Volume 3.01

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DNA Preparation

DNA PREPARATION PRODUCTS

Catalog #	Description	Size
OP-0000-030	F-Spin Columns & Collection Tubes	30 count
OP-0000-040	F-Spin Columns & Collection Tubes	40 count
OP-0000-050	F-Spin Columns & Collection Tubes	50 count
OP-0000-100	F-Spin Columns & Collection Tubes	100 count
P-1003-1	FitAmp General Tissue Section DNA Isolation Kit	50 samples
P-1003-2	FitAmp General Tissue Section DNA Isolation Kit	100 samples
P-1004-1	FitAmp Plasma/Serum DNA Isolation Kit	50 samples
P-1004-2	FitAmp Plasma/Serum DNA Isolation Kit	100 samples
P-1005-1	TuMinute PCR Clean-Up Kit	50 samples
P-1005-2	TuMinute PCR Clean-Up Kit	100 samples
P-1006-1	DNA Concentrator KIt	50 samples
P-1006-2	DNA Concentrator Kit	100 samples
P-1007-1	FitAmp Gel DNA Isolation Kit	50 samples
P-1007-2	FitAmp Gel DNA Isolation Kit	100 samples
P-1009-1	FitAmp Paraffin Tissue Section DNA Isolation Kit	50 samples
P-1009-2	FitAmp Paraffin Tissue Section DNA Isolation Kit	100 samples
P-1012-1	FitAmp Circulating DNA Quantification Kit	48 samples
P-1012-2	FitAmp Circulating DNA Quantification Kit	96 samples
P-1017-050	FitAmp Urine DNA Isolation Kit	50 samples
P-1017-100	FitAmp Urine DNA Isolation Kit	100 samples
P-1018-050	FitAmp Blood & Cultured Cell DNA Extraction Kit	50 samples
P-1018-100	FitAmp Blood & Cultured Cell DNA Extraction Kit	100 samples
P-1019-1	Methylamp Universal Methylated DNA Preparation Kit	40 µg
P-1020-48	FitAmp General DNA Quantification Kit	48 samples
P-1020-96	FitAmp General DNA Quantification Kit	96 samples
R-1001-1	Nucleic Acid Isolation Enhancer	500 µl
R-1002-1	Methylamp PCR Enhancer	400 reactions

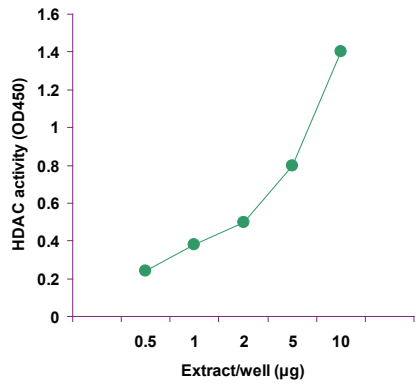
Protein Preparation

PROTEIN PREPARATION PRODUCTS

Catalog #	Description	Size
OP-0002-1	EpiQuik Nuclear Extraction Kit I	100 extracts
OP-0002-2	EpiQuik Nuclear Extraction Kit II	100 extracts
OP-0003-100	EpiQuik Whole Cell Extraction Kit	100 extracts
OP-0006-100	EpiQuik Total Histone Extraction Kit	100 extracts

Product Highlight

EpiQuik™ Nuclear Extraction Kit I



▲ Fig. 1. EpiQuik Nuclear Extraction Kit I

To demonstrate the quality of the materials and protocol of the EpiQuik Nuclear Extract Kit, nuclear extracts were prepared from MCF-7 cells and the activity of HDACs was measured using different amounts of the extract.The result shown in the figure above demonstrates the kit's high specificity.

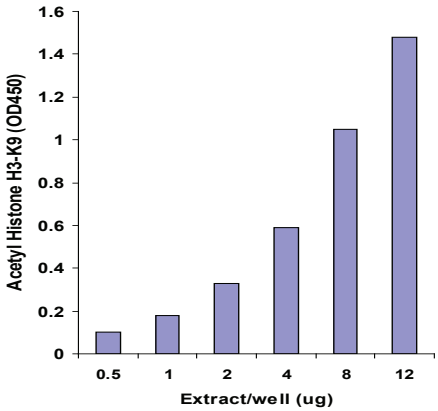
The *EpiQuik™ Nuclear Extraction Kit I* provides a simple and selective method for extracting nuclear proteins used for a variety of applications. These applications may include western blotting, protein-DNA binding assays, nuclear enzyme assays, and others requiring optimized nuclear proteins. The EpiQuik™ Nuclear Extraction Kit I is also specifically designed to meet the requirements of nuclear extracts used in various EpiQuik™ assays. The EpiQuik™ Nuclear Extraction Kit I can be used to extract nuclear proteins from mammalian cells and tissue samples. Fast 60 minute procedure.

Epigentek also offers EpiQuik Nuclear Extraction Kit II for nucleic acid-free nuclear extraction.

Product Highlight

EpiQuik™ Total Histone Extraction Kit

The EpiQuik™ Total Histone Extraction Kit provides a simple and selective method for extracting histone proteins used for a variety of applications which include histone modification such as acetylation, methylation and sumoylation. The kit is also specifically designed to meet the requirements of histone extracts used in EpiQuik™ assays. It can be used to extract histones from mammalian cells and tissues. The EpiQuik™ Total Histone Extraction Kit has the fastest procedure available on the current market allowing completion within 60 minutes. Yield of the total histone proteins is approximately 0.4 mg per 10^7 cells or 100 mg tissues.



▲ Fig. 2. EpiQuik Total Histone Extraction Kit

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

Bisulfite DNA Modification

Product Highlight

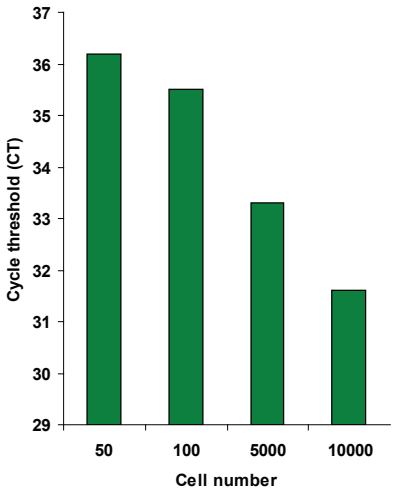
Methylamp™ Whole Cell Bisulfite Modification Kit

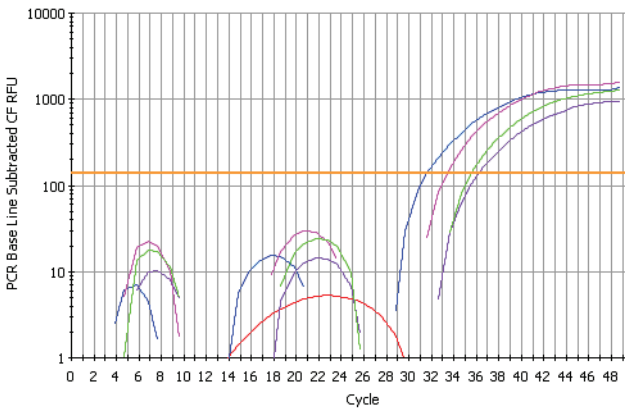
The Methylamp™ Whole Cell Bisulfite Modification Kit is an innovative and unique set of essential components which enables the experimenter to perform DNA methylation analysis and modify DNA directly from cells or tissues using Epigentek's uniquely simplified and streamlined bisulfite method. The kit allows DNA to be isolated from cells or tissues, denatured and bisulfite modified simultaneously in the same tube with the specific reaction buffer under thermodynamic conditions.

The entire procedure can be completed within just 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.

► Fig. 3. Methylamp Whole Cell Bisulfite Modification Kit

The different amounts of MCF-7 cells or DNA isolated from MCF-7 cells were modified using the Methylamp Whole Cell Bisulfite Modification Kit. 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 was used.





▲ Fig. 4. Methylamp Whole Cell Bisulfite Modification Kit
Real time PCR amplification of β-actin using modified DNA prepared from the Methylamp™ Whole Cell Bisulfite Modification Kit.

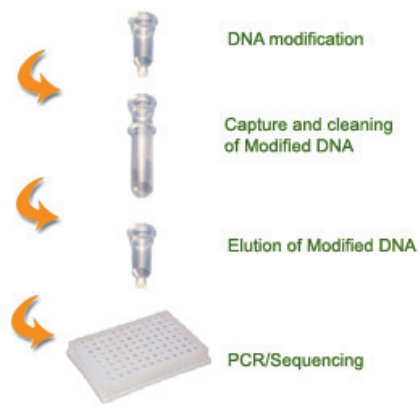
BISULFITE DNA MODIFICATION PRODUCTS

Catalog #	Description	Size
P-1001-1	Methylamp DNA Modification Kit	40 samples
P-1001-2	Methylamp DNA Modification Kit	80 samples
P-1002-40	Methylamp Coupled DNA Isolation & Modification Kit	40 samples
P-1008-1	Methylamp 96 DNA Modification Kit	96 samples
P-1008-2	Methylamp 96 DNA Modification Kit	192 samples
P-1010-1	Methylamp One-Step DNA Modification Kit	40 samples
P-1010-2	Methylamp One-Step DNA Modification Kit	80 samples
P-1011-1	Methylamp Universal Methylated DNA Kit	10 modific.
P-1011-2	Methylamp Universal Methylated DNA Kit	20 modific.
P-1016-40	Methylamp Whole Cell Bisulfite Modification Kit	40 samples
P-1016-80	Methylamp Whole Cell Bisulfite Modification Kit	80 samples

Product Highlight

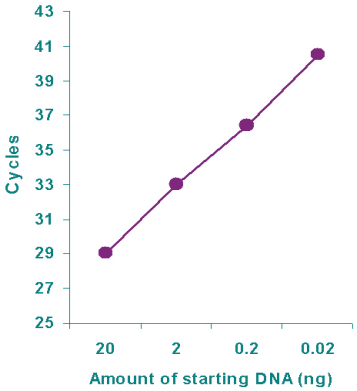
Methylamp™ DNA Modification Kit

The Methylamp™ DNA Modification Kit is a complete set of essential components which enables the experimenter to perform DNA methylation analysis using Epigentek's uniquely simplified and streamlined bisulfite method. The entire procedure can be completed within a mere 1 hour and 55 minutes and produces far superior results than any competitor kits. DNA is chemically denatured to allow bisulfite reagent to react specifically with single-stranded DNA, thereby deaminating cytosine and creating a uracil residue. The Methylamp™ DNA Modification Kit is suitable for MS-PCR, real time MS-PCR, methylation sequencing, and pyrosequencing, as well as methylation microarray.



► Fig. 5. Methylamp DNA Modification Kit

The different amounts of DNA isolated from a serum sample were chemically modified using the Methylamp DNA Modification Kit. Real time PCR was performed by using a pair of primers and a probe designed to amplify both methylated and unmethylated alleles of β-actin.

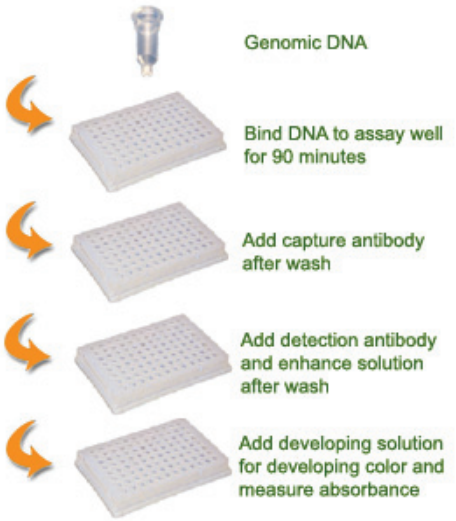


DNA Methylation Quantification

Best Seller!

Methylamp™ Global DNA Methylation Quantification Ultra Kit

The Methylamp™ Global DNA Methylation Quantification Ultra Kit is an improved version of the popular Methylamp™ Global DNA Methylation Quantification Kit. As a complete set of essential components, the kit enables the experimenter to quantify global DNA methylation through an ELISA-like reaction using Epigentek's uniquely simplified and streamlined procedure. The entire procedure can be completed in less than 4 hours in either manual or high throughput analysis. In addition to having a shorter procedure, the improved kit also has higher sensitivity than its predecessor. It is suitable for detecting global DNA methylation status using genomic DNA isolated from a variety of cultured cells, fresh and frozen tissue, paraffin-embedded tissue, plasma/serum sample, and body fluid sample, etc. The universal positive control included in the kit allows for quantitation of methylated DNA from any species.



▲ Schematic Procedure of Methylamp Global DNA Methylation Quantification Ultra Kit.

DNA METHYLATION QUANTIFICATION PRODUCTS

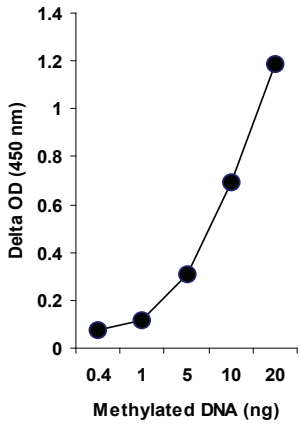
Catalog #	Description	Size
P-1014-48	Methylamp Global DNA Methylation Quantification Kit	48 assays
P-1014-96	Methylamp Global DNA Methylation Quantification Kit	96 assays
P-1014B-48	**Methylamp Global DNA Methylation Quantification Ultra Kit**	48 assays
P-1014B-96	**Methylamp Global DNA Methylation Quantification Ultra Kit**	96 assays
P-3021-48	EpiQuik MBD2 Binding Activity & Inhibition Assay Kit	48 assays
P-3021-96	EpiQuik MBD2 Binding Activity & Inhibition Assay Kit	96 assays

PRINCIPLE AND PROCEDURE

The Methylamp Global DNA Methylation Quantification Ultra Kit utilizes an ELISA-based method that simplifies the measurement of global DNA methylation and provides results in just a few hours in a high throughput format. The unique method efficiently distinguishes between methylated and unmethylated DNA. In an assay using this kit, DNA is immobilized to the strip well specifically coated with a DNA affinity substance. The methylated fraction of DNA can be recognized by 5-methylcytosine antibody and quantified through an ELISA-like reaction. The amount of methylated DNA is proportional to the OD intensity.

WHY CHOOSE THIS KIT?

- ☑ Very fast procedure which can be completed in just under 4 hours
- ☑ Colorimetric quantification without radioactivity, extraction, or chromatography
- ☑ Strip microplate format allows for manual or high throughput analysis
- ☑ Excellent sensitivity with detection limitation as low as 0.2 ng of methylated DNA
- ☑ Universal positive control suitable for measuring methylated DNA from any species



◄ **Fig. 6. Methylamp Global DNA Methylation Quantification Ultra Kit**

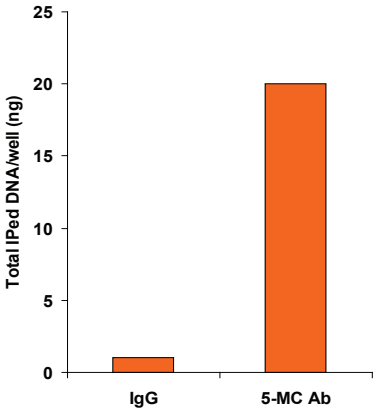
Quantification of methylated DNA using the Epigentek kit.

Methylated DNA Immunoprecipitation

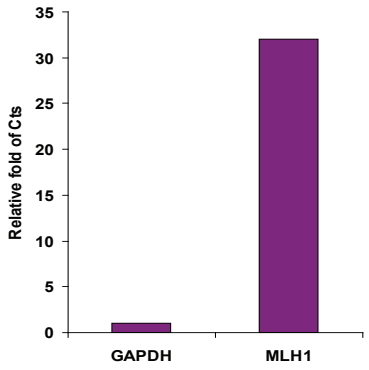
Product Highlight

Methylamp™ Methylated DNA Capture Kit

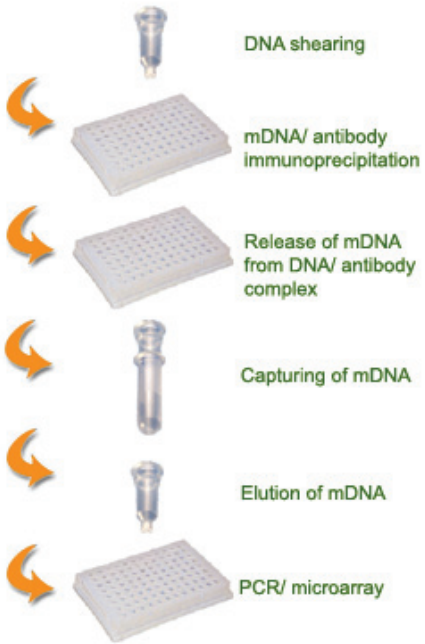
The Methylamp™ Methylated DNA Capture Kit is a complete set of essential components which enables the experimenter to use a unique, proprietary procedure and composition to enrich methylated DNA from purified DNA. In the assay, an antibody specific to methyl cytosine is used to capture methylated genomic DNA. The enriched methylated fractions can then be used for standard DNA detection. The entire procedure can be completed within just 3 hours. The Methylamp™ Methylated DNA Capture Kit is suitable for combining the specificity of enriched methylated DNA with qualitative and quantitative PCR, and southern blot as well as DNA microarray.



▲ **Fig 7.** For enrichment of methylated DNA using the kit, DNA (0.5 ug) isolated from MCF-7 cells was added into the microwell. Methylated DNA was captured by 5-mC antibody pre-bound to the microwells.



▲ **Fig 8.** Captured methylated DNA was used for analyzing methylation levels of GAPDH and MLH1 promoter with the use of primers and probes specific to GAPDH and MLH1promoters, respectively.



▲ Schematic Procedure of Methylamp Methylated DNA Capture Kit.

PRINCIPLE AND PROCEDURE

The Methylamp™ Methylated DNA Capture Kit contains all 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 microwell and 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.

Product Highlight

EpiQuik Methylated DNA Immunoprecipitation (MeDIP) Kit

The EpiQuik™ Methylated DNA Immunoprecipitation (MeDIP) Kit is a complete set of essential components which uses a unique, proprietary procedure and composition to enrich methylated DNA from cells (nuclear extract). In the 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.

Epigentek also offers a version of this kit for directly immunoprecipitating methylated fractions of DNA from tissue lysates (EpiQuik Tissue Methylated DNA Immunoprecipitation Kit, Cat #P-2020).

METHYLATED DNA IMMUNOPRECIPITATION PRODUCTS

Catalog #	Description	Size
P-1015-24	Methylamp Methylated DNA Capture Kit	24 reactions
P-1015-48	Methylamp Methylated DNA Capture Kit	48 reactions
P-2019-24	EpiQuik Methylated DNA Immunoprecipitation Kit	24 reactions
P-2019-48	EpiQuik Methylated DNA Immunoprecipitation Kit	48 reactions
P-2020-24	EpiQuik Tissue Methylated DNA Immunoprecipitation Kit	24 reactions
P-2020-48	EpiQuik Tissue Methylated DNA Immunoprecipitation Kit	48 reactions

DNA Methyltransferase Assay

Product Highlight

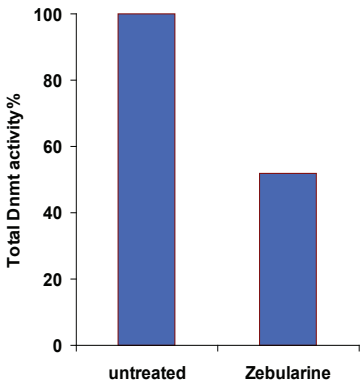
EpiQuik™ DNA Methyltransferase Activity/Inhibition Assay Kit

The EpiQuik™ DNA Methyltransferase Activity/Inhibition Assay Kit is a convenient set of tools that allows the experimenter to measure Dnmt activity or inhibition at tremendously fast speeds and consistency, superior and safer than all other current methods. 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. The EpiQuik™ DNA Methyltransferase (Dnmt) Activity/Inhibition Assay Kit is suitable for measuring Dnmt activity/inhibition from a broad range of species including mammalian or plant cells/tissues or bacteria.

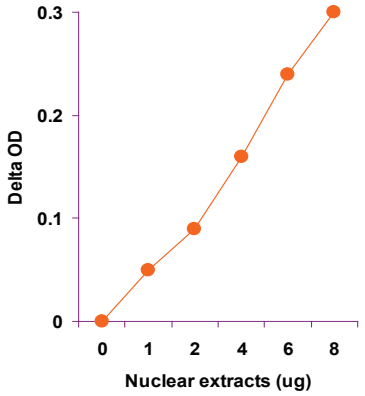
PRINCIPLE AND PROCEDURE

The EpiQuik™ DNA Methyltransferase Activity/Inhibition Assay Kit is designed for measuring total Dnmt activity (de novo, maintenance). In an assay with this kit, the unique cytosine-rich DNA substrate is stably coated on the strip wells. These wells are specifically treated to have a high DNA absorption ability. Dnmt enzymes transfer a methyl group to cytosine from Adomet to methylate the DNA substrate. The methylated DNA can be recognized with anti-5-methylcytosine antibody. The ratio or amount of methylated DNA, which is proportional to enzyme activity, is then colorimetrically quantified through an ELISA-like reaction.

▲ Schematic Procedure of EpiQuik DNA Methyltransferase Activity/Inhibition Assay Kit.



▲ **Fig. 9.** HSC-3 cells were incubated with and without zebularine (220 uM) for 48 h. Nuclear proteins were extracted and total Dnmt activity was measured using the Epigentek kit.



▲ **Fig. 10.** Nuclear extracts were prepared from MCF-7 cells and total Dnmt activity was measured using the Epigentek kit.

WHY CHOOSE THIS KIT?

☑ Very rapid procedure, which can be completed within 3 hours.

☑ Safe and innovative colorimetric assay without radioactivity, extraction, or chromatography.

☑ Strip microplate format makes the assay flexible: manual or high throughput analysis.

☑ Extremely simple, reliable, and consistent assay conditions.

***EpiQuik Nuclear Extraction Kit I** [#OP-0002-1] is recommended for optimized protein preparation use with this kit.*

DNA METHYLTRANSFERASE PRODUCTS

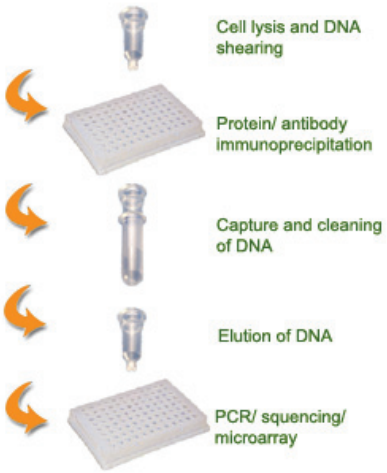
Catalog #	Description	Size
P-3001-1	EpiQuik DNA Methyltransferase Activity/ Inhibition Assay Kit	48 assays
P-3001-2	EpiQuik DNA Methyltransferase Activity/ Inhibition Assay Kit	96 assays
P-3006-48	EpiQuik DNA Methyltransferase 1 Activity/ Inhibitor Screening Assay Kit	48 assays
P-3006-96	EpiQuik DNA Methyltransferase 1 Activity/ Inhibitor Screening Assay Kit	96 assays
P-3007-48	EpiQuik DNA Methyltransferase 3B Activity/ Inhibitor Screening Assay Kit	48 assays
P-3007-96	EpiQuik DNA Methyltransferase 3B Activity/g Inhibitor Screening Assay Kit	96 assays
P-3011-1	EpiQuik DNMT1 Assay Kit	24 assays
P-3011-2	EpiQuik DNMT1 Assay Kit	48 assays
P-3011-3	EpiQuik DNMT1 Assay Kit	96 assays

Catalog #	Description	Size
P-3012-1	EpiQuik DNMT3A Assay Kit	24 assays
P-3012-2	EpiQuik DNMT3A Assay Kit	48 assays
P-3012-3	EpiQuik DNMT3A Assay Kit	96 assays
P-3013-1	EpiQuik DNMT3B Assay Kit	24 assays
P-3013-2	EpiQuik DNMT3B Assay Kit	48 assays
P-3013-3	EpiQuik DNMT3B Assay Kit	96 assays
P-3019-48	EpiQuik DNA Demethylase Activity/Inhibition Assay Kit	48 assays
P-3019-96	EpiQuik DNA Demethylase Activity/Inhibition Assay Kit	96 assays
P-3021-48	EpiQuik MBD2 Binding Activity/Inhibition Assay Kit	48 assays
P-3021-96	EpiQuik MBD2 Binding Activity/Inhibition Assay Kit	96 assays

General Chromatin IP

Product Highlight

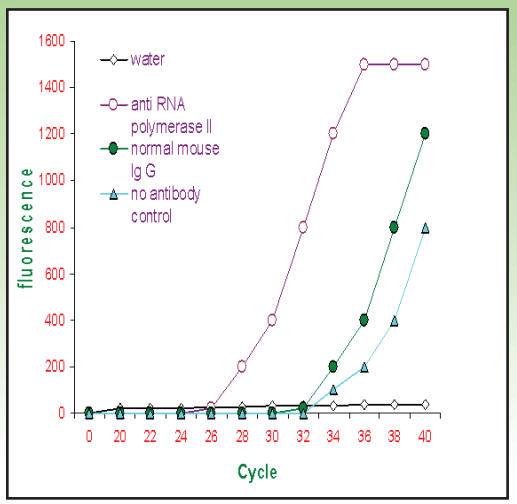
EpiQuik™ Chromatin Immunoprecipitation Kit



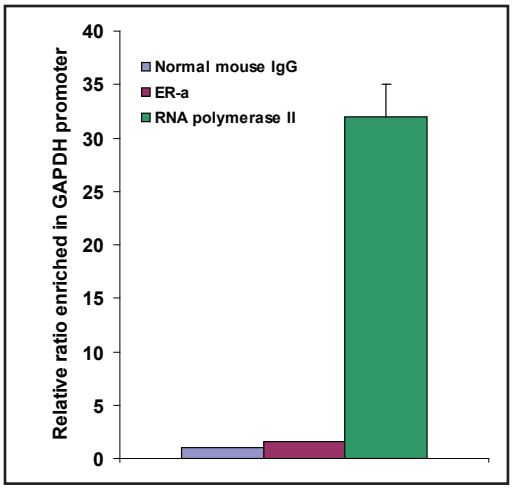
The EpiQuik™ Chromatin Immunoprecipitation (ChIP) Kit is a convenient package of tools that allows the experimenter to perform chromatin immunoprecipitation (ChIP) at extraordinarily rapid speeds and consistency, superior to all other current ChIP methods available. The kit is ready-to-use and provides all the essential components needed to carry out a successful ChIP experiment. The EpiQuik™ ChIP kits are suitable for combining the specificity of immunoprecipitation with qualitative and quantitative PCR, MS-PCR, DNA sequencing, and southern blot as well as DNA microarray.

GENERAL CHROMATIN IP PRODUCTS

Catalog #	Description	Size
P-2002-1	EpiQuik Chromatin Immunoprecipitation Kit	24 reactions
P-2002-2	EpiQuik Chromatin Immunoprecipitation Kit	48 reactions
P-2002-3	EpiQuik Chromatin Immunoprecipitation Kit	96 reactions
P-2003-1	EpiQuik Tissue ChIP Kit	24 reactions
P-2003-2	EpiQuik Tissue ChIP Kit	48 reactions
P-2003-3	EpiQuik Tissue ChIP Kit	96 reactions
P-2014-24	EpiQuik Plant ChIP Kit	24 reactions
P-2014-48	EpiQuik Plant ChIP Kit	48 reactions



▲ **Fig. 11. EpiQuik Chromatin Immunoprecipitation Kit**
Anti-RNA polymerase II antibody was used to immunoprecipitate cross-linked DNA-RNA polymerase II. Normal mouse IgG was used as a negative control. The precipitated DNA is subjected to a real time quantitative PCR using primers specific to the GAPDH promoter.

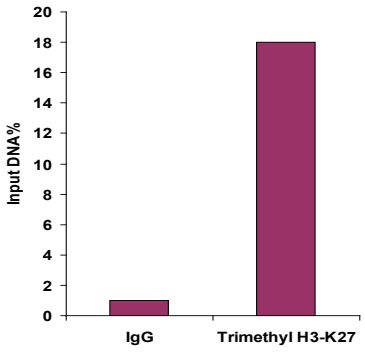


▲ **Fig. 12. EpiQuik Tissue ChIP Kit (for mammalian tissues)**
Analysis of enrichment of RNA polymerase II (RPII) and ERα in GAPDH promoter by microwell-based ChIP. Nuclear extract prepared from formaldehyde fixed colon tissues (1 mg/each reaction) was added into the microwell. RPII protein- and ERα protein-DNA complexes were captured by affinity antibodies pre-bound to the microwells. Captured DNA was used for analyzing levels of RPII and ERα enriched in the GAPDH promoter with the use of primers and probes specific to GAPDH promoter.

Product Highlight

EpiQuik™ Plant ChIP Kit

The EpiQuik™ Plant ChIP Kit is a convenient set of tools that allows the experimenter to investigate protein-DNA interaction in vivo efficiently. The entire procedure can be completed within 6 hours and produces far superior results than any competitor kits. The EpiQuik™ Plant ChIP kit is suitable for combining the specificity of immunoprecipitation with qualitative and quantitative PCR, MS-PCR, DNA sequencing, and southern blot as well as DNA microarray.



◄ **Fig. 13. EpiQuik Plant ChIP Kit**

DNA was immunoprecipitated from 2-week-old icu2-1/icu2-1 seedlings PCR was used to amplify the ORNITHINE TRANSCARBAMILASE (OTC) gene and regions of the AGAMOUS gene.

In Vitro Protein-DNA Interaction

SCIENTIFIC BACKGROUND

Protein-DNA interaction plays a critical role for cellular functions such as signal transduction, gene transcription, chromosome segregation, DNA replication and recombination, and epigenetic silencing. Identifying the genetic targets of DNA binding proteins and knowing the mechanisms of protein-DNA interaction is important for understanding cellular process. Measurement of direct interactions between protein and DNA in vitro is advantageous for analyzing the binding of different transcription factors to specific DNA consensus sequences located in the gene promoters.

IN VITRO PROTEIN-DNA INTERACTION PRODUCTS

Catalog #	Description	Size
P-2004-96	EpiQuik General Protein-DNA Binding Assay Kit (Colorimetric)	96 assays
P-2005-96	EpiQuik General Protein-DNA Binding Assay Kit (Fluorometric)	96 assays

Methyl-Histone Chromatin IP

SCIENTIFIC BACKGROUND

It is well demonstrated that switching acetylation to methylation on H3-K9 and H3-K27 leads to chromatin gene silencing in many organisms. Identification of genes silenced through H3-K9 and H3-K27 methylation is of particular significance for understanding and analyzing biological process under the normal and pathological conditions.

ChIP offers an advantageous tool that allows identification of silenced or activated genes associated with methylated histone H3-K4, H3-K9, or H3-K27. ChIP coupled with microarrays could be used for profiling or mapping these histone methylation patterns.

METHYL-HISTONE CHROMATIN IP PRODUCTS

Catalog #	Description	Size
P-2006-24	EpiQuik Methyl-Histone H3-K9 ChIP Kit	24 reactions
P-2006-48	EpiQuik Methyl-Histone H3-K9 ChIP Kit	48 reactions
P-2006T-24	EpiQuik Tri-Methyl-Histone H3-K9 ChIP Kit	24 reactions
P-2006T-48	EpiQuik Tri-Methyl-Histone H3-K9 ChIP Kit	48 reactions
P-2007-24	EpiQuik Methyl-Histone H3-K4 ChIP Kit	24 reactions
P-2007-48	EpiQuik Methyl-Histone H3-K4 ChIP Kit	48 reactions
P-2008-24	EpiQuik Tissue Methyl-Histone H3-K9 ChIP Kit	24 reactions
P-2008-48	EpiQuik Tissue Methyl-Histone H3-K9 ChIP Kit	48 reactions
P-2009-24	EpiQuik Tissue Methyl-Histone H3-K4 ChIP Kit	24 reactions
P-2009-48	EpiQuik Tissue Methyl-Histone H3-K4 ChIP Kit	48 reactions
P-2015-24	EpiQuik Methyl-Histone H3-K27 ChIP Kit	24 reactions
P-2015-48	EpiQuik Methyl-Histone H3-K27 ChIP Kit	48 reactions
P-2016-24	EpiQuik Tissue Methyl-Histone H3-K27 ChIP Kit	24 reactions
P-2016-48	EpiQuik Tissue Methyl-Histone H3-K27 ChIP Kit	48 reactions

Acetyl-Histone Chromatin IP

SCIENTIFIC BACKGROUND

Histone H3 and H4 acetylation has been demonstrated to be an epigenetic marker of chromosomal domains. Histone H3 and H4 acetylation regulates various cellular physiological processes, including transcriptional activation of genes, chromatin assembly, cell proliferation, and some pathological processes such as tumorigenesis.

ChIP offers an advantageous tool that allows identification of activated genes associated with acetylated histone H3 or H4. ChIP coupled with microarrays could be further used for profiling or mapping histone H3 or H4 acetylation patterns.

ACETYL-HISTONE CHROMATIN IP PRODUCTS

Catalog #	Description	Size
P-2010-24	EpiQuik Acetyl-Histone H3 ChIP Kit	24 reactions
P-2010-48	EpiQuik Acetyl-Histone H3 ChIP Kit	48 reactions
P-2011-24	EpiQuik Acetyl-Histone H4 ChIP Kit	24 reactions
P-2011-48	EpiQuik Acetyl-Histone H4 ChIP Kit	48 reactions
P-2012-24	EpiQuik Tissue Acetyl-Histone H3 ChIP Kit	24 reactions
P-2012-48	EpiQuik Tissue Acetyl-Histone H3 ChIP Kit	48 reactions
P-2013-24	EpiQuik Tissue Acetyl-Histone H4 ChIP Kit	24 reactions
P-2013-48	EpiQuik Tissue Acetyl-Histone H4 ChIP Kit	48 reactions

Methyl-DNA Binding Protein ChIP

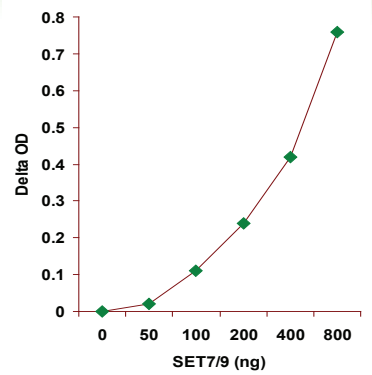
SCIENTIFIC BACKGROUND

MBD2 has been demonstrated to be associated with tumorigenesis. For example, deficiency of MBD2 suppresses intestinal tumor formation, indicating that MBD2 is necessary not only for tumor development but also for tumor growth. The in vivo binding of MBD2 to the methylated CpG region of the gene promoters may be affected by MBD2 mutation and by biochemical or pharmacological intervention. ChIP offers an advantageous tool that allows identification of silenced genes associated with MBD2. ChIP coupled with microarrays could be further used for profiling or mapping MBD2 binding patterns.

METHYL-DNA BINDING PROTEIN CHIP PRODUCTS

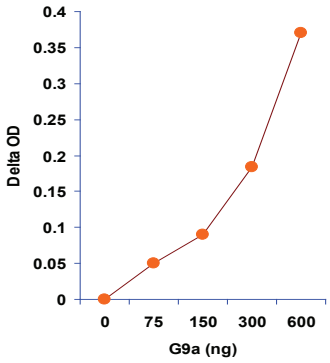
Catalog #	Description	Size
P-2017-24	EpiQuik Methyl-CpG Binding Domain Protein 2 ChIP Kit	24 reactions
P-2017-48	EpiQuik Methyl-CpG Binding Domain Protein 2 ChIP Kit	48 reactions
P-2018-24	EpiQuik Tissue Methyl-CpG Binding Domain Protein 2 ChIP Kit	24 reactions
P-2018-48	EpiQuik Tissue Methyl-CpG Binding Domain Protein 2 ChIP Kit	48 reactions

Histone Methyltransferase Assay



◄ **Fig. 14. EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K4) [#P-3002]**

Nuclear extracts were prepared from MCF-7 cells using *EpiQuik Nuclear Extraction Kit* (#OP-0002-1) and H3-K4 specific histone methyltransferase (SET7/9) was measured.

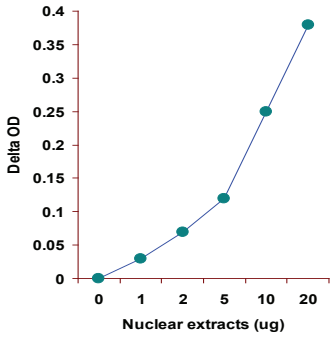


► **Fig. 15. EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K9) [#P-3003]**

Nuclear extracts were prepared from MCF-7 cells using *EpiQuik Nuclear Extraction Kit* (#OP-0002-1) and H3-K9 specific histone methyltransferase (G9a) was measured.

HISTONE METHYLTRANSFERASE PRODUCTS

Catalog #	Description	Size
P-3002-1	EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K4)	48 assays
P-3002-2	EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K4)	96 assays
P-3003-1	EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K9)	48 assays
P-3003-2	EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K9)	96 assays
P-3005-48	EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K27)	48 assays
P-3005-96	EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K27)	96 assays



► **Fig. 16. EpiQuik Histone Methyltransferase Activity & Inhibition Assay Kit (H3-K27) [#P-3005]**

Nuclear extracts were prepared from MCF-7 cells using *EpiQuik Nuclear Extraction Kit* (#OP-0002-1) and H3-K27 specific histone methyltransferases were measured.

Histone Demethylase Assay

SCIENTIFIC BACKGROUND

H3-K4 histone demethylase can remove di- and mono-methylation from H3-K4. H3-K4 demethylases are involved in certain pathological processes such as cancer progress. Inhibition of the enzymes may lead to re-methylation of H3-K4 and silencing of H3-K4 enriched active genes.

HISTONE DEMETHYLASE PRODUCTS

Catalog #	Description	Size
P-3074-48	EpiQuik Histone Demethylase (H3-K4 Specific) Activity & Inhibition Assay Kit	48 assays
P-3074-96	EpiQuik Histone Demethylase (H3-K4 Specific) Activity & Inhibition Assay Kit	96 assays
P-3075-48	EpiQuik Histone Demethylase LSD1 Inhibitor Screening Assay Kit	48 assays
P-3075-96	EpiQuik Histone Demethylase LSD1 Inhibitor Screening Assay Kit	96 assays
P-3076-48	EpiQuik Histone Demethylase LSD1 Activity & Inhibition Assay Kit	48 assays
P-3076-96	EpiQuik Histone Demethylase LSD1 Activity & Inhibition Assay Kit	96 assays
P-3077-48	EpiQuik Histone Demethylase (H3-K9 Specific) Activity/Inhibition Fast Asasy Kit	48 assays
P-3077-96	EpiQuik Histone Demethylase (H3-K9 Specific) Activity/Inhibition Fast Asasy Kit	96 assays

Product Highlight

EpiQuik™ Histone Demethylase (H3-K4 Specific) Activity & Inhibition Assay Kit

The EpiQuik™ Histone Demethylase (H3-K4 Specific) Activity/Inhibition Assay Kit is a convenient set of tools that allows the experimenter to measure activity/inhibition of H3-K4 specific histone demethylases using cell or tissue extracts. The kit is ready-to-use and provides all the essential components needed for measuring histone demethylase (H3-K4 Specific) activity/inhibition from a broad range of species including mammalian or plant cells/tissues or bacteria.

PRINCIPLE & PROCEDURE

The EpiQuik™ Histone Demethylase (H3-K4 specific) Activity/Inhibition Assay Kit is designed for measuring total histone demethylase (H3-K4 Specific) activity/inhibition. In the assay with this kit, the unique di-methylated histone H3-K4 substrate is stably captured on the strip wells. Active HDMs bind to and demethylate histone H3-K4 substrate. The remaining un-demethylated substrate can be recognized with high affinity anti-methylated histone H3-K4 antibody. The ratio or amount of the un-demethylated histone, which is inversely proportional to HDM enzyme activity, can then be fluorometrically quantified.

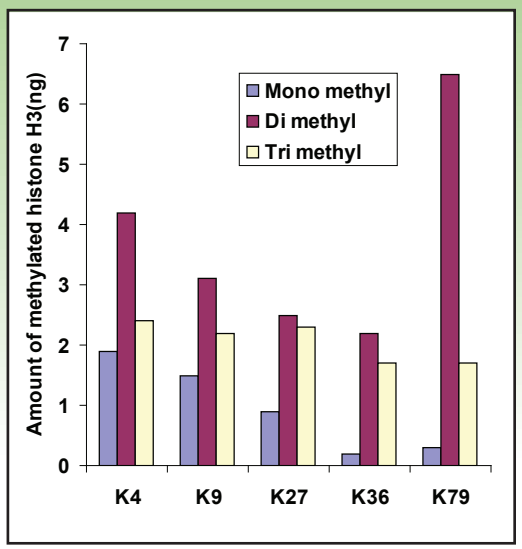
Histone Methylation Quantification

SCIENTIFIC BACKGROUND

Histone H3 methylation at lysine or arginine sites is a widespread histone modification and is associated with transcriptionally active or repressed genes. Histone H3 methylation is catalyzed by histone methyltransferases (HMTs) that transfer 1-3 methyl groups from S-adenosyl-L-methionine to the lysine and arginine residues of histone proteins. Increased or decreased global histone H3 methylation is also found to be involved in numerous pathological processes such as cancer and autoimmune diseases. The global histone H3 methylation can also be changed by inhibiton or activation of HMTs.

Thus quantitative detection of global methylation of histone H3 at lysine and arginine residues would provide useful information for better understanding epigenetic regulation of gene activation or silencing and for developing HMT-targeted drugs.

Epigentek provides assay kits for detecting all histone H3 methylation patterns including mono-, di-, and tri- methylation changes at H3-K4, H3-K9, H3-K27, H3-K36 and H3-K79.



▲ Fig. 17. Histone Methylation Quantification Kits
Histone extracts were prepared from MDA-231 breast cancer cells using the EpiQuik Total Histone Extraction Kit (Cat #OP-0006) and histone H3 mono-, di-, and tri-methylation at different sites was quantified with EpiQuik Histone H3 Methylation Quantification kit series (fluorometric).

HISTONE METHYLATION QUANTIFICATION PRODUCTS

Catalog #	Description	Size
P-3014T-096	EpiQuik *In Situ* Histone H3-K27 Tri-Methylation Assay Kit	96 assays
P-3014T-192	EpiQuik *In Situ* Histone H3-K27 Tri-Methylation Assay Kit	2x96 assays
P-3015-096	EpiQuik *In Situ* Histone H3-K4 Methylation Assay Kit	96 assays
P-3015-192	EpiQuik *In Situ* Histone H3-K4 Methylation Assay Kit	2x96 assays
P-3016-096	EpiQuik *In Situ* Histone H3-K9 Methylation Assay Kit	96 assays
P-3016-192	EpiQuik *In Situ* Histone H3-K9 Methylation Assay Kit	2x96 assays
P-3017-48	EpiQuik Global Histone H3-K4 Methylation Assay Kit	48 assays
P-3017-96	EpiQuik Global Histone H3-K4 Methylation Assay Kit	96 assays
P-3018-48	EpiQuik Global Histone H3-K9 Methylation Assay Kit	48 assays
P-3018-96	EpiQuik Global Histone H3-K9 Methylation Assay Kit	96 assays
P-3020-48	EpiQuik Global Histone H3-K27 Methylation Assay Kit	48 assays
P-3020-96	EpiQuik Global Histone H3-K27 Methylation Assay Kit	96 assays
P-3020T-48	EpiQuik Global Histone H3-K27 Tri-Methylation Assay Kit	48 assays
P-3020T-96	EpiQuik Global Histone H3-K27 Tri-Methylation Assay Kit	96 assays
P-3022-48	EpiQuik Global Di-Methyl Histone H3-K4 Quantification Kit (Colorimetric)	48 assays
P-3022-96	EpiQuik Global Di-Methyl Histone H3-K4 Quantification Kit (Colorimetric)	96 assays
P-3023-48	EpiQuik Global Di-Methyl Histone H3-K4 Quantification Kit (Fluorometric)	48 assays
P-3023-96	EpiQuik Global Di-Methyl Histone H3-K4 Quantification Kit (Fluorometric)	96 assays
P-3024-48	EpiQuik Global Mono-Methyl Histone H3-K4 Quantification Kit (Colorimetric)	48 assays
P-3024-96	EpiQuik Global Mono-Methyl Histone H3-K4 Quantification Kit (Colorimetric)	96 assays
P-3025-48	EpiQuik Global Mono-Methyl Histone H3-K4 Quantification Kit (Fluorometric)	48 assays
P-3025-96	EpiQuik Global Mono-Methyl Histone H3-K4 Quantification Kit (Fluorometric)	96 assays
P-3026-48	EpiQuik Global Tri-Methyl Histone H3-K4 Quantification Kit (Colorimetric)	48 assays
P-3026-96	EpiQuik Global Tri-Methyl Histone H3-K4 Quantification Kit (Colorimetric)	96 assays
P-3027-48	EpiQuik Global Tri-Methyl Histone H3-K4 Quantification Kit (Fluorometric)	48 assays
P-3027-96	EpiQuik Global Tri-Methyl Histone H3-K4 Quantification Kit (Fluorometric)	96 assays
P-3028-96	EpiQuik Global Pan-Methyl Histone H3-K4 Quantification Kit (Colorimetric)	96 assays
P-3029-96	EpiQuik Global Pan-Methyl Histone H3-K4 Quantification Kit (Fluorometric)	96 assays
P-3030-48	EpiQuik Global Mono-Methyl Histone H3-K9 Quantification Kit (Colorimetric)	48 assays
P-3030-96	EpiQuik Global Mono-Methyl Histone H3-K9 Quantification Kit (Colorimetric)	96 assays
P-3031-48	EpiQuik Global Mono-Methyl Histone H3-K9 Quantification Kit (Fluorometric)	48 assays
P-3031-96	EpiQuik Global Mono-Methyl Histone H3-K9 Quantification Kit (Fluorometric)	96 assays
P-3032-48	EpiQuik Global Di-Methyl Histone H3-K9 Quantification Kit (Colorimetric)	48 assays
P-3032-96	EpiQuik Global Di-Methyl Histone H3-K9 Quantification Kit (Colorimetric)	96 assays
P-3033-48	EpiQuik Global Di-Methyl Histone H3-K9 Quantification Kit (Fluorometric)	48 assays
P-3033-96	EpiQuik Global Di-Methyl Histone H3-K9 Quantification Kit (Fluorometric)	96 assays
P-3034-48	EpiQuik Global Tri-Methyl Histone H3-K9 Quantification Kit (Colorimetric)	48 assays
P-3034-96	EpiQuik Global Tri-Methyl Histone H3-K9 Quantification Kit (Colorimetric)	96 assays
P-3035-48	EpiQuik Global Tri-Methyl Histone H3-K9 Quantification Kit (Fluorometric)	48 assays
P-3035-96	EpiQuik Global Tri-Methyl Histone H3-K9 Quantification Kit (Fluorometric)	96 assays
P-3036-96	EpiQuik Global Pan-Methyl Histone H3-K9 Quantification Kit (Colorimetric)	96 assays
P-3037-96	EpiQuik Global Pan-Methyl Histone H3-K9 Quantification Kit (Fluorometric)	96 assays
P-3038-48	EpiQuik Global Mono-Methyl Histone H3-K27 Quantification Kit (Colorimetric)	48 assays
P-3038-96	EpiQuik Global Mono-Methyl Histone H3-K27 Quantification Kit (Colorimetric)	96 assays
P-3039-48	EpiQuik Global Mono-Methyl Histone H3-K27 Quantification Kit (Fluorometric)	48 assays
P-3039-96	EpiQuik Global Mono-Methyl Histone H3-K27 Quantification Kit (Fluorometric)	96 assays
P-3040-48	EpiQuik Global Di-Methyl Histone H3-K27 Quantification Kit (Colorimetric)	48 assays
P-3040-96	EpiQuik Global Di-Methyl Histone H3-K27 Quantification Kit (Colorimetric)	96 assays
P-3041-48	EpiQuik Global Di-Methyl Histone H3-K27 Quantification Kit (Fluorometric)	48 assays
P-3041-96	EpiQuik Global Di-Methyl Histone H3-K27 Quantification Kit (Fluorometric)	96 assays
P-3042-48	EpiQuik Global Tri-Methyl Histone H3-K27 Quantification Kit (Colorimetric)	48 assays
P-3042-96	EpiQuik Global Tri-Methyl Histone H3-K27 Quantification Kit (Colorimetric)	96 assays
P-3043-48	EpiQuik Global Tri-Methyl Histone H3-K27 Quantification Kit (Fluorometric)	48 assays
P-3043-96	EpiQuik Global Tri-Methyl Histone H3-K27 Quantification Kit (Fluorometric)	96 assays
P-3044-96	EpiQuik Global Pan-Methyl Histone H3-K27 Quantification Kit (Colorimetric)	96 assays
P-3045-96	EpiQuik Global Pan-Methyl Histone H3-K27 Quantification Kit (Fluorometric)	96 assays
P-3046-48	EpiQuik Global Mono-Methyl Histone H3-K36 Quantification Kit (Colorimetric)	48 assays
P-3046-96	EpiQuik Global Mono-Methyl Histone H3-K36 Quantification Kit (Colorimetric)	96 assays
P-3047-48	EpiQuik Global Mono-Methyl Histone H3-K36 Quantification Kit (Fluorometric)	48 assays
P-3047-96	EpiQuik Global Mono-Methyl Histone H3-K36 Quantification Kit (Fluorometric)	96 assays
P-3048-48	EpiQuik Global Di-Methyl Histone H3-K36 Quantification Kit (Colorimetric)	48 assays
P-3048-96	EpiQuik Global Di-Methyl Histone H3-K36 Quantification Kit (Colorimetric)	96 assays
P-3049-48	EpiQuik Global Di-Methyl Histone H3-K36 Quantification Kit (Fluorometric)	48 assays
P-3049-96	EpiQuik Global Di-Methyl Histone H3-K36 Quantification Kit (Fluorometric)	96 assays
P-3050-48	EpiQuik Global Tri-Methyl Histone H3-K36 Quantification Kit (Colorimetric)	48 assays
P-3050-96	EpiQuik Global Tri-Methyl Histone H3-K36 Quantification Kit (Colorimetric)	96 assays
P-3051-48	EpiQuik Global Tri-Methyl Histone H3-K36 Quantification Kit (Fluorometric)	48 assays
P-3051-96	EpiQuik Global Tri-Methyl Histone H3-K36 Quantification Kit (Fluorometric)	96 assays
P-3052-96	EpiQuik Global Pan-Methyl Histone H3-K36 Quantification Kit (Colorimetric)	96 assays
P-3053-96	EpiQuik Global Pan-Methyl Histone H3-K36 Quantification Kit (Fluorometric)	96 assays
P-3054-48	EpiQuik Global Mono-Methyl Histone H3-K79 Quantification Kit (Colorimetric)	48 assays
P-3054-96	EpiQuik Global Mono-Methyl Histone H3-K79 Quantification Kit (Colorimetric)	96 assays
P-3055-48	EpiQuik Global Mono-Methyl Histone H3-K79 Quantification Kit (Fluorometric)	48 assays
P-3055-96	EpiQuik Global Mono-Methyl Histone H3-K79 Quantification Kit (Fluorometric)	96 assays
P-3056-48	EpiQuik Global Di-Methyl Histone H3-K79 Quantification Kit (Colorimetric)	48 assays
P-3056-96	EpiQuik Global Di-Methyl Histone H3-K79 Quantification Kit (Colorimetric)	96 assays
P-3057-48	EpiQuik Global Di-Methyl Histone H3-K79 Quantification Kit (Fluorometric)	48 assays
P-3057-96	EpiQuik Global Di-Methyl Histone H3-K79 Quantification Kit (Fluorometric)	96 assays
P-3058-48	EpiQuik Global Tri-Methyl Histone H3-K79 Quantification Kit (Colorimetric)	48 assays
P-3058-96	EpiQuik Global Tri-Methyl Histone H3-K79 Quantification Kit (Colorimetric)	96 assays
P-3059-48	EpiQuik Global Tri-Methyl Histone H3-K79 Quantification Kit (Fluorometric)	48 assays
P-3059-96	EpiQuik Global Tri-Methyl Histone H3-K79 Quantification Kit (Fluorometric)	96 assays
P-3060-96	EpiQuik Global Pan-Methyl Histone H3-K79 Quantification Kit (Colorimetric)	96 assays
P-3061-96	EpiQuik Global Pan-Methyl Histone H3-K79 Quantification Kit (Fluorometric)	96 assays

Histone Acetylase (HAT) Assay

HISTONE ACETYLASE (HAT) PRODUCTS

Catalog #	Description	Size
P-4003-48	EpiQuik HAT Activity & Inhibition Assay Kit	48 assays
P-4003-96	EpiQuik HAT Activity & Inhibition Assay Kit	96 assays

Product Highlight

EpiQuik™ HAT Activity & Inhibition Assay Kit

The EpiQuik™ HAT Activity/Inhibition Assay Kit is a ready-to-use set of essential components needed to measure HAT activity/inhibition safely and quickly. It is suitable for measuring HDAC activity/inhibition from a broad range of species including mammalian or plant cells/tissues or bacteria.

Histone Deacetylase (HDAC) Assay

Product Highlight

EpiQuik™ HDAC Activity & Inhibition Assay Kit (Colorimetric)

The EpiQuik™ HDAC Activity/Inhibition Assay Kit is a ready-to-use set of essential components needed to measure HDAC activity/inhibition safely and quickly. It is suitable for measuring HDAC activity/inhibition from a broad range of species including mammalian or plant cells/tissues or bacteria.

PRINCIPLE & PROCEDURE

The EpiQuik™ HDAC Activity/Inhibition Assay Kit is designed for measuring total HDAC activity/inhibition. In an assay with this kit, the unique acetylated histone substrate is stably captured on the strip wells. Active HDACs bind to and deacetylate histone substrate. The remaining un-deacetylated substrate can be recognized with high affinity acetylated histone antibody. The ratio or amount of the un-deacetylated histone, which is inversely proportional to HDAC enzyme activity, can be then colorimetrically quantified through an ELISA-like reaction.

HISTONE DEACETYLASE (HDAC) ASSAY PRODUCTS

Catalog #	Description	Size
P-4001-48	EpiQuik HDAC Activity/Inhibition Assay Kit (Fluorometric)	48 assays
P-4001-96	EpiQuik HDAC Activity/Inhibition Assay Kit (Fluorometric)	96 assays
P-4002-48	EpiQuik HDAC Activity & Inhibition Assay Kit (Colorimetric)	48 assays
P-4002-96	EpiQuik HDAC Activity & Inhibition Assay Kit (Colorimetric)	96 assays
P-4005-24	EpiQuik HDAC1 Assay Kit	24 assays
P-4005-48	EpiQuik HDAC1 Assay Kit	48 assays
P-4005-96	EpiQuik HDAC1 Assay Kit	96 assays
P-4006-24	EpiQuik HDAC2 Assay Kit	24 assays
P-4006-48	EpiQuik HDAC2 Assay Kit	48 assays
P-4006-96	EpiQuik HDAC2 Assay Kit	96 assays
P-4007-24	EpiQuik HDAC8 Assay Kit	24 assays
P-4007-48	EpiQuik HDAC8 Assay Kit	48 assays
P-4007-96	EpiQuik HDAC8 Assay Kit	96 assays

Histone Acetylation Quantification

HISTONE ACETYLATION QUANTIFICATION PRODUCTS

Catalog #	Description	Size
P-4008-96	EpiQuik Global Histone H3 Acetylation Assay Kit	96 assays
P-4009-96	EpiQuik Global Histone H4 Acetylation Assay Kit	96 assays
P-4010-96	EpiQuik Global Acetyl Histone H3-K9 Quantification Kit (Colorimetric)	96 assays
P-4011-96	EpiQuik Global Acetyl Histone H3-K9 Quantification Kit (Fluorometric)	96 assays
P-4012-96	EpiQuik Global Acetyl Histone H3-K14 Quantification Kit (Colorimetric)	96 assays
P-4013-96	EpiQuik Global Acetyl Histone H3-K14 Quantification Kit (Fluorometric)	96 assays
P-4014-96	EpiQuik Global Acetyl Histone H3-K18 Quantification Kit (Colorimetric)	96 assays
P-4015-96	EpiQuik Global Acetyl Histone H3-K18 Quantification Kit (Fluorometric)	96 assays

SCIENTIFIC BACKGROUND

Acetylation of histones including histone H3 and H4 has been involved in the regulation of chromatin structure and the recruitment of transcription factors to gene promoters. Histone acetyltransferases (HATs) and histone deacetylases (HDACs) play a critical role in controlling histone H3 and H4 acetylation. Histone acetylation is tightly involved in cell cycle regulation, cell proliferation and apoptosis. Epigentek offers reliable tools for measuring global acetylation of histone H3 or H4.

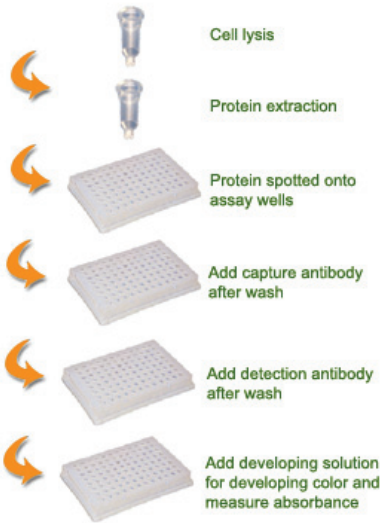
Catalog #	Description	Size
P-4016-96	EpiQuik Global Acetyl Histone H3-K23 Quantification Kit (Colorimetric)	96 assays
P-4017-96	EpiQuik Global Acetyl Histone H3-K23 Quantification Kit (Fluorometric)	96 assays
P-4018-96	EpiQuik Global Acetyl Histone H3-K36 Quantification Kit (Colorimetric)	96 assays
P-4019-96	EpiQuik Global Acetyl Histone H3-K36 Quantification Kit (Fluorometric)	96 assays
P-4020-96	EpiQuik Global Acetyl Histone H3-K56 Quantification Kit (Colorimetric)	96 assays
P-4021-96	EpiQuik Global Acetyl Histone H3-K56 Quantification Kit (Fluorometric)	96 assays

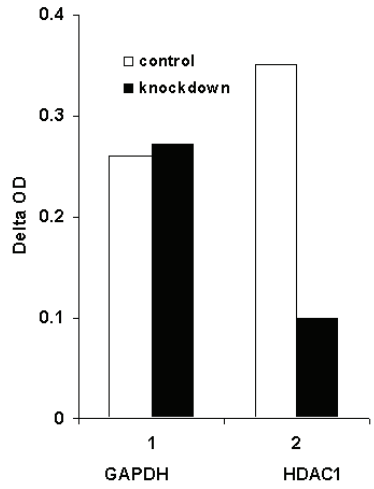
Gene Expression & Silencing

Product Highlight

QuantiSir™ General Gene Knockdown Quantification Kit

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 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.





◄ **Fig. 19. QuantiSir Gene Knockdown Quantification Kit**

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.

PRINCIPLE AND PROCEDURE

The QuantiSir™ General Gene Knockdown Quantification Kit is specifically designed for quantifying gene knockdown induced by siRNA or antisense oligonucleotide at the protein level in cultured cells or tissues. In the assay, cell lysates containing the targeted protein are stably spotted on specifically treated microwells with a unique protein capture buffer. The spotted protein can then be recognized with the target-specific antibody and colorimetrically measured through a detection antibody-chromogen reaction system. GAPDH expression as the internal control can be used for normalizing the effect of target gene knockdown.

SCIENTIFIC BACKGROUND

Targeted gene knockdown using small interfering RNA (siRNA) or antisense oligonucleotides has been a valuable technology for studying gene function. Gene knockdown leads to the reduction in mRNA and subsequently protein expression. Our kit uses unique procedures and compositions to directly quantify gene knockdown effects at the protein level by using various mammalian cell or tissue lysates. These kits provide simple and rapid tools for measuring levels of gene expression/silencing.

SPECIFIC GENE KNOCKDOWN QUANTIFICATION

Epigentek also offers *QuantiSir™ Specific Gene Knockdown Quantification Kits* for measurement of knockdown in 8 different applications and 387 genes. All QuantiSir™ Specific Gene Knockdown Quantification Kits are offered in 96 assay sizes. 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.

GENE EXPRESSION & SILENCING PRODUCTS

Catalog #	Description	Size
P-5001-48	QuantiSir General Gene Knockdown Quantification Kit	48 assays
P-5001-96	QuantiSir General Gene Knockdown Quantification Kit	96 assays
P-5002-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for Epigenetic Regulators	96 assays
P-5003-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for DNA Damage/Repair	96 assays
P-5004-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for Cell Death/Apoptosis	96 assays
P-5005-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for Cell Cycle Regulation	96 assays
P-5006-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for Cell Proliferation	96 assays
P-5007-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for Tumor Suppressors/Oncogenes	96 assays
P-5008-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for Signal Transduction	96 assays
P-5009-*x*-96*	QuantiSir Specific Gene Knockdown Quantification Kit for Transcription Factors	96 assays

* The variable *x* in the catalog numbers for QuantiSir Specific Gene Knockdown Quantification Kits refers to the specific gene for the kit. For a complete list of available genes, please visit www.epigentek.com.

Product Highlight

EpiQuik™ In Situ DNA Damage Assay Kit

The EpiQuik™ In Situ DNA Damage Assay Kit is a convenient set of tools that allows the experimenter to detect DNA damage or apoptosis by measuring phosphorylation of H2AX^{Ser139} in situ. The kit is ready-to-use and provides all the essential components needed for specifically measuring DNA damage in situ through phospho H2AX^{Ser139} detection using cultured adherent cells.

PRINCIPLE & PROCEDURE

EpiQuik™ In Situ DNA Damage Assay Kit is a whole cell-based detection of DNA damage and/or apoptosis. In this assay, adherent cells are cultured in conventional 96-well microplates. After your experimental treatment, cells are fixed and permeabilized. The phosphorylation of H2AX at serine139, the sensitive marker of DNA damage, is then detected by anti-phospho H2AX^{Ser139} antibody. The ratio or amount of phospho H2AX^{Ser139} can be quantified through HRP conjugated secondary antibody-color development system and is proportional to the intensity of color development.

DNA DAMAGE & REPAIR PRODUCTS

Catalog #	Description	Size
OP-0001-1	EpiQuik Superoxide Dismutase Activity & Inhibition Assay Kit (Colorimetric)	96 assays
OP-0001-2	EpiQuik Superoxide Dismutase Activity & Inhibition Assay Kit (Colorimetric)	2x96 assays
OP-0001-3	EpiQuik Superoxide Dismutase Activity & Inhibition Assay Kit (Colorimetric)	5x96 assays
OP-0004-1	CytoX-Red Cell Proliferation/Cytotoxicity Assay Kit	3x96 assays
OP-0004-2	CytoX-Red Cell Proliferation/Cytotoxicity Assay Kit	5x96 assays
OP-0004-3	CytoX-Red Cell Proliferation/Cytotoxicity Assay Kit	10x96 assays
OP-0005-1	CytoX-Violet Cell Proliferation/Cytotoxicity Assay Kit	5x96 assays
OP-0005-2	CytoX-Violet Cell Proliferation/Cytotoxicity Assay Kit	10x96 assays
OP-0005-3	CytoX-Violet Cell Proliferation/Cytotoxicity Assay Kit	20x96 assays
P-6001-096	EpiQuik In Situ DNA Damage Assay Kit	96 assays
P-6001-192	EpiQuik In Situ DNA Damage Assay Kit	2x96 assays

Phosphorylation

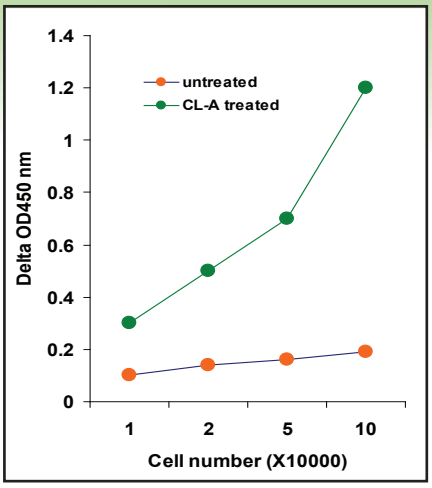
Product Highlight

EpiQuik™ In Situ Histone H3 Phosphorylation (Ser10) Assay Kit

The EpiQuik™ In Situ Histone H3 Phosphorylation (Ser10) Assay Kit is a convenient set of tools that allows the experimenter to measure in situ phospho histone H3 (ser10). The kit is ready-to-use and provides all the essential components needed for specifically measuring histone H3 phosphorylation (ser10) in situ using cultured adherent cells.

PRINCIPLE & PROCEDURE

The EpiQuik™ In Situ Histone H3 Phosphorylation (Ser10) Assay Kit is a whole cell-based detection of histone H3 phosphorylation (ser10). In this assay, adherent cells are cultured in conventional 96-well microplates. After the experimental treatment, cells are fixed and permeabilized. Histone H3 phosphorylation (ser10) is then detected by anti-phospho histone H3 (ser10) antibody. The ratio or amount of phospho histone H3 (ser10) can be quantitated through an HRP conjugated secondary antibody-color development system and is proportional to the intensity of color development.



◄ **Fig. 20. EpiQuik In Situ Histone H3 Phosphorylation (Ser10) Assay Kit**

MCF-7 cells were treated with CL-A (100 nM) for 4 h and histone H3 phosphorylation (ser10) was measured.

PHOSPHORYLATION PRODUCTS

Catalog #	Description	Size
P-7001-96	EpiQuik In Situ Histone H3 Phosphorylation (Ser10) Assay Kit	96 assays
P-7002-48	EpiQuik Global Histone H3 Phosphorylation (Ser10) Assay Kit (Colorimetric)	48 assays
P-7002-96	EpiQuik Global Histone H3 Phosphorylation (Ser10) Assay Kit (Colorimetric)	96 assays

SCIENTIFIC BACKGROUND

Sumoylation is a post-translational modification involved in various cellular processes, such as nuclear-cytosolic transport, transcriptional regulation, apoptosis, protein stability, response to stress, and progression through the cell cycle.

Epigentek offers reliable kits for measuring in vivo protein sumoylation and in vivo HDAC1 sumoylation in an easy, one-step colorimetric assay. SUMO protein is included as the positive control, allowing for protein or HDAC1 sumoylation to be quantified.

SUMOYLATION PRODUCTS

Catalog #	Description	Size
P-8001-48	EpiQuik In Vivo Universal Protein Sumoylation Assay Kit	48 assays
P-8001-96	EpiQuik In Vivo Universal Protein Sumoylation Assay Kit	96 assays
P-8002-48	EpiQuik In Vivo HDAC1 Sumoylation Assay Kit	48 assays
P-8002-96	EpiQuik In Vivo HDAC1 Sumoylation Assay Kit	96 assays

Epigenetic Antibodies

Product Highlight

Anti-5-methylcytosine (5-Methylcytidine)

SCIENTIFIC BACKGROUND

Mouse anti-5mC monoclonal antibody (Clone 33D3) is developed and optimized for discriminating between modified base 5-methylcytosine and normal cytosine in DNA. The antibody is suitable for immunoprecipitation-based assays, particularly methylated DNA immunoprecipitation (MeDIP).

Concentration: 1 mg/ml

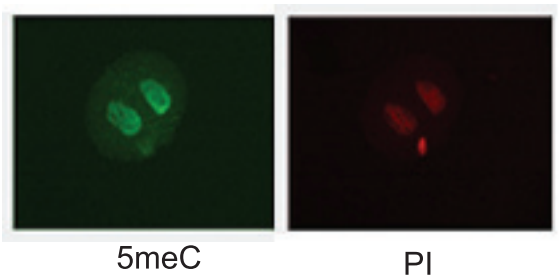
Description: Mouse monoclonal antibody to 5-methylcytidine, clone 33D3

Specificity: Modified base 5-methylcytidine, a broad range of species.

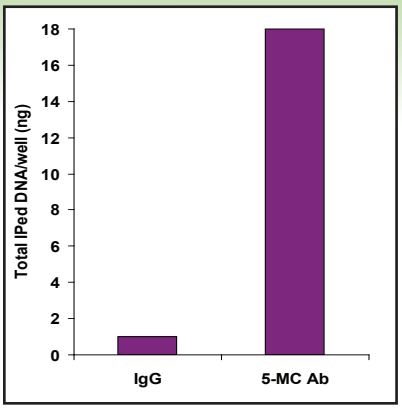
Isotype: IgG1

Formulation: 10 mM phosphate buffer, 150 mM NaCl, pH 7.4

Application: WB: 1:200-1:500; IHC: 1:100-1: 500, ELISA: 1:1000-1:2000; IP: 2 µg/10^6 cells



▲ **Fig. 21. Anti-5-methylcytosine (5-Methylcytidine)**
Immunofluorescence staining with Epigentek 5-mC antibody against 5-methylcytosine in mouse tetraploid embryos.



◄ **Fig. 20. Anti-5-methylcytosine (5-Methylcytidine)**

Methylated DNA immunoprecipiotation with mouse anti-5-methylcytidine monoclonal antibody from Epigentek.

OPTIMIZED FOR EPIGENETICS*

Our wide selection of antibodies is designed for epigenetic applications including:

DNA Modification/Methylation
Protein-DNA Interaction
Histone Methylation
Acetylation & Deacetylation

EPIGENETIC ANTIBODIES PRODUCTS

Catalog #	Description	Size
A-1014-050	Anti-5-methylcytosine (5-methylcytidine)	50 µg
A-1014-100	Anti-5-methylcytosine (5-methylcytidine)	100 µg

For a complete list of our available antibodies, visit Epigentek on the web at www.epigentek.com.

Epigenetic Drug Discovery Services

Epigentek offers its advanced and proprietary epigenetic technology as a service to meet your needs at each stage of your drug discovery continuum. You can now enhance your drug discovery and development without the burden of increased staff and equipment, choose better drug candidates for further development, determine specificity of lead candidates against a wide range of epigenetic targets, and validate lead candidates in a rapid, reliable, and high throughput assay format. The following screening services can enable the drug candidates to be tested *in situ* and *in vitro*:

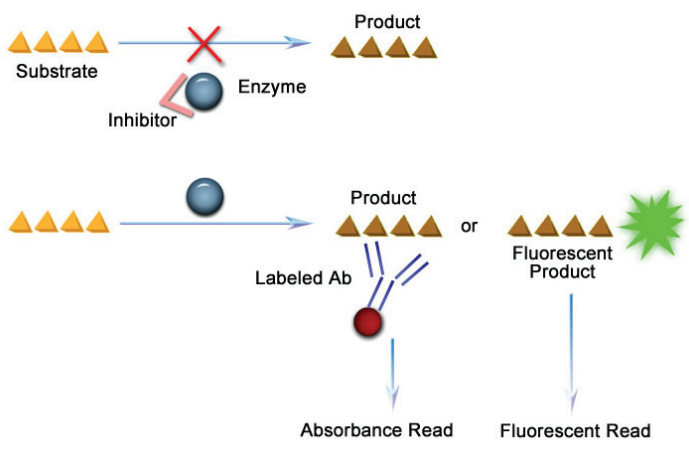
Epigenase™ Epigenetic Enzyme Inhibitor Screening System

The Epigenase™ proprietary technology and method provides a platform to screen inhibitors specific to individual HDACs and Dnmts in addition to the testing of inhibitors against total enzymatic activity.

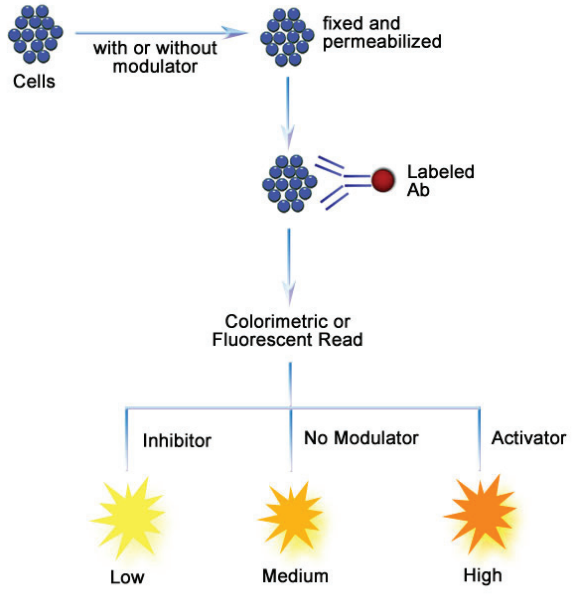
EpiModifier™ Epigenetic Modulator Screening System

The EpiModifier™ proprietary technology and method provides a platform that allows screening of modulators that target site specific histone modifications, global DNA methylation, and functional region-specific DNA methylation.

Principle of *Epigenase*™ Screening



Principle of *EpiModifier*™ Screening



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