

This product is a complete set of reagents for extracting nuclear proteins from mammalian cells or tissues in just 60 minutes. The extracts can be used with Epigentek's DNMT or HMT kits, or for a variety of applications including Western blots, protein-DNA binding assays, nuclear enzyme assays, and any procedure requiring optimized nuclear proteins.

Product Name	Size	Cat. No.
EpiQuik Nuclear Extraction Kit	100 extractions	OP-0002-1
EpiQuik Nuclear Extraction Kit II (Nucleic-Acid Free)	100 extractions	OP-0022-100

EpiQuik™ Whole Cell Extraction Kit

This product is a complete set of reagents for selectively extracting whole cell proteins from mammalian cells or tissues in just 45 minutes. The extracts can be used for a variety of applications including Western blots, cellular enzyme assays, and any procedure requiring optimized cellular proteins.

Product Name	Size	Cat. No.
EpiQuik Whole Cell Extraction Kit	100 extractions	OP-0003-100

Chromatin Preparation & Cleanup

Workflow Kits for ChromaFlash™ ChIP

1. Obtain chromatin samples with ChromaFlash Chromatin Extraction Kit or ChromaFlash Plant Chromatin Extraction Kit.
2. Shear chromatin with ChromaFlash Chromatin Shearing Kit or the EpiSonic Multifunctional Bioprocessor 1000.
3. Immunoprecipitate with ChromaFlash One-Step ChIP Kit.
4. Cleanup with ChromaFlash Chromatin Cleanup Kit.

Product Name	Size	Cat. No.
ChromaFlash Chromatin Extraction Kit	100 extractions	P-2001-96
ChromaFlash Plant Chromatin Extraction Kit	50 extractions	P-2022-050
ChromaFlash Chromatin Shearing Kit	50 preps	P-2023-050
ChromaFlash Chromatin Shearing HT Kit	96 preps	P-2024-96
ChromaFlash Chromatin Cleanup Kit	50 preps	P-2027-050

EpiSonic Multi-Functional Bioprocessor 1000



Features at a Glance:

- Fast processing
- High throughput capability
- No sample contamination
- Easy workflow integration
- Reproducible results
- Digital touchscreen
- Programmable memory
- Output amplitude controls
- Soundproofing enclosure

The EpiSonic™ Multi-Functional Bioprocessor 1000 is a next generation sonication device for use in a wide range of biological applications, including DNA and chromatin shearing for high throughput genome sequencing and next generation chromatin immunoprecipitation (ChIP). This completely digital instrument allows for rapid processing via 96- or 384-well microplates and can be easily integrated into existing lab workflows.

For DNA Shearing

High demand for massive parallel analysis of genetic and epigenetic alterations has driven the development of high-throughput sequencing technologies that parallelize the sequencing process, producing thousands or millions of sequences at once. An efficient, reliable method and device are needed to generate proper DNA fragments in a rapid and high throughput format in order to be compatible with high throughput sequencing. The EpiSonic 1000 provides optimal fragment size, excellent sample yield, consistency, speed, and high throughput capability — all of which are essential and compatible to massive parallel sequencing workflows including library construction.

For Chromatin Shearing

For a successful ChIP, it is crucial to prepare the optimized target protein bound-DNA fragment (200-700 bp) and to maximize binding of antibody to the target protein. Using the EpiSonic 1000 and the included ChIP protocol, chromatin can be sheared to an optimal size range (200-700 bp) within just 15 minutes.

For 1-Hour ChIP

To further accommodate next generation sequencing and microarrays, the EpiSonic™ 1000 can be combined with Epigentek's ChromaFlash™ One-Step ChIP kits for simultaneous processing of chromatin shearing and immunoprecipitation, which greatly propels the entire ChIP process — from chromatin to eluted DNA — to the fastest speeds (less than 1 hour) in a high throughput format with higher efficiency.

Description	EpiSonic 1000	Competitor D	Competitor C	Probe Sonication	Enzymatic Digestion
Allows for Desired Size Range of DNA	Yes	Yes	Yes	Yes	No
High Yields of Unbiased dsDNA	Yes	Yes	Yes	No	No
Prevents Risk of Contamination	Yes	Yes	Yes	No	N/A
Digital Readouts and Touchscreen Display	Yes	No	No	No	No
Protocols Programmable into Internal Memory	Yes	No	No	No	No
Small Sample Volume Permitted (<25 µl)	Yes	Yes	Yes	No	Yes
Fits Into Existing Lab Workflows	Yes	Yes	No	N/A	No
Number of Samples Per Run	1-384	1-48	1-96	1	N/A
Simplicity & Convenience	High	Acceptable	Acceptable	Low	Low
Reproducibility	High	N/A	Acceptable	Low	Low
Device Warranty	20 months	12 months	12 months	N/A	N/A

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