



ZYMO RESEARCH



Human Matched DNA Set

Organ-specific human genomic DNA standards for detection and quantification of 5-mC and 5-hmC

Highlights

- Matched set of human genomic DNA from brain and spleen originating from a single individual.
- Precisely quantified levels of 5-methylcytosine (5-mC) and 5-hydroxymethylcytosine (5-hmC) via mass spectrometry (LC/MS).
- Useful controls for detection methods of 5-mC or 5-hmC.

Catalog Numbers:

D5018, D5018-1, D5018-2



Scan with your smart-phone camera to view the online protocol/video.



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Product Contents

Human Matched DNA Set	D5018	D5018-1	D5018-2	Storage Temp.
Human Brain DNA	5 µg/20 µl	5 µg/20 µl	-	-20°C
Human Spleen DNA	5 µg/20 µl	-	5 µg/20 µl	-20°C

Specifications

- **Source** – Human male brain and spleen tissue.
- **Concentration** – 250 ng/µl in modified TE buffer (10mM Tris-HCl; 0.1mM EDTA; pH 8.0).

Product Description

The **Human Matched DNA Set** is a set of organ specific human genomic DNAs originating from a single individual. This set is an ideal control for detection and/or quantification methods against 5-methylcytosine (5-mC) and 5-hydroxymethylcytosine (5-hmC) as both modified cytosines are present at physiologically relevant levels and loci¹. The levels of 5-methylcytosine and 5-hydroxymethylcytosine within the **Human Matched DNA Set** have been quantified and are listed below.

	Brain	Spleen
5-mC	6.93 %	6.75 %
5-hmC	1.89 %	0.18 %

Table 1. LC/MS Quantification. 500 ng of brain and spleen genomic DNA from the Human Matched DNA Set were digested with **DNA Degradase Plus (E2020)** for 1 hour. The processed DNA was subsequently run on LC/MS for precise global quantification of 5-mC and 5-hmC percentages.

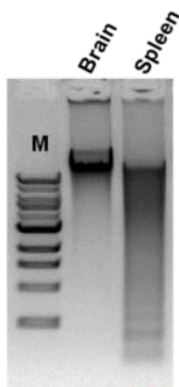


Figure 1. Human Matched Genomic DNA Set. 1 µg of brain and spleen human genomic DNA were resolved in a 0.8% agarose gel. “M” denotes the **ZR 1kb DNA Marker (M5003)**.

Note: Some degradation of genomic DNA originating from organs may be unavoidable due to processing time of tissue post-mortem.

¹For human genomic DNA with extremely low levels (<0.03%) of 5-hydroxymethylcytosine, please refer to **Human HCT116 DKO Non-methylated DNA (D5014-1)**.

Recommended Usage

The **Human Matched DNA Set** can be used as controls for bisulfite conversion and downstream analyses such as bisulfite PCR, methylation sequencing applications, methylation assay calibration, and more.

Protocol

For best results, it's important to ensure the DNA is completely homogenous and fully in solution before quantification and usage. The following steps are recommended before quantification and usage¹:

1. Bring the standards to room temperature.
2. Vortex the standards for 10-15 seconds, briefly spin down for 5-10 seconds.
3. Repeat Step 2 twice, for three times total.
4. Proceed with quantification or usage.

¹Standards are quantified using NanoDrop® measurements. If using other methods, variation may be observed.

Ordering Information

Product Description	Catalog No.	Size
Human Methylated & Non-methylated DNA Set	D5014	5 µg/20 µl
Human HCT116 DKO Non-Methylated DNA	D5014-1	5 µg/20 µl
Human HCT116 DKO Methylated DNA	D5014-2	5 µg/20 µl
Bisulfite-Converted Universal Methylated Human DNA Standard	D5015	1 µg/50 µl
ZymoTaq™ qPCR Premix	E2054 E2055	50 Rxns. 200 Rxns.
ZymoTaq™ Premix	E2003 E2004	50 Rxns 200 Rxns.
EZ DNA Methylation-Lightning™ Kit	D5030 D5031	50 Rxns 200 Rxns.
EZ DNA Methylation-Direct™ Kit	D5020 D5021	50 Rxns 200 Rxns.
EZ DNA Methylation™ Kit	D5001 D5002	50 Rxns 200 Rxns.
EZ DNA Methylation-Gold™ Kit	D5005 D5006	50 Rxns 200 Rxns.



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