

# Epigenetic Research Tools



Alterations in epigenetic mechanisms such as DNA methylation and post-translational modification of histone proteins can contribute to dysregulation of gene expression and are often observed in cancer. Cayman Chemical offers an extensive collection of tools including small molecule inhibitors, chemical probes, screening libraries, assay kits, proteins, and antibodies to study the fundamental actions of epigenetic writers, erasers, and readers.

## Epigenetics Screening Library (96-Well)

Item No. 11076

- >140 compounds
- Includes modulators of methyltransferases, demethylases, HATs, HDACs, and acetylated lysine reader proteins

## SGC Probe Set

Item No. 17748

- >30 compounds from the Structural Genomics Consortium (SGC)
- Includes inhibitors/antagonists of epigenetic writers, erasers, and readers

## DNA Methylation

DNA methylation at CpG sites to form 5-methylcytosine (5mC) is catalyzed by specific DNA methyltransferases (DNMTs). Altered expression of or mutations in DNMTs can lead to dysregulation of DNA methylation patterns. Global DNA hypomethylation is related to genomic instability, DNA damage, and activation of oncogenes, whereas hypermethylation can silence tumor suppressor genes and promote malignancy.

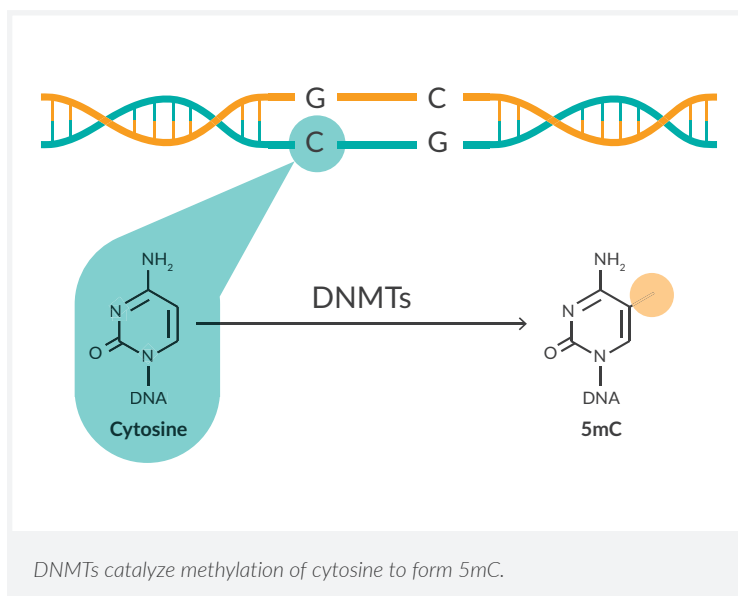
### DNMT Inhibitors

Item No.	Product Name
11164	5-Azacytidine
11166	Decitabine
9001479	Nanaomycin A
13302	RG108
11165	SGI-1027
10975	Zebularine

See all DNA methyltransferase inhibitors at [www.caymanchem.com](http://www.caymanchem.com)

### Methylated DNA Detection Tools

Item No.	Product Name
20722	Anti-5-methyl Cytosine Rabbit Monoclonal Antibody (Clone RM231)
589324	DNA Methylation ELISA Kit



### Unsure which inhibitor or probe is best for your experiment?

Download our Choosing & Using Chemical Probes guide, developed in collaboration with the SGC, at [www.caymanchem.com/chemicalprobes](http://www.caymanchem.com/chemicalprobes)

# Histone Modification

Histone proteins can be modified by processes including acetylation, methylation, phosphorylation, and citrullination. These modifications affect chromatin structure and gene expression and are frequently altered in cancer.

## Histone Proteins & Peptides

Item No.	Product Name
11010	Core Histones (human)
11080	Histone H2A Type 1 (human, recombinant)
11081	Histone H2B Type 1-A (human, recombinant)
10263	Histone H3 (human, recombinant)
10264	Histone H4 (human, recombinant)
10877	Histone H3 Peptide Substrate (1-21)
10530	Histone H3 Trimethyl Lys9 Peptide
10854	Histone H4 Peptide Substrate (1-21)
10380	Histone H4 Peptide Substrate (15-24)

See all histone proteins and peptides at [www.caymanchem.com](http://www.caymanchem.com)

## Histone Acetylation

Acetylation of lysine (K) residues on histone tails is associated with decondensation of chromatin and active transcription. It is catalyzed by histone acetyltransferases (HATs), whereas histone deacetylases (HDACs) and sirtuins (SIRT) are responsible for deacetylation. Acetylated histone lysines are recognized by “reader” proteins possessing a bromodomain (BRD) motif. Aberrant expression of HATs, HDACs/SIRTs, and BRD proteins occurs in various types of cancer, underscoring the importance of maintaining the correct balance of acetylation for cell health.

## HAT Inhibitors & Assay Kit

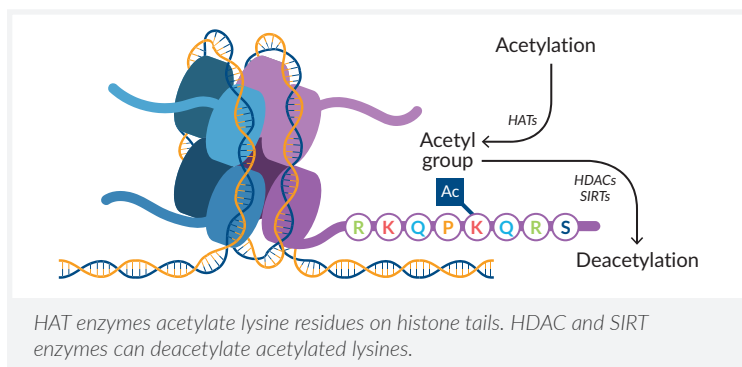
Item No.	Product Name
24119	A-485
13144	Anacardic Acid
12095	Butyrolactone 3
10549	C646
34546	CCS-1477
12086	CPTH2 (hydrochloride)
19828	CPTH6 (hydrobromide)
11012	Delphinidin (chloride)
10566	Garcinol
22135	MG149
27402	MOZ-IN-3
30509	WM-1119
10006515	HAT Inhibitor Screening Assay Kit

See all HAT inhibitors at [www.caymanchem.com](http://www.caymanchem.com)

## Histone Antibodies

Item No.	Product Name
10010567	Acetyl Lysine Monoclonal Antibody (Clone 7F8)
20724	Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188)
19824	Histone H3 Monoclonal Antibody (Clone 2B8)
13781	Histone H3 Polyclonal Antibody
32161	Histone H3K23Ac Monoclonal Antibody
32142	Histone H3K9Me2 Monoclonal Antibody (Clone RM151)
13543	Histone H4 Polyclonal Antibody
32942	Histone H4 Monoclonal Antibody
13728	Methylated Lysine Polyclonal Antibody - Biotinylated

See all histone antibodies at [www.caymanchem.com](http://www.caymanchem.com)



## Need help with your Epigenetics Research?

Cayman offers a variety of services to support your project, including:

- Protein & Antibody Production
- Proteomic & PTM Analysis
- High-throughput Screening (HTS)
- Integrated Drug Discovery

Learn more at [www.caymanchem.com/services](http://www.caymanchem.com/services)

# Histone Acetylation (cont.)

## HDAC & SIRT Inhibitors

Item No.	Product Name
10009798	(±)-EX-527
21531	ACY-1215
10575	Apicidin
13284	MS-275
13280	Panobinostat
16917	RGFP966
17130	Romidepsin
10009929	SAHA
13121	Sodium Butyrate
10496	Sulforaphane
89730	Trichostatin A

See all HDAC and SIRT inhibitors at [www.caymanchem.com](http://www.caymanchem.com)

## HDAC & SIRT Proteins

Item No.	Product Name
10009231	HDAC1 (human, recombinant)
10009232	HDAC3/NCOR2 (human, recombinant)
10009465	HDAC6 (human, recombinant)
10011190	SIRT1 (human, recombinant)
10011191	SIRT2 (human, recombinant)

See all HDAC and SIRT proteins at [www.caymanchem.com](http://www.caymanchem.com)

## HDAC & SIRT Assay Kits

Item No.	Product Name
600150	HDAC Cell-Based Activity Assay Kit
10011563	HDAC Fluorometric Activity Assay Kit
10011564	HDAC1 Inhibitor Screening Assay Kit
700230	HDAC8 Inhibitor Screening Assay Kit
10010401	SIRT1 Direct Fluorescent Screening Assay Kit
10010991	SIRT1 FRET-Based Screening Assay Kit
700280	SIRT2 Direct Fluorescent Screening Assay Kit
10011566	SIRT3 Direct Fluorescent Screening Assay Kit

## BRD Assay Kits

Item No.	Product Name
600850	CBP bromodomain TR-FRET Assay Kit
600520	BRD4 bromodomain 1 TR-FRET Assay Kit
600650	BRDT bromodomain 1 TR-FRET Assay Kit
600870	TAF1 bromodomain 1 TR-FRET Assay Kit
600930	TAF1 bromodomains 1 and 2 TR-FRET Assay Kit

## BRD Inhibitors

Item No.	Product Name
11187	(+)-JQ1
20864	AZD 5153
11181	I-BET151
17749	I-BRD9
14468	I-CBP112 (hydrochloride)
18316	NVS-CECR2-1
15267	PFI-3
16424	RVX-208
14469	SGC-CBP30
20030	TP-472

See all bromodomain inhibitors at [www.caymanchem.com](http://www.caymanchem.com)

### Featured Product

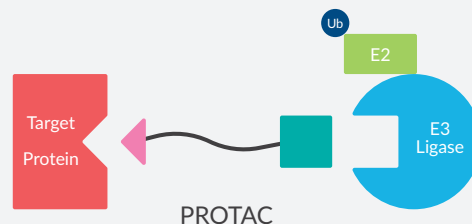
#### Bromodomain Inhibitor Set

Item No. 28315

- ~35 selective and non-selective bromodomain inhibitors and negative controls curated from Chemical Probe data supplied by the SGC
- Targets include members of the BET and BRPF families, CBP/CREBBP and p300, BRD9 and BRD7, and TAF1

### BRD PROTACs

Proteolysis-targeting chimeras (PROTACs) simultaneously bind to a target protein and an E3 ubiquitin ligase, resulting in ubiquitination and proteasomal degradation of the target.



Item No.	Product Name
18044	dBET1
21109	ARV-825
21622	MZ1

See all BRD PROTACs at [www.caymanchem.com](http://www.caymanchem.com)

# Histone Methylation

Histone methylation can result in either activation or repression of gene expression, depending on factors including the specific residue that is methylated and the number of methyl groups added. Histones can be methylated on either lysine (K) or arginine (R) residues by lysine methyltransferase (KMT) and protein arginine methyltransferase (PRMT) “writers”, respectively. Methyl groups can be removed from lysines by demethylase “erasers”. The enzyme peptidyl arginine deiminase 4 (PAD4) can convert monomethylated or unmodified arginine to citrulline, thereby removing or preventing addition of a methyl group, respectively, at these residues. Methylated residues are recognized by “readers” that possess chromodomains, WD40 repeats, malignant brain tumor (MBT) domains, Tudor domains, and plant homeodomain (PHD) finger motifs.

## Histone Methyltransferase Inhibitors

### KMT Inhibitors

Item No.	Product Name
13828	3-Deazaneplanocin A
13124	BIX01294 (hydrochloride hydrate)
13156	Chaetocin
16175	EPZ5676
16174	EPZ6438
15415	GSK126
13967	SGC0946
14604	UNC0642
14621	UNC1999

### PRMT Inhibitors

Item No.	Product Name
17285	EPZ015666
29954	EZM2302
18361	MS023 (hydrochloride)
20256	TP-064

See all histone methyltransferase inhibitors online at [www.caymanchem.com](http://www.caymanchem.com)

## Histone Methyltransferase Assay Kits

Item No.	Product Name
600570	GLP SAM-Screener™ Assay Kit
700140	Methyltransferase Colorimetric Assay Kit
700150	Methyltransferase Fluorometric Assay Kit
600580	MLL1 SAM-Screener™ Assay Kit
700270	SET7/9 Methyltransferase Inhibitor Screening Assay Kit
600490	SET7/9 SAM-Screener™ Assay Kit
700350	SET8 Methyltransferase Inhibitor Screening Assay Kit

## Lysine Demethylase Inhibitors & Assay Kit

Item No.	Product Name
22127	CPI-455
12073	GSK-J4 (hydrochloride)
16439	GSK-LSD1 (hydrochloride)
11572	IOX1
15338	JIB-04
13944	N-Oxalylglycine
19136	ORY-1001
18124	RN-1 (hydrochloride)
15487	SP2509
700120	LSD1 Inhibitor Screening Assay Kit

See all histone lysine demethylase inhibitors online at [www.caymanchem.com](http://www.caymanchem.com)

## PAD4 Inhibitors & Assay Kits

Item No.	Product Name
33581	BMS-P5
17489	GSK199 (hydrochloride)
17488	GSK484 (hydrochloride)
22484	TDFA (trifluoroacetate salt)
701320	PAD4 Inhibitor Screening Assay Kit (AMC)
700560	PAD4 Inhibitor Screening Assay Kit (Ammonia)

See all PAD4 inhibitors at [www.caymanchem.com](http://www.caymanchem.com)

## Methyl Reader Inhibitors

Item No.	Product Name
17533	MS37452
13968	UNC1215
19237	UNC3866
10875	UNC669

See all methyl reader inhibitors at [www.caymanchem.com](http://www.caymanchem.com)

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