

# 5-Methylcytosine & 5-Hydroxymethylcytosine DNA Standard Set

Cat. No. D5405

Storage: -20 °C

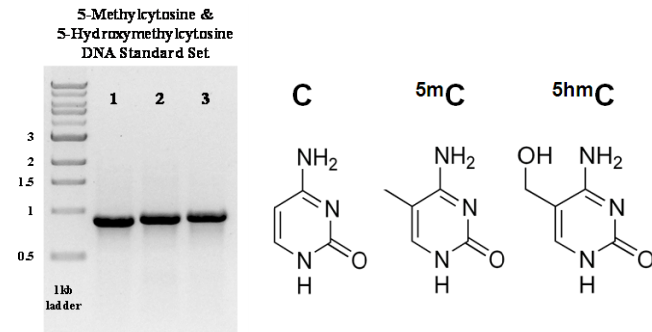
## Product Information

### Applications:

- Control DNA for 5-methylcytosine and 5-hydroxymethylcytosine quantitation applications (i.e. - mass spectrometry, HPLC, TLC, etc.)<sup>1</sup>
- Substrate for studies involving 5-hydroxymethylcytosine interacting proteins

### Description:

The 5-Methylcytosine & 5-Hydroxymethylcytosine DNA Standard Set is a set of three DNA standards that are linear dsDNA, 897 bp, and have the same sequence (see sequence below & figure). The only difference is that each contains either 100% unmodified cytosines, 5-methylcytosines, or 5-hydroxymethylcytosines (see figure). Since the sequence and extent of cytosine modification is known, this DNA standard set is ideal for use in calibration of various applications intended for quantitation of cytosine modifications.



**5-Methylcytosine & 5-Hydroxymethylcytosine DNA Standard Set**  
All three standards are 897 bp with all cytosines either unmodified (lane 1, C), 5-methylcytosine (lane 2, <sup>5m</sup>C), or 5-hydroxymethylcytosine (lane 3, <sup>5hm</sup>C). 1kb DNA ladder (Zymo Research).

### Product Contents:

	Cat. No.	DNA	Storage
<b>Cytosine DNA Standard</b>	D5405-1	2 µg	-20°C
<b>5-Methylcytosine DNA Standard</b>	D5405-2	2 µg	-20°C
<b>5-Hydroxymethylcytosine DNA Standard</b>	D5405-3	2 µg	-20°C

**Storage:** Store reagents at -20 °C for up to 12 months. Prolonged storage should be ≤ -70 °C.

**DNA Concentration:** [50 ng/µl] in storage buffer (10mM Tris-HCl; 0.1mM EDTA; pH 8.0). All standards are supplied in 40 µl volume.

### Sequence Information

5'... 1 AGAATTGGTT AATGGTTGT AACACTGGCA GAGCATTACG CTGACTTGAC  
 51 GGGACGGCGG CTTTGTGAA TAAATCGAAC TTTTCTGAG TTGAAGGATC  
 101 AGATCAGCGA TCTTCCCGAC AACGCAGACC GTTCCGTGGC AAAGCAAAAAG  
 151 TTCAAATAA CCAACTGGTC CACCTACAAC AAAGCTCTCA TCAACCGTGG  
 201 CTCCTCACT TTCTGGCTGG ATGATGGGGC GATTCAGGCC TGGTATGAGT  
 251 CAGCAACACC TTCTTCACGA GGCAGACCTC AGCGCTCAAA GATGCAGGGG  
 301 TAAAAGCTAA CCGCATCTTT ACCGACAAGG CATCCGGCAG TTCAAACAGAT  
 351 CGGGAAGGGC TGGATTGGCT GAGGATGAAG GTGGAGGAAG GTGATGTGAT  
 401 TCTGGTGAAG AAGCTCGACC GTCTTGGCCG CGACACCGCC GACATGATCC  
 451 AACTGATAAA AGAGTTTGAT GCTCAGGGTG TAGCGGTTTCG GTTTATTGAC  
 501 GACGGGATCA GTACCGACGG TGATATGGGG CAAATGGTGG TCACCATCCT  
 551 GTCGGCTGTG GCACAGGCTG AACGCCGGAG GATCCTAGAG CGCACGAATG  
 601 AGGGCCGACA GGAAGCAAAG CTGAAAGGAA TCAAATTGCG CCGCAGCGCT

651 ACCGTGGACA GGAACGTCGT GCTGACGCTT CATCAGAAGG GCACTGGTGC  
 701 AACGAAATT GCTCATCAGC TCAGTATTGC CCGCTCCACG GTTTATAAAA  
 751 TTCTTGAAGA CGAAAGGGCC TCGTGATACG CCTATTTTTA TAGGTTAATG  
 801 TCATGATAAT AATGGTTTCT TAGACGTCAG GTGGCACTTT TCGGGGAAAT  
 851 GTGCGCGGAA CCCTATTTC TTTATTTTTC TAAATACATT CAAATAT...3'

**Note:** Sequence is same for all three standards. Depending on the DNA, all C's are unmodified cytosine, 5-methylcytosine, or 5-hydroxymethylcytosine. Sequence can be downloaded on the product page of our website.

### Sequence Statistics

Nucleotide	Count	Frequency (%)
Adenine (A)	237	26.4
Cytosine (C)	201	22.4
Guanine (G)	246	27.4
Thymine (T)	213	23.7
C + G	447	49.8
A + T	450	50.2

### References

- Ito, S. *et al.* (2010) "Role of Tet proteins in 5mC to 5hmC conversion, ES-cell self-renewal and inner cell mass specification". *Nature* 466, 1129-1133.

### Related Epigenetics Products:

Product Name	Size	Cat. No.
<b>5-HYDROXYMETHYLCYTOSINE</b>		
Quest 5-hmC Detection Kit™	25 Preps. 50 Preps.	D5410 D5411
Quest 5-hmC Detection Kit™ - Lite	25 Preps. 50 Preps.	D5415 D5416
Human Matched DNA Set	2 x 5 µg	D5018
Mouse 5hmC & 5mC DNA Set	4 x 5 µg	D5019
5-hmC Glucosyltransferase	100 units 200 units	E2026 E2027
5-Hydroxymethyl dCTP [100mM]	10 µmol	D1045
5-Methyl dCTP [10mM]	1 µmol	D1035
5-Methylcytosine & 5-Hydroxymethylcytosine DNA Standard Set	1 set	D5405
<b>BISULFITE TREATMENT OF DNA</b>		
EZ DNA Methylation-Direct™ Kit	50 rxns.	D5020
	200 rxns.	D5021
	2 x 96 rxns.	D5022
	2 x 96 rxns.	D5023
EZ DNA Methylation-Startup™ Kit	50 rxns.	D5024
EZ Bisulfite DNA Clean-up Kit™	50 preps.	D5025
	200 preps.	D5026
	2 x 96 preps.	D5027
	2 x 96 preps.	D5028
<b>METHYLATED/NON-METHYLATED DNA STANDARDS</b>		
Universal Methylated DNA Standard	1 set	D5010
Universal Methylated Human DNA Standard	1 set	D5011
Universal Methylated Mouse DNA Standard	1 set	D5012
Human Methylated and Non-methylated DNA Set	1 set	D5014
Human HCT116 DKO Non-methylated DNA Standard	5 µg	D5014-1
Human HCT116 DKO Methylated DNA Standard	5 µg	D5014-2
Bisulfite Converted Universal Methylated Human DNA Standard	1 set	D5015
<i>E. coli</i> Non-methylated Genomic DNA	5 µg	D5016

# 5-Methylcytosine & 5-Hydroxymethylcytosine DNA Standard Set



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

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## Product Information

AMPLIFICATION OF BISULFITE CONVERTED DNA		
Zymo Taq™ DNA Polymerase	50 rxns.	E2001
	200 rxns.	E2002
Zymo Taq™ PreMix (2X concentrated)	50 rxns.	E2003
	200 rxns.	E2004
ANTIBODIES & IMMUNOPRECIPITATION		
Methylated-DNA IP Kit	10 preps.	D5101
ChIP DNA Clean & Concentrator™	50 preps.	D5201
	50 preps.	D5205
Anti-5-Methylcytosine Monoclonal Antibody (clone 10G4)	50 µg	A3001-50
	200 µg	A3001-200
METHYLTRANSFERASES		
CpG Methylase (M.SssI)	200 U	E2010
	400 U	E2011
GpC Methylase (M.CviPI)	200 U	E2014
	1000 U	E2015
DNA FRAGMENTATION		
DNA Degradase™	500 U	E2016
	2000 U	E2017
DNA Degradase Plus™	250 U	E2020
	1000 U	E2021
DNA Shearase™	50 U	E2018-50
	200 U	E2018-200
	50 U & DCC™	E2019-50
	200 U & DCC™	E2019-200
NUCLEOSOME MAPPING		
EZ Nucleosomal DNA Prep Kit	20 preps	D5220

Version 1.0.2

### Trademarks and Disclaimers:

™ Trademarks of Zymo Research Corporation.

This product is for research use only and should only be used by trained professionals. It is not intended for use in diagnostic procedures. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility.

Integrity of kit components is guaranteed for up to one year from date of purchase. Reagents are routinely tested on a lot-to-lot basis to ensure they provide maximal performance and reliability.

For Technical Assistance, please contact 1-888-882-9682 or E-mail [tech@zymoresearch.com](mailto:tech@zymoresearch.com). Satisfaction of all Zymo Research products is guaranteed. If you are not satisfied with this product please call 1-888-882-9682.

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