

BIOARRAY™ 5-hmC methylation kit

Detect 5-hydroxymethylcytosine using a
robust glucosylation method

The BIOARRAY™ 5-hmC methylation kit allows for sequence specific detection of 5-hydroxymethylcytosine within DNA using a simple and efficient glucosylation reaction procedure.

5-Hydroxymethylcytosine (5hmC), also known as the “6th base”, is a newly discovered epigenetic modification. Although it was first identified in bacteriophages, its role was thought to be limited to protecting the phage genome from host induced restriction endonucleases. Interestingly, 5-hydroxymethylcytosine has recently been found in embryonic stem cells, the brain, as well as numerous other organs. Even though its presence has been confirmed, its biological role remains elusive. It has been proposed that 5-hydroxymethylcytosine may play a role in DNA demethylation (5-methylcytosine) or be involved in another layer of gene expression regulation.

Ordering Information

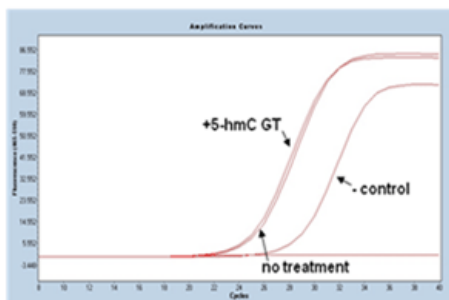
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ENZ-45011-0050	50 tests
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Manuals, SDS & CofA

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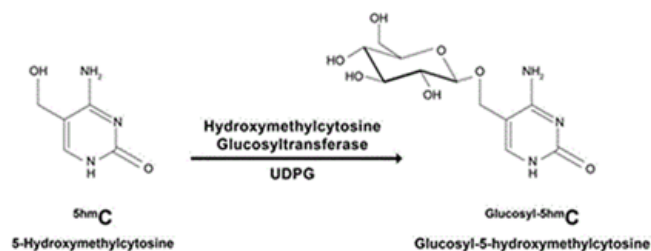
- Single tube reaction format
- Suitable for analysis by a variety of downstream applications
- Flexible setup for custom assay design



MspI Digestion qPCR

Sample	Cp Value
no treatment	25.1
- control	28.5
+5-hmC Glucosyltransferase	24.9

Detection of 5-hmC by qPCR. The “no treatment” DNA will establish the level (i.e., Cp value) that is representative of complete hydroxymethylation at the interrogation site. Conversely, the “- control” (unglucosylated sample) will indicate a level of no hydroxymethylation at the site. The “+Glucosyltransferase (5-hmC)” i.e glucosylated sample, Cp value should be somewhere between the two, i.e., “no treatment” and “-control”. This will depend on the extent of hydroxymethylation at the interrogation site. GSRE digested unglucosylated DNA (i.e., “- control”) will always yield a signal albeit at a higher Cp value than the other samples.



Overall principle of the BIOARRAY™ 5-hmC methylation kit. Treatment of DNA containing 5hmC with 5-hmC Glucosyltransferase specifically adds a glucose moiety yielding glucosyl-5-hydroxymethylcytosine. Following digestion with GSREs (will specifically cleave DNA having cytosine, 5-methylcytosine, or 5-hydroxymethylcytosine in the recognition sequence. Glucosyl-5-hydroxymethylcytosine in the DNA will remain uncleaved.

BioArray™ 5-hmC Methylation Kit

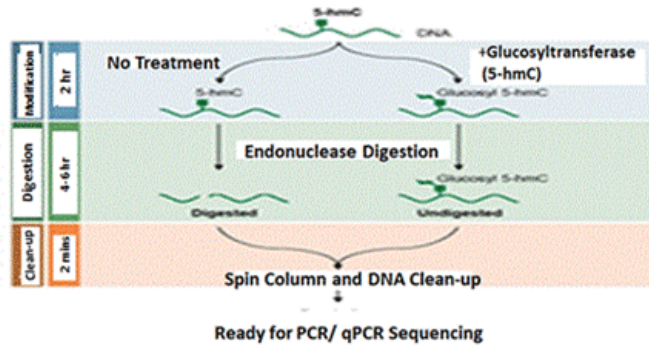


Figure : Overall work flow of the BIOARRAY™ 5-hmC methylation Kit (DNA samples are first modified via glucosylation of 5hmC within DNA and then digested with MspI. A low elution spin column is featured for clean-up of ultra-pure DNA which is then used in qPCR for locus-specific analysis of 5hmC.

Handling & Storage

Use/Stability With proper storage, good for 12 months upon receipt.

Long Term Storage -20°C

Shipping Dry Ice

Regulatory Status RUO - Research Use Only

Product Details

Contents 5-hmC Glucosyltransferase (5-hmC), 10X 5-hmC Reaction buffer, 10X UDPG (uridine diphosphoglucose), MspI restriction enzyme, 5-hmC Control DNA, qPCR Primer 1, qPCR Primer 2 and 5-DNA clean up concentrator kit



ENZO LIFE SCIENCES,
INC.
Phone: 800.942.0430
[info-
usa@enzolifesciences.com](mailto:info-usa@enzolifesciences.com)

European Sales Office
ENZO LIFE SCIENCES
(ELS) AG
Phone: +41 61 926 8989
[info-
eu@enzolifesciences.com](mailto:info-eu@enzolifesciences.com)

Belgium, The Netherlands
& Luxembourg
Phone: +32 3 466 0420
[info-
be@enzolifesciences.com](mailto:info-be@enzolifesciences.com)

France
Phone: +33 472 440 655
[info-
fr@enzolifesciences.com](mailto:info-fr@enzolifesciences.com)

Germany
Phone: +49 7621 5500 526
[info-
de@enzolifesciences.com](mailto:info-de@enzolifesciences.com)

UK & Ireland
Phone (UK customers):
0845 601 1488
Phone: +44 1392 825900
[info-
uk@enzolifesciences.com](mailto:info-uk@enzolifesciences.com)