Association of UHRF1 with H3K9 methylation directs the maintenance of DNA methylation

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SUPPLEMENTARY INFORMATION

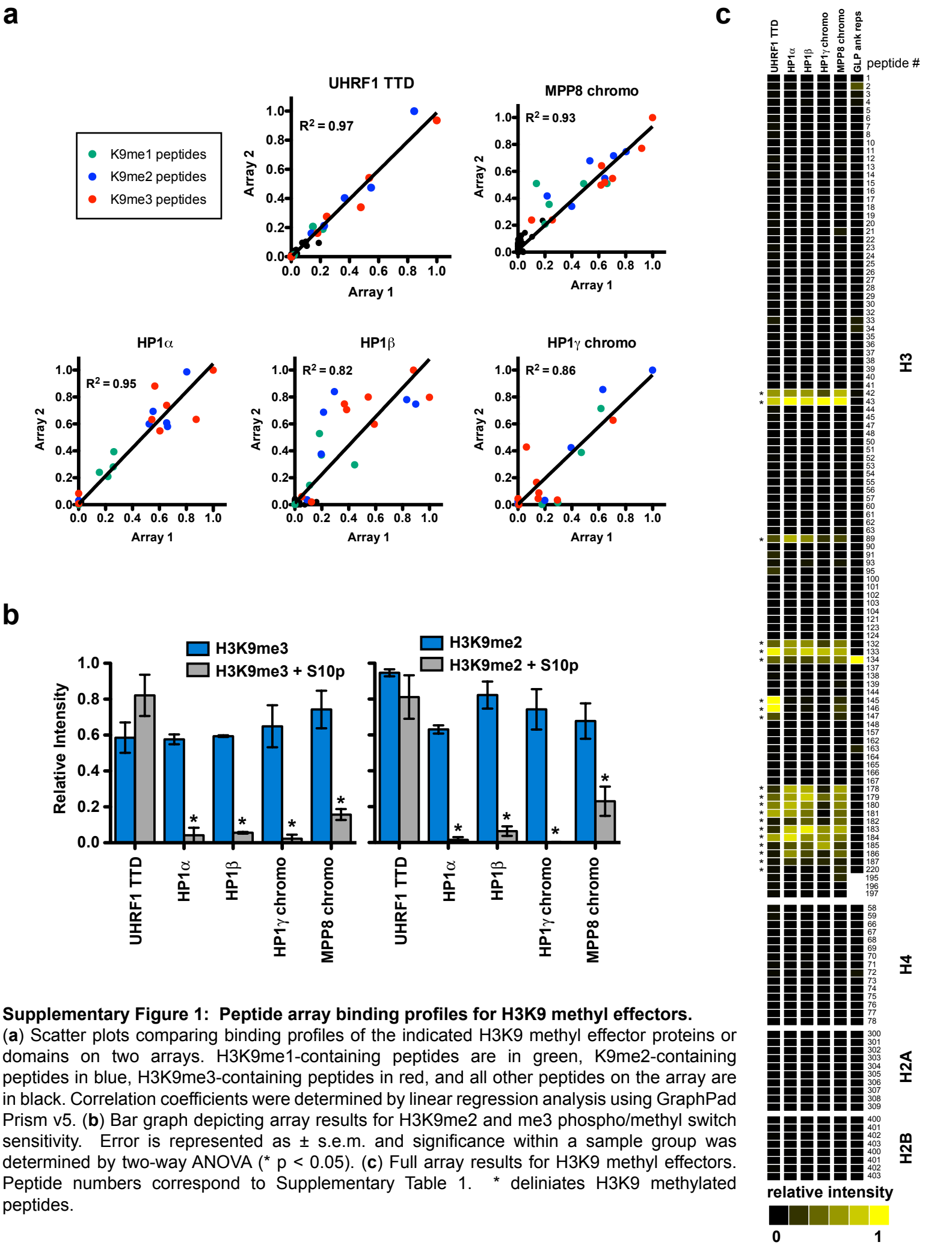
Supplementary Figure 1 – Peptide array binding profiles for H3K9 methyl effectors.

Supplementary Figure 2 – Cell synchronization, antibody characterization, and validation of UHRF1 knockdown.

Supplementary Figure 3 – Nucleotide sequence of the IGS-rDNA locus amplicon for bisulfite sequencing.

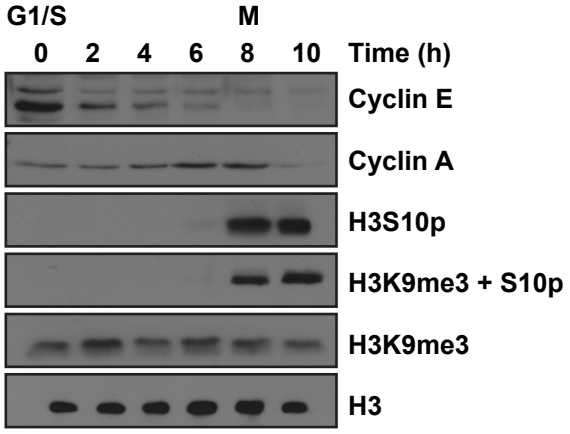
Supplementary Figure 4 – DNMT1 stability is dependent on mitotic binding of UHRF1 to H3K9 methylation and is independent of ubiquitin ligase function.

Supplementary Table 1 – List of Peptides

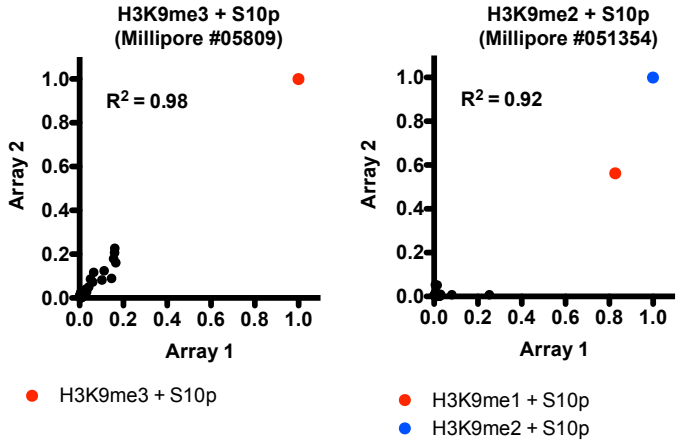


Supplementary Figure 1: Peptide array binding profiles for H3K9 methyl effectors. (**a**) Scatter plots comparing binding profiles of the indicated H3K9 methyl effector proteins or domains on two arrays. H3K9me1-containing peptides are in green, K9me2-containing peptides in blue, H3K9me3-containing peptides in red, and all other peptides on the array are in black. Correlation coefficients were determined by linear regression analysis using GraphPad Prism v5. (**b**) Bar graph depicting array results for H3K9me2 and me3 phospho/methyl switch sensitivity. Error is represented as ± s.e.m. and significance within a sample group was determined by two-way ANOVA (* $p < 0.05$). (**c**) Full array results for H3K9 methyl effectors. Peptide numbers correspond to Supplementary Table 1. * deliniates H3K9 methylated peptides.

a



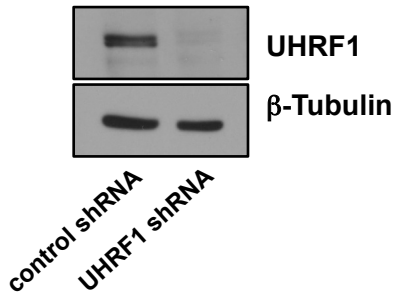
b



c

shRNA	TRC clone name	TRC clone ID	Target sequence	Region
control	promegaLuc_221s1c1	TRCN0000072246	CAAATCACAGAATCGTCGTAT	3' UTR
UHRF1	NM_013282.3-3485s21c1	TRCN0000273256	GCCTTTGATTCGTTCCTTCTT	3' UTR

d



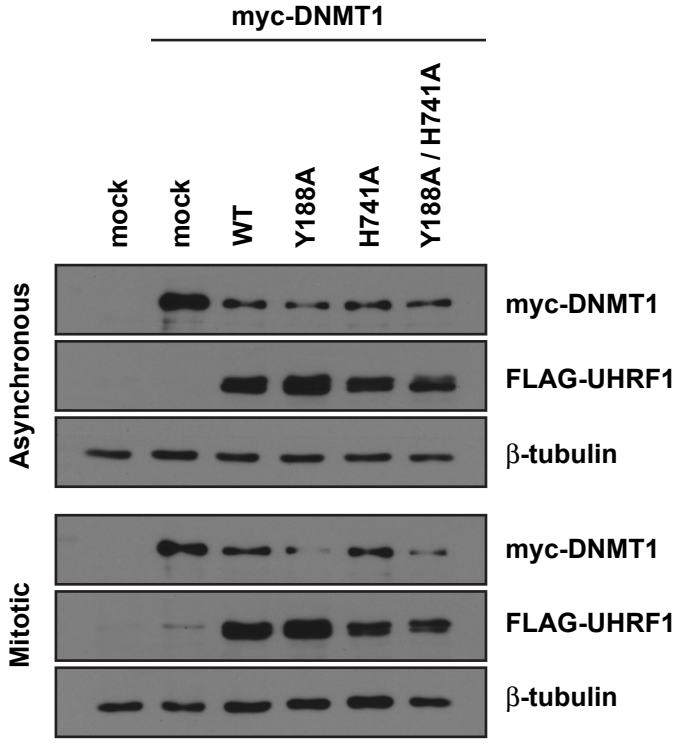
Supplementary Figure 2: Cell synchronization, antibody characterization, and validation of UHRF1 knockdown. (**a**) Western blot analysis of whole-cell protein extracts from HeLa cells at the indicated time points following release from double thymidine block. (**b**) Scatter plots comparing binding profiles of the indicated dual histone PTM antibodies on two arrays. Correlation coefficients were determined by linear regression analysis using GraphPad Prism v5. (**c**) shRNA clone information. (**d**) Western blot validating shRNA knockdown of UHRF1 in HeLa cells.

Intergenic Spacer of the rDNA locus (IGS-rDNA):

GenBank: U13369.1

225 **GAGGGGCATTTTCAGACTTTTCTCT**CGGTCACGTGTGGCGT
CCGTACTTCTCCTATTTCCCCGATAAGTCTCCTCGACTTCAACATAAACTGTTAAGGCCG
GACGCCAACACGGCGAAACCCCGTCTCTACTAAAAATACAAAGCTGAGTCGGGAGCGGTG
GGGCAGGCCCTGTAATGCCAGCTCCTCGGGAGGCTGAGGCGGGAGAATCGCTTGAACCAG
GGAAGCGGAGGCTGCAGGGAGCCGAGATCGCGCCACTGCACTACG**GCCCAGGCTGTAGAG**
TGAGTGAGA

Supplementary Figure 3: Nucleotide sequence of the IGS-rDNA locus amplicon for bisulfite sequencing. CpG dinucleotides are highlighted in red, and annealing sites for sense and antisense primers are in bold.



Supplementary Figure 4: DNMT1 stability is dependent on mitotic binding of UHRF1 to H3K9 methylation and is independent of ubiquitin ligase function. Western blot on UHRF1 KD HeLa soluble protein extracts transfected with DNMT1 and the indicated UHRF1 construct for 48 hours. DMSO (asynchronous) or nocodazole (mitotic) was added as described in Methods.

Supplementary Table 1. List of Peptides

Peptide #		Sequence	annotation
1	H3 1-20	ARTKQTARKSTGGKAPRKQL-K(Biot)-NH_2	H3 (1-20)
2	H3 1-20	ARTKQTARKSTGGK(Ac)APRKQL-K(Biot)-NH_2	H3K14ac
3	H3 1-20	ARTKQTARK(Ac)STGGKAPRKQL-K(Biot)-NH_2	H3K9ac
4	H3 1-20	ARTK(Ac)QTARKSTGGKAPRKQL-K(Biot)-NH_2	H3K4ac
5	H3 1-20	ARTK(Ac)QTARKSTGGK(Ac)APRKQL-K(Biot)-NH_2	H3K4ac + K14ac
6	H3 1-20	ARTKQTARK(Ac)STGGK(Ac)APRKQL-K(Biot)-NH_2	H3K9ac + K14ac
7	H3 1-20	ARTK(Ac)QTARK(Ac)STGGKAPRKQL-K(Biot)-NH_2	H3K4ac + K9ac
8	H3 1-20	ARTK(Ac)QTARK(Ac)STGGK(Ac)APRKQL-K(Biot)-NH_2	H3K4ac + K9ac + K14ac
10	H3 1-20	ARTKQTARKSTGGKAPRK(Ac)QL-K(Biot)-NH_2	H3K18ac
11	H3 1-20	ARTKQTARKSTGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K14ac + K18ac
12	H3 1-20	ARTKQTARK(Ac)STGGKAPRK(Ac)QL-K(Biot)-NH_2	H3K9ac + K18ac
13	H3 1-20	ARTK(Ac)QTARKSTGGKAPRK(Ac)QL-K(Biot)-NH_2	H3K4ac + K18ac
14	H3 1-20	ARTKQTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K9ac + K14ac + K18ac
15	H3 1-20	ARTK(Ac)QTARKSTGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4ac + K14ac + K18ac
16	H3 1-20	ARTK(Ac)QTARK(Ac)STGGKAPRK(Ac)QL-K(Biot)-NH_2	H3K4ac + K9ac + K18ac
17	H3 1-20	ARTK(Ac)QTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4ac + K9ac + K14ac + K18ac
18	H3 1-20	ARTK(Me$_3$)QTARKSTGGKAPRKQL-K(Biot)-NH_2	H3K4me3
19	H3 1-20	ARTK(Me$_3$)QTARK(Ac)STGGKAPRKQL-K(Biot)-NH_2	H3K4me3 + K9ac
20	H3 1-20	ARTK(Me$_3$)QTARKSTGGK(Ac)APRKQL-K(Biot)-NH_2	H3K4me3 + K14ac
21	H3 1-20	ARTK(Me$_3$)QTARKSTGGKAPRK(Ac)QL-K(Biot)-NH_2	H3K4me3 + K18ac
22	H3 1-20	ARTK(Me$_3$)QTARK(Ac)STGGK(Ac)APRKQL-K(Biot)-NH_2	H3K4me3 + K9ac + K14ac
23	H3 1-20	ARTK(Me$_3$)QTARK(Ac)STGGKAPRK(Ac)QL-K(Biot)-NH_2	H3K4me3 + K9ac + K18ac
24	H3 1-20	ARTK(Me$_3$)QTARKSTGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4me3 + K14ac + K18ac
25	H3 1-20	ARTK(Me$_3$)QTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4me3 + K9ac + K14ac + K18ac
26	H3 1-20	ARpTK(Me$_3$)QTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3T3p + K4me3 + K9ac + K14ac + K18ac
27	H3 1-20	ARpTK(Me$_3$)QTARKSTGGKAPRKQL-K(Biot)-NH_2	H3T3p + K4me3
28	H3 1-20	AR(Me$_2$a)pTK(Me$_3$)QTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3R2me2a + T3p + K4me3 + K9ac + K14ac + K18ac
29	H3 1-20	AR(Me$_2$a)pTK(Me$_3$)QTARKSTGGKAPRKQL-K(Biot)-NH_2	H3R2me2a + T3p + K4me3
30	H3 1-20	AR(Me$_2$a)TK(Me$_3$)QTARKSTGGKAPRKQL-K(Biot)-NH_2	H3R2me2a + K4me3
32	H3 1-20	ARTK(Me$_2$)QTARKSTGGKAPRKQL-K(Biot)-NH_2	H3K4me2
33	H3 1-20	ARTK(Me$_2$)QTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4me2 + K9ac + K14ac + K18ac
34	H3 1-20	ARTK(Me)Q TARKSTGGKAPRKQL-K(Biot)-NH_2	H3K4me1
35	H3 1-20	ARTK(Me)QTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4me1 + K9ac + K14ac + K18ac
36	H3 1-20	ARTKQTARKpSTGGKAPRKQL-K(Biot)-NH_2	H3S10p
37	H3 1-20	ARTK(Ac)QTARK(Ac)pSTGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4ac + K9ac + S10p + K14ac + K18ac
38	H3 1-20	ARTK(Me$_3$)QTARKpSTGGKAPRKQL-K(Biot)-NH_2	H3K4me3 + S10p
39	H3 1-20	ARTK(Me$_3$)QTARK(Ac)pSTGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4me3 + K9ac + S10p + K14ac + K18ac
40	H3 1-20	AR(Me$_2$a)TK(Me$_3$)QTARKpSTGGKAPRKQL-K(Biot)-NH_2	H3R2me2a + K4me3 + S10p
41	H3 1-20	AR(Me$_2$a)TK(Me$_3$)QTARK(Ac)pSTGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3R2me2a + K4me3 + K9ac + S10p + K14ac + K18ac
42	H3 1-20	ARTKQTARK(Me$_3$)STGGKAPRKQL-K(Biot)-NH_2	H3K9me3
43	H3 1-20	ARTK(Ac)QTARK(Me$_3$)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	H3K4ac + K9me3 + K14ac + K18ac
44	H3 1-20	ARTK(Me$_2$)QTARK(Ac)STGGKAPRK(Ac)QL-K(Biot)-NH_2	H3K4me2 + K9ac + K18ac

45	**H3 1-20**	ART**K(Me)**QTAR**K(Ac)**S**T**GG**K**APR**K(Ac)**QL-K(Biot)-NH_2	**H3K4me1 + K9ac + K18ac**
47	**H3 1-20**	A**R(Me$_2$a)**T**K**QTAR**KS**T**GG**K**APR**K**QL-K(Biot)-NH_2	**H3R2me2a**
48	**H3 1-20**	A**R(Me$_2$a)**T**K(Ac)**QTAR**K(Ac)**S**T**GG**K(Ac)**APR**K(Ac)**QL-K(Biot)-NH_2	**H3R2me2a + K4ac + K9ac + K14ac + K18ac**
50	**H3 1-20**	A**R(Me$_2$a)**T**K(Me$_3$)**QTAR**K(Ac)**S**T**GG**K(Ac)**APR**K(Ac)**QL-K(Biot)-NH_2	**H3R2me2a + K4me3 + K9ac + K14ac + K18ac**
51	**H3 1-20**	A**R(Me)**T**K(Me$_3$)**QTAR**KS**T**GG**K**APR**K**QL-K(Biot)-NH_2	**H3R2me1 + K4me3**
52	**H3 1-20**	A**R(Me)**T**K(Me$_3$)**QTAR**K(Ac)**S**T**GG**K(Ac)**APR**K(Ac)**QL-K(Biot)-NH_2	**H3R2me1 + K4me3 + K9ac + K14ac + K18ac**
53	**H3 1-20**	A**Cit**T**K**QTAR**KS**T**GG**K**APR**K**QL-K(Biot)-NH_2	**H3Cit2**
54	**H3 1-20**	A**Cit**T**K(Me$_3$)**QTAR**KS**T**GG**K**APR**K**QL-K(Biot)-NH_2	**H3Cit2 + K4me3**
55	**H3 1-20**	A**Cit**T**K(Me$_3$)**QTAR**K(Ac)**S**T**GG**K(Ac)**APR**K(Ac)**QL-K(Biot)-NH_2	**H3Cit2 + K4me3 + K9ac + K14ac + K18ac**
56	**H3 1-20**	A**Cit**T**K(Ac)**QTAR**K(Ac)**S**T**GG**K(Ac)**APR**K(Ac)**QL-K(Biot)-NH_2	**H3Cit2 + K4ac + K9ac + K14ac + K18ac**
57	**H3 1-20**	AR**pT**KQTAR**KS**T**GG**K**APR**K**QL-**Peg**-K(Biot)-NH_2	**H3T3p**
58	**H4 1-23**	**Ac-S**G**R**G**K**GG**K**GLG**K**GGA**K**RHR**K**VLR-Peg-Biot	**H4 (1-23)**
59	**H4 1-23**	**Ac-S**G**R**G**K(Ac)**GG**K(Ac)**GLG**K(Ac)**GGA**K(Ac)**RHR**K**VLR-Peg-Biot	**H4K5ac + K8ac + K12ac + K16ac**
60	**H3 1-20**	A**R(Me$_2$a)**T**K(Me$_2$)**QTARK**ST**GG**K**APR**K**QL-K(Biot)-NH_2	**H3R2me2a + K4me2**
61	**H3 1-20**	A**R(Me$_2$s)**T**K(Me$_2$)**QTARK**ST**GG**K**APR**K**QL-K(Biot)-NH_2	**H3R2me2s + K4me2**
62	**H3 1-20**	A**R(Me)**T**K(Me$_2$)**QTARK**ST**GG**K**APR**K**QL-K(Biot)-NH_2	**H3R2me1 + K4me2**
63	**H3 1-20**	A**Cit**T**K(Me$_2$)**QTARK**ST**GG**K**APR**K**QL-K(Biot)-NH_2	**H3Cit2 + K4me2**
66	**H4 1-23**	**Ac-S**G**R**G**K(Ac)**GG**K**GLG**K**GGA**K**RHR**K**VLR-Peg-Biot	**H4K5ac**
67	**H4 1-23**	**Ac-S**G**R**G**K**GG**K(Ac)**GLG**K**GGA**K**RHR**K**VLR-Peg-Biot	**H4K8ac**
68	**H4 1-23**	**Ac-S**G**R**G**K**GG**K**GLG**K(Ac)**GGA**K**RHR**K**VLR-Peg-Biot	**H4K12ac**
69	**H4 1-23**	**Ac-S**G**R**G**K**GG**K**GLG**K**GGA**K(Ac)**RHR**K**VLR-Peg-Biot	**H4K16ac**
70	**H4 1-23**	**Ac-S**G**R**G**K(Ac)**GG**K**GLG**K(Ac)**GGA**K**RHR**K**VLR-Peg-Biot	**H4K5ac + K12ac**
71	**H4 1-23**	**Ac-S**G**R**G**K**GG**K(Ac)**GLG**K**GGA**K(Ac)**RHR**K**VLR-Peg-Biot	**H4K8ac + K16ac**
72	**H4 1-23**	**Ac-S**G**R**G**K(Ac)**GG**K(Ac)**GLG**K(Ac)**GGA**K**RHR**K**VLR-Peg-Biot	**H4K5ac + K8ac + K12ac**
73	**H4 1-23**	**Ac-S**G**R(Me$_2$a)**G**K**GG**K**GLG**K**GGA**K**RHR**K**VLR-K(Biot)-NH_2	**H4R3me2a**
74	**H4 1-23**	**Ac-S**G**R(Me$_2$s)**G**K**GG**K**GLG**K**GGA**K**RHR**K**VLR-K(Biot)-NH_2	**H4R3me2s**
75	**H4 1-23**	**Ac-S**G**R(Me)**G**K**GG**K**GLG**K**GGA**K**RHR**K**VLR-K(Biot)-NH_2	**H4R3me1**
76	**H4 1-23**	**Ac-pS**G**R(Me$_2$a)**G**K**GG**K**GLG**K**GGA**K**RHR**K**VLR-K(Biot)-NH_2	**H4S1p + R3me2a**
77	**H4 1-23**	**Ac-pS**G**R(Me$_2$s)**G**K**GG**K**GLG**K**GGA**K**RHR**K**VLR-K(Biot)-NH_2	**H4S1p + R3me2s**
78	**H4 1-23**	**Ac-pS**G**R(Me)**G**K**GG**K**GLG**K**GGA**K**RHR**K**VLR-K(Biot)-NH_2	**H4S1p + R3me1**
89	**H3 1-20**	ART**K(Me$_3$)**QTA**R(Me$_2$s)K(Me$_3$)**ST**GG**K**APR**K**QL-K(Biot)-NH_2	**H3K4me3 + R8me2s + K9me3**
90	**H3 15-43**	**Ac-**APR**K**QLAT**K**AAR**K**SAPSTGGV**KK**PHRYGGK(Biot)-NH_2	**H3 (15-41)**
91	**H3 15-43**	**Ac-**APR**K(Me$_3$)**QLAT**K**AAR**K**SAPSTGGV**KK**PHRY-GG-K(Biot)-NH_2	**H3K18me3**
93	**H3 15-43**	**Ac-**APR**K**QLAT**K**AAR**K**SAPSTGGV**K(Me$_3$)K**PHRY-GG-K(Biot)-NH_2	**H3K36me3**
95	**H3 15-43**	**Ac-**APR**K(Me$_3$)**QLAT**K**AAR**K**SAPSTGGV**K(Me$_3$)K**PHRY-GG-K(Biot)-NH_2	**H3K18me3 + K36me3**
100	**H3 74-84**	**Ac-**IAQDF**K**TDLRF**-Peg-**K(Biot)-NH_2	**H3 (74-84) N-ac**
101	**H3 74-84**	**Ac-**IAQDF**K(Me$_3$)**TDLRF**-Peg-**K(Biot)-NH_2	**H3K79me3**
102	**H3 74-84**	**Ac-**IAQDF**K(Me$_2$)**TDLRF**-Peg-**K(Biot)-NH_2	**H3K79me2**
103	**H3 74-84**	**Ac-**IAQDF**K(Me)**TDLRF**-Peg-**K(Biot)-NH_2	**H3K79me1**
104	**H3 74-84**	IAQDF**K**TDLRF**-Peg-**K(Biot)-NH_2	**H3 (74-84)**
121	**H3 27-45**	**K**SAPSTGGV**K(Me$_2$)K**PHRYKPGT-GG-K(Biot)-NH_2	**H3K36me2**
123	**H3 27-45**	**K**SAPSTGGV**K(Ac)K**PHRYKPGT-GG-K(Biot)-NH_2	**H3K36ac**
124	**H3 27-45**	**K**SAPSTGGV**KK**PHRYKPGT-GG-K(Biot)-NH_2	**H3 (27-45)**
132	**H3 1-20**	ART**K(Me$_3$)**QTAR**K(Me$_3$)**S**T**GG**K**APR**K**QL-K(Biot)-NH_2	**H3K4me3 + K9me3**
133	**H3 1-20**	ART**K**QTAR**K(Me$_2$)**S**T**GG**K**APR**K**QL-K(Biot)-NH_2	**H3K9me2**
134	**H3 1-20**	ART**K**QTAR**K(Me)**S**T**GG**K**APR**K**QL-K(Biot)-NH_2	**H3K9me1**
137	**H3 1-20**	ART**K**QTAR**KS**T**GG**K**APR**K(Me$_3$)**QL-K(Biot)-NH_2	**H3K18me3**
138	**H3 1-20**	ART**K**QTAR**KS**T**GG**K**APR**K(Me$_2$)**QL-K(Biot)-NH_2	**H3K18me2**

139	**H3 1-20**	ARTKQTARKSTGGKAPRK(Me)QL-K(Biot)-NH_2	**H3K18me1**
144	**H3 1-20**	ARTKQTARK(Ac)pSTGGKAPRKQL-K(Biot)-NH_2	**H3K9ac + S10p**
145	**H3 1-20**	ARTKQTARK(Me_3)pSTGGKAPRKQL-K(Biot)-NH_2	**H3K9me3 + S10p**
146	**H3 1-20**	ARTKQTARK(Me_2)pSTGGKAPRKQL-K(Biot)-NH_2	**H3K9me2 + S10p**
147	**H3 1-20**	ARTKQTARK(Me)pSTGGKAPRKQL-K(Biot)-NH_2	**H3K9me1 + S10p**
148	**H3 1-20**	ARTK(Me_3)QTARK(Ac)pSTGGKAPRKQL-K(Biot)-NH_2	**H3K4me3 + K9ac + S10p**
157	**H3 1-20**	AR(Me_2s)TK(Me_3)QTARKSTGGKAPRKQL-K(Biot)-NH_2	**H3R2me2s + K4me3**
162	**H3 1-20**	ARTKQpTARKSTGGKAPRKQL-K(Biot)-NH_2	**H3T6p**
163	**H3 1-20**	ARTK(Me_3)QpTARKSTGGKAPRKQL-K(Biot)-NH_2	**H3K4me3 + T6p**
164	**H3 1-20**	ARTK(Me_2)QpTARKSTGGKAPRKQL-K(Biot)-NH_2	**H3K4me2 + T6p**
165	**H3 1-20**	ARTKQpTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	**H3T6p + K9ac + K14ac + K18ac**
166	**H3 1-20**	ARTK(Me_3)QpTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	**H3K4me3 + T6p + K9ac + K14ac + K18ac**
167	**H3 1-20**	ARTK(Me_2)QpTARK(Ac)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	**H3K4me2 + T6p + K9ac + K14ac + K18ac**
178	**H3 1-20**	ARTKQTAR(Me)K(Me_3)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me1 + K9me3**
179	**H3 1-20**	ARTKQTAR(Me)K(Me_2)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me1 + K9me2**
180	**H3 1-20**	ARTKQTAR(Me_2a)K(Me_3)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me2a + K9me3**
181	**H3 1-20**	ARTKQTAR(Me_2a)K(Me_2)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me2a + K9me2**
182	**H3 1-20**	ARTKQTAR(Me_2a)K(Me)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me2a + K9me1**
183	**H3 1-20**	ARTKQTAR(Me_2s)K(Me_3)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me2s + K9me3**
184	**H3 1-20**	ARTKQTAR(Me_2s)K(Me_2)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me2s + K9me2**
185	**H3 1-20**	ARTKQTAR(Me_2s)K(Me)STGGKAPRKQL-K(Biot)-NH_2	**H3R8me2s + K9me1**
186	**H3 1-20**	ARTK(Ac)QTARK(Me_2)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	**H3K4ac + K9me2 + K14ac + K18ac**
187	**H3 1-20**	ARTK(Ac)QTARK(Me)STGGK(Ac)APRK(Ac)QL-K(Biot)-NH_2	**H3K4ac + K9me1 + K14ac + K18ac**
195	**H3 15-34**	Ac-APRKQLATKAARK(Me_3)SAPSTGG-Peg-Biot	**H3K27me3**
196	**H3 15-34**	Ac-APRKQLATKAARK(Me_2)SAPSTGG-Peg-Biot	**H3K27me2**
197	**H3 15-34**	Ac-APRKQLATKAARK(Me)SAPSTGG--Peg-Biot	**H3K27me1**
220	**H3 1-20**	ARTKQpTARK(Me_3)STGGKAPRKQL-K(Biot)-NH_2	**H3T6p + K9me3**
300	**H2A 1-17**	Ac-SGRGKQGGKARAKAKTR-Peg-Biot	**H2A (1-17)**
301	**H2A 1-17**	Ac-SGRGK(Ac)QGGK(Ac)ARAK(Ac)AK(Ac)TR-Peg-Biot	**H2AK5ac + K9ac + K13ac + K15ac**
302	**H2A 1-17**	Ac-SGRGK(Ac)QGGKARAKAKTR-Peg-Biot	**H2AK5ac**
303	**H2A 1-17**	Ac-pSGRGK(Ac)QGGKARAKAKTR-Peg-Biot	**H2AS1p + K5ac**
304	**H2A 1-17**	Ac-SGR(Me_2a)GK(Ac)QGGKARAKAKTR-Peg-Biot	**H2AR3me2a + K5ac**
305	**H2A 1-17**	Ac-pSGR(Me_2a)GK(Ac)QGGKARAKAKTR-Peg-Biot	**H2AS1p + R3me2a + K5ac**
306	**H2A 1-17**	Ac-SGCitGK(Ac)QGGKARAKAKTR-Peg-Biot	**H2ACit3 + K5ac**
307	**H2A 1-17**	Ac-pSGCitGK(Ac)QGGKARAKAKTR-Peg-Biot	**H2AS1p + Cit3 + K5ac**
308	**H2A 1-17**	Ac-pSGRGK(Ac)QGGK(Ac)ARAK(Ac)AK(Ac)TR-Peg-Biot	**H2AS1p + K5ac + K9ac + K13ac + K15ac**
309	**H2A 1-17**	SGRGK(Ac)QGGK(Ac)ARAK(Ac)AK(Ac)TR-Peg-Biot	**H2AK5ac + K9ac + K13ac + K15ac (no N-ac)**
400	**H2B 1-24**	PEPAKSAPAPKKGSKKAVTKAQKK**-Peg-Biot**	**H2B (1-24)**
401	**H2B 1-24**	PEPAK(Me_3)SAPAPKKGSKKAVTKAQKK**-Peg-Biot**	**H2BK5me3**
402	**H2B 1-24**	PEPAK(Me_2)SAPAPKKGSKKAVTKAQKK**-Peg-Biot**	**H2BK5me2**
403	**H2B 1-24**	PEPAK(Me)SAPAPKKGSKKAVTKAQKK**-Peg-Biot**	**H2BK5me1**