

Supporting Information

YEATS Domains as Novel Epigenetic Readers: Structures, Functions, and Inhibitor Development

Xin Li,^{1,2,*} Sha Liu,¹ Xiang Li,¹ and Xiang David Li^{1,*}

¹Departments of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong, China

²Greater Bay Biomedical Innocenter, Shenzhen Bay Laboratory, Shenzhen 518055, China

*To whom correspondence may be addressed.

Email: xiangli@hku.hk; lixin@szbl.ac.cn

Table S1. Summary of the information on the YEATS domain crystal structures.

Entry	Protein	Ligand	PDB code	Resolution (Å)	Method	Ref.	Note
1	AF9 YEATS (1-138)	H3 ₁₋₁₉ K9bu	6MIL	1.93 Å	X-RAY DIFFRACTION	(2018) Nat Commun 9: 4574-4574	
2	AF9 YEATS (1-138)	H3 ₁₋₂₅ K18cr	5HJD	2.81 Å	X-RAY DIFFRACTION	(2016) Mol Cell 62: 181-193	
3	AF9 YEATS (1-138)	H3 ₁₋₁₅ K9cr	5HJB	2.70 Å	X-RAY DIFFRACTION	(2016) Mol Cell 62: 181-193	
4	AF9 YEATS (2-138)	H3 ₂₋₁₆ K9bz	6LS6	2.20 Å	X-RAY DIFFRACTION	(2021) Nucleic Acids Res 49: 114-126	
5	AF9 YEATS (1-138)	H3 ₁₂₋₂₄ K18cr	2NDG	-	SOLUTION NMR	(2016) Structure 24: 1606-1612	
6	AF9 YEATS (1-138)	H3 ₁₂₋₂₄ K18ac	2NDF	-	SOLUTION NMR	(2016) Structure 24: 1606-1612	
7	AF9 YEATS (1-138)	H3 ₁₋₁₀ K9ac	4TMP	2.30 Å	X-RAY DIFFRACTION	(2014) Cell 159: 558-571	

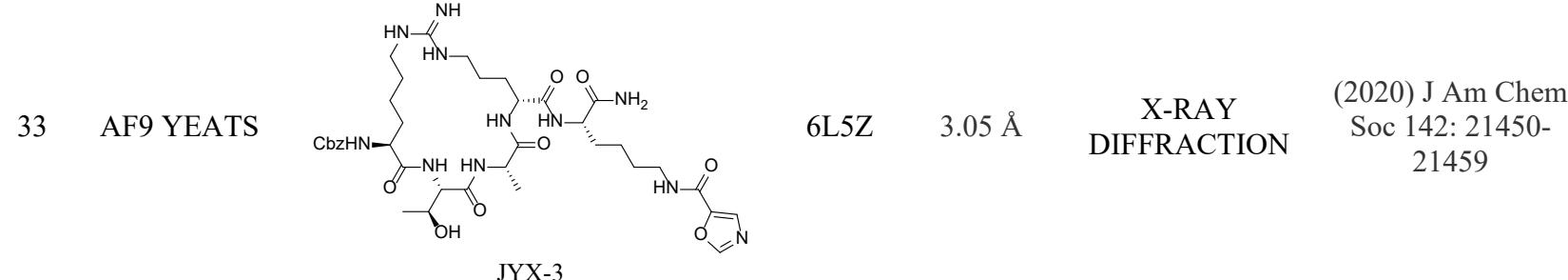
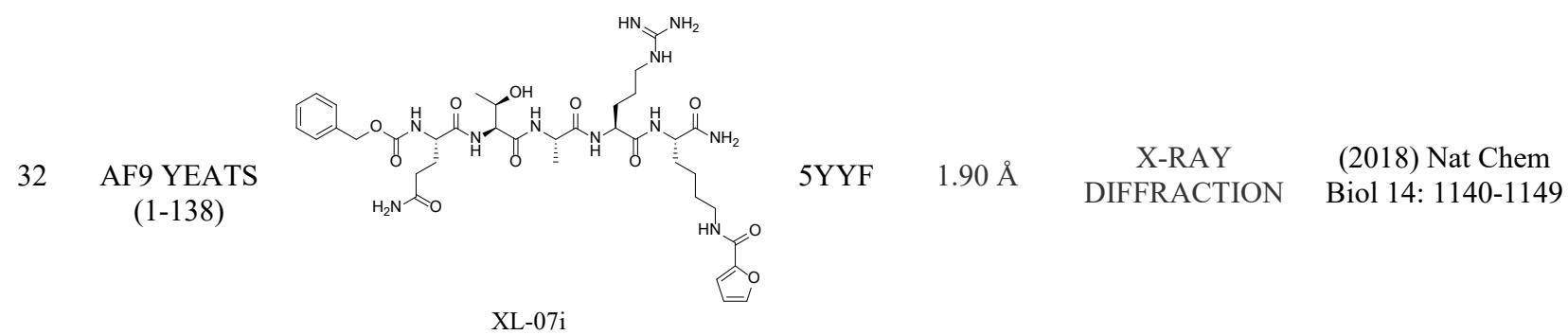
8	AF9 YEATS (1-138) (Y78W)	H3 ₅₋₁₄ K9cr	6MIM	2.52 Å	X-RAY DIFFRACTION	(2018) Nat Commun 9: 4574- 4574
9	ENL YEATS (1-148)	-	6HQ0	1.81 Å	X-RAY DIFFRACTION	(2018) J Med Chem 61: 10929-10934
10	ENL YEATS (1-148)	H3 ₁₅₋₃₉ K27ac	5J9S	2.70 Å	X-RAY DIFFRACTION	(2017) Nature 543: 265-269
11	ENL YEATS domain T3 mutant	H3K27ac	7E74	2.90 Å	X-RAY DIFFRACTION	To be published.
12	ENL YEATS domain T3 mutant	-	7E7A	2.64 Å	X-RAY DIFFRACTION	To be published.
13	YEATS2 YEATS (201- 332)	H3 ₂₄₋₃₁ K27ac	5XNV	2.70 Å	X-RAY DIFFRACTION	(2017) Nat Commun 8: 1088- 1088

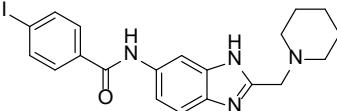
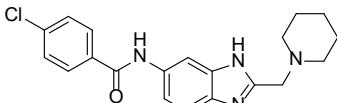
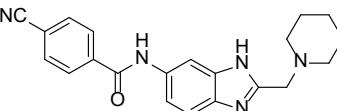
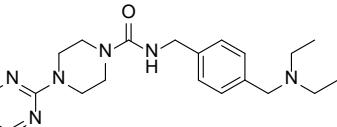
14	YEATS2 YEATS (201-332)	H3 ₂₄₋₃₁ K27bz	6LSD	2.05 Å	X-RAY DIFFRACTION	(2021) Nucleic Acids Res 49: 114-126
15	YEATS2 YEATS (201-332)	H3 ₂₄₋₃₁ K27cr	5IQL	2.10 Å	X-RAY DIFFRACTION	(2016) Cell Res 26: 629-632
16	GAS41 YEATS (1-148)	-	5VNA	2.10 Å	X-RAY DIFFRACTION	(2018) ACS Chem Biol 13: 2739-2746
17	GAS41 YEATS (22-160)	-	5Y8V	2.61 Å	X-RAY DIFFRACTION	(2018) Proc Natl Acad Sci U S A 115: 2365-2370
18	GAS41 YEATS (15-159)	H3 ₁₅₋₃₉ K27ac	5XTZ	2.10 Å	X-RAY DIFFRACTION	(2018) Cell Discov 4: 28-28
19	GAS41 YEATS (1-148)	histone H3	5VNB	2.40 Å	X-RAY DIFFRACTION	(2018) ACS Chem Biol 13: 2739-2746
20	Yaf9 YEATS	-	3RLS	1.70 Å	X-RAY DIFFRACTION	To be published.
21	Yaf9 YEATS (8-171)	-	3FK3	2.30 Å	X-RAY DIFFRACTION	(2009) Proc Natl Acad Sci U S A 106: 21573-21578

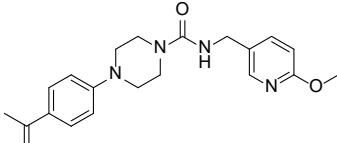
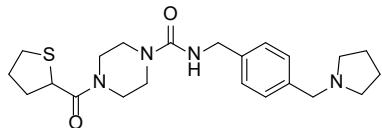
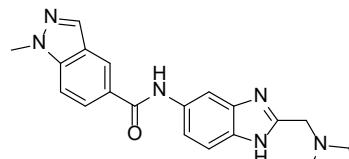
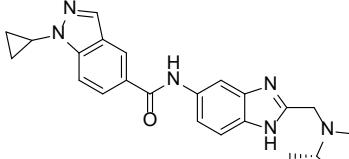
22	Yaf9 YEATS	H3 ₁₁₉₋₁₂₆ K122suc	5WYI	2.00 Å	X-RAY DIFFRACTION	(2018) Proc Natl Acad Sci U S A 115: 2365-2370
23	Yaf9 YEATS (8-171)	H3 ₂₁₋₃₁ K27ac	6AXJ	2.38 Å	X-RAY DIFFRACTION	(2018) Nucleic Acids Res 46: 421-430
24	Taf14 YEATS	-	2L7E		SOLUTION NMR	(2011) Biochem J 436: 83-90
25	Taf14 YEATS	-	3QRL	1.70 Å	X-RAY DIFFRACTION	To be published.
26	Taf14 YEATS (1-137)	-	6MIP	2.00 Å	X-RAY DIFFRACTION	(2018) Nat Commun 9: 4574-4574
27	Taf14 YEATS (1-137)	H3 ₅₋₁₃ K9bu	6MIQ	1.75 Å	X-RAY DIFFRACTION	(2018) Nat Commun 9: 4574-4574
28	Taf14 YEATS (1-137)	H3 ₅₋₁₃ K9pr	6MIO	1.85 Å	X-RAY DIFFRACTION	(2018) Nat Commun 9: 4574-4574
29	Taf14 YEATS (1-137)	H3 ₅₋₁₃ 9cr	5IOK	2.22 Å	X-RAY DIFFRACTION	(2016) Nat Chem Biol 12: 396-398

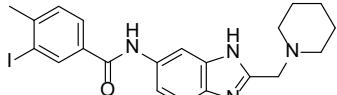
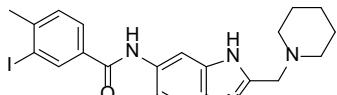
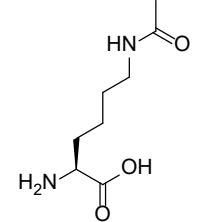
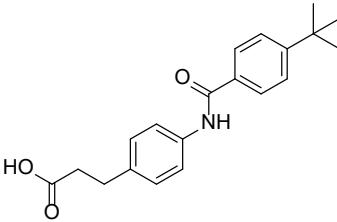
30 Taf14
YEATS (1-
132) H3₁₋₁₂K9ac 5D7E 1.90 Å X-RAY DIFFRACTION (2015) Genes Dev 29: 1795-1800

31 Taf14
YEATS (1-
137) (G82A) H3₅₋₁₃ 9cr 6MIN 1.90 Å X-RAY DIFFRACTION (2018) Nat Commun 9: 4574-4574



34	ENL YEATS (1-148)		6T1O	1.90 Å	X-RAY DIFFRACTION	(2019) ACS Med Chem Lett 10: 1661-1666
benzimidazole-amide derivative 6						
35	ENL YEATS (1-148)		6T1N	1.95 Å	X-RAY DIFFRACTION	(2019) ACS Med Chem Lett 10: 1661-1666
benzimidazole-amide derivative 5						
36	ENL YEATS (1-148)		6T1M	1.85 Å	X-RAY DIFFRACTION	(2019) ACS Med Chem Lett 10: 1661-1666
benzimidazole-amide derivative 4						
37	ENL YEATS (1-148)		6T1L	2.00 Å	X-RAY DIFFRACTION	(2019) ACS Med Chem Lett 10: 1661-1666
benzimidazole-amide derivative 3						

38	ENL YEATS (1-148)		6T1I	1.80 Å	X-RAY DIFFRACTION	(2019) ACS Med Chem Lett 10: 1661-1666	Compound 7 in this manuscript
39	ENL YEATS (1-148)		6T1J	1.97 Å	X-RAY DIFFRACTION	(2019) ACS Med Chem Lett 10: 1661-1666	
40	ENL YEATS (1-148)		6HT1	2.10 Å	X-RAY DIFFRACTION	(2018) Angew Chem Int Ed Engl 57: 16302-16307	
41	ENL YEATS (1-148)		6HT0	1.80 Å	X-RAY DIFFRACTION	(2018) Angew Chem Int Ed Engl 57: 16302-16307	

42	ENL YEATS (1-148)		benzimidazole-amide based compound 1	7B10	1.92 Å	X-RAY DIFFRACTION	(2021) ACS Chem Biol 16: 571-578
43	ENL YEATS (T3 mutant) (1-148)		benzimidazole-amide based compound 1	7B0T	2.05 Å	X-RAY DIFFRACTION	(2021) ACS Chem Biol 16: 571-578
44	ENL YEATS (1-148)		acetyllysine	6HPZ	2.30 Å	X-RAY DIFFRACTION	(2018) J Med Chem 61: 10929-10934
45	ENL YEATS (1-148)		compound 12	6HPY	2.00 Å	X-RAY DIFFRACTION	(2018) J Med Chem 61: 10929-10934

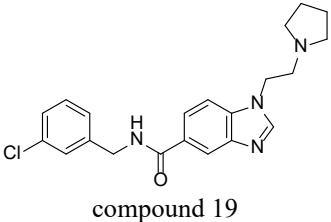
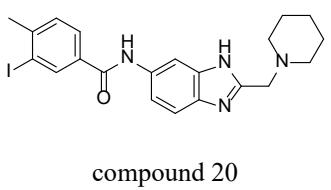
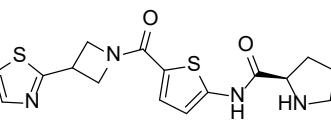
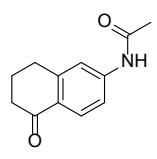
46	ENL YEATS (1-148)		6HPX	2.30 Å	X-RAY DIFFRACTION	(2018) J Med Chem 61: 10929-10934	Compound 6 in this manuscript
47	ENL YEATS (1-148)		6HPW	1.90 Å	X-RAY DIFFRACTION	(2018) J Med Chem 61: 10929-10934	
48	GAS41 YEATS		7JFY	2.10 Å	X-RAY DIFFRACTION	(2021) Cell Chem Biol 28: 1-12	Compound 9 in this manuscript
49	GAS41 YEATS		5R69	1.83 Å	X-RAY DIFFRACTION	To be published.	
50	GAS41 YEATS		5R68	1.64 Å	X-RAY DIFFRACTION	To be published.	

Table S2. Summary of the information on the binding affinity of YEATS domains with different peptide ligands.

Entry	Protein	Ligand	K _d (μM)	Method	Condition	Ref.	Note
1		H3 ₁₋₁₀ K9ac	3.7				
2		H3 ₄₋₁₀ K9ac	2.8				
3		H3 ₁₋₁₅ K9ac	5.7				
4		H3 ₅₋₁₅ K9ac	230				
5		H3 ₇₋₁₁ K9ac	N.D.				
6	AF9 YEATS	H3 ₁₇₋₂₈ K27ac	7.0	ITC	25 mM Tris, 500 mM NaCl, pH 7.5, and 2 mM β-ME; 15 °C	(2014) Cell 159: 558–571	
7		H3 ₁₋₂₅ 18ac	11.0				
8		H3 ₁₋₁₅ K14ac	N.D.				
9		H3 ₁₋₁₅ K4me3K9ac	6.8				
10		H3 ₁₋₁₅ K9acS10ph	7.6				
11		H3 ₁₋₁₅ R8AK9ac	1100				

12		H3 ₁₋₁₅ K4me3	N.D.		
13	AF9 YEATS (F28A)		30.4		
14	AF9 YEATS (S58A)		58.8		
15	AF9 YEATS (G77A)		139		
16	AF9 YEATS (D103A)		175		
17	AF9 YEATS (H56A)	H3 ₁₋₁₀ K9ac	278	ITC	25 mM Tris, 500 mM NaCl, pH 7.5, and 2 mM β-ME; 15 °C
18	AF9 YEATS (F59A)		465		(2014) Cell 159: 558–571
19	AF9 YEATS (Y78A)		490		
20	AF9 YEATS (Q8R)		13.8		
21	AF9 YEATS (N43A)		14		
22	AF9 YEATS (F47A)		12.8		
23		H3 ₁₋₁₅ K9fo	120		

24		H3 ₁₋₁₅ K9ac	5			
25		H3 ₁₋₁₅ K9pr	2.7			
26		H3 ₁₋₁₅ K9bu	3.7			
27		H3 ₁₋₁₅ K9cr	2.1			
28	AF9 YEATS	H3 ₁₋₁₅ K9hib	N.D.	ITC	25mM Tris, pH 7.5, 500 mM NaCl, 2 mM β-ME; 15 °C	(2016) Mol Cell 62: 181–193
29		H3 ₁₋₂₅ K18cr	5.7			
30		H3 ₁₋₂₅ K18ac	11.9			
31		H3 ₁₇₋₂₈ K27cr	2.7			
32		H3 ₁₇₋₂₈ K27ac	7.3			
33	AF9 YEATS (F28A)		10.5		25 mM Tris, 500 mM NaCl, pH 7.5, and 2 mM β-ME; 15 °C	
34	AF9 YEATS (S58A)	H3 ₁₋₁₅ K9cr	11	ITC		(2016) Mol Cell 62: 181–193
35	AF9 YEATS (H56A)		42			

36	AF9 YEATS (G77A)		60			
37	AF9 YEATS (D103A)		75			
38	AF9 YEATS (F59A)		403			
39	AF9 YEATS (Y78A)		163			
40	AF9 YEATS (Y78A)	H3 ₁₋₁₅ R8AK9cr	65	ITC	25 mM Tris, 500 mM NaCl, pH 7.5, and 2 mM β-ME; 15 °C	(2016) Mol Cell 62: 181–193
41	AF9 YEATS (F28A)		30			
42	AF9 YEATS (S58A)		42			
43	AF9 YEATS (H56A)		130			
44	AF9 YEATS (G77A)	H3 ₁₋₂₅ K18cr	140	ITC	25 mM Tris, 500 mM NaCl, pH 7.5, and 2 mM β-ME; 15 °C	(2016) Mol Cell 62: 181–193
45	AF9 YEATS (D103A)		56			
46	AF9 YEATS (F59A)		581			
47	AF9 YEATS (Y78A)		400			

48		H3 ₁₋₂₅ K18ac	11.9			
49	AF9 YEATS	H3 ₁₋₂₅ K18pr	7.4			
50		H3 ₁₋₂₅ k18bu	8.1	ITC	25 mM Tris, 500 mM NaCl, pH 7.5, and 2 mM β-ME; 15 °C	(2016) Mol Cell 62: 181–193
51		H3 ₁₋₂₅ K18cr	5.7			
52		H3 ₃₋₁₅ K9cr	4.6			
53		H3 ₃₋₁₅ K9ac	16.6			
54		H3 ₃₋₁₅ K9bu	10.0			
55	AF9 YEATS	H3 ₁₂₋₂₄ K18cr	19.4	ITC	PBS buffer (pH 7.4), 2 mM EDTA, 2 mM β-ME, 500 mM NaCl; 20 °C	(2016) Structure 24: 1606-1612
56		H3 ₁₂₋₂₄ K18ac	59.5			
57		H3 ₂₁₋₃₃ K27cr	24.1			
58		H3 ₂₁₋₃₃ K27ac	60.2			
59	AF9 YEATS	H3 ₅₋₁₃ K9cr	3.7 ± 0.3	NMR spectroscopy	25 mM Tris-HCl pH 7.5, 250 mM NaCl, 2 mM β-ME, 8–10% D ₂ O; 25 °C	(2018) Nat Commun 9: 4574

60		H3 ₅₋₁₃ K9bu	3.9 ± 0.5			
61		H3 ₅₋₁₃ K9ac	4.3 ± 0.3			
62	AF9 YEATS (Y78W)	H3 ₅₋₁₃ K9cr	2 ± 0.3	NMR spectroscopy	25 mM Tris-HCl pH 7.5, 250 mM NaCl, 2 mM β-ME, 8–10% D ₂ O; 25 °C	(2018) Nat Commun 9: 4574
63		H3 ₅₋₁₃ K9ac	2.3 ± 0.5			
64	AF9 YEATS (Y78WA79G)	H3 ₅₋₁₃ K9cr	2.7 ± 0.3	NMR spectroscopy	25 mM Tris-HCl pH 7.5, 250 mM NaCl, 2 mM β-ME, 8–10% D ₂ O; 25 °C	(2018) Nat Commun 9: 4574
65		H3 ₅₋₁₃ K9ac	2.6 ± 0.6			
66	AF9 YEATS	H3 ₅₋₁₃ K9ac	4.3 ± 0.3	Intrinsic tryptophan fluorescence	25 mM Tris-HCl pH 7.5, 500 mM NaCl, 2 mM β-ME; 25°C	(2018) Nucleic Acids Res 46: 421-430
67		H3 ₂₁₋₃₁ K27ac	6.1 ± 0.4			
68	AF9 YEATS (G80E)	H3 ₅₋₁₃ K9ac	9.0 ± 1.5	Intrinsic tryptophan fluorescence	25 mM Tris-HCl pH 7.5, 500 mM NaCl, 2 mM β-ME; 25°C	(2018) Nucleic Acids Res 46: 421-430
69		H3 ₂₁₋₃₁ K27ac	4.5 ± 0.2			
70	AF9 YEATS		18 ± 3			

71	AF9 YEATS (F28Y)		11.9 ± 0.6			
72	AF9 YEATS (F28 <p>CH₃F)</p>		11.8 ± 0.3			
73	AF9 YEATS (F28 <p>CIF</p>)		15.4 ± 0.9			
74	AF9 YEATS (F28 <p>CNF</p>)	H3K9ac	26 ± 1	ITC	50 mM sodium phosphate, 500 mM NaCl, 2 mM EDTA, 2 mM β -ME, pH 7.4; 25 °C	(2020) J Am Chem Soc 142: 17048-17056
75	AF9 YEATS (F28 <p>NO₂F</p>)		28.7 ± 0.1			
76	AF9 YEATS (Y78 <p>CH₃F</p>)		19 ± 1			
77	AF9 YEATS (Y78 <p>CIF</p>)		24.4 ± 0.2			
78	AF9 YEATS (Y78 <p>CNF</p>)		33.9 ± 0.3			
79	AF9 YEATS (Y78 <p>NO₂F</p>)		32.5 ± 0.3			
80	AF9 YEATS		5.6 ± 0.1			
81	AF9 YEATS (F28Y)	H3K9cr	3.8 ± 0.2	ITC	50 mM sodium phosphate, 500 mM NaCl, 2 mM EDTA, 2 mM β -ME, pH 7.4; 25 °C	(2020) J Am Chem Soc 142: 17048-17056
82	AF9 YEATS (F28 <p>CH₃F)</p>)		7.7 ± 0.5			

83	AF9 YEATS (F28pCIF)	7.4 ± 0.5			
84	AF9 YEATS (F28pCNF)	9.9 ± 0.1			
85	AF9 YEATS (F28pNO ₂ F)	17.3 ± 0.9			
86	AF9 YEATS (Y78pCH ₃ F)	5.2 ± 0.2			
87	AF9 YEATS (Y78pCIF)	6.8 ± 0.6			
88	AF9 YEATS (Y78pCNF)	8.7 ± 0.2			
89	AF9 YEATS (Y78pNO ₂ F)	8.86 ± 0.2			
90		H3 ₁₅₋₃₉ K27bz	5.97 ± 0.06		
91		H3 ₁₅₋₃₉ K27cr	2.26 ± 0.21		
92	AF9 YEATS	H3 ₁₅₋₃₉ K27ac	4.3 ± 0.24	ITC	25 mM Tris (pH 7.5), 500 mM NaCl, 5% glycerol, 2 mM β-ME; 15 °C (2021) Nucleic Acids Res 49: 114-126
93		H3 ₁₅₋₃₉ K27un	N.D.		
94	AF9 YEATS (F28S)	H3 ₁₅₋₃₉ K27bz	3.8 ± 0.21		

95	ENL YEATS	H3K9ac	59.69			
96	ENL YEATS (Mutation) p.111_113NPP4K mutants	H3K9ac	57.11	ITC	50 mM HEPES buffer pH 7.4, 300 mM NaCl, 5 mM β-ME; 25 °C	(2015) Nat Commun 6: 10013
97	ENLYEATS	H3K27ac	141.8			
98	ENLYEATS (Mutation) p.111_113NPP4K mutants	H3K27ac	329.1			
99	ENL YEATS	H3K9cr	13.5	ITC	25 mM Tris, pH 7.5, and 2 mM β- ME	
100		H3K9ac	57		500 mM NaCl; 15 °C	(2016) Mol Cell 62: 181–193
101		H3 ₁₇₋₂₈ K27ac	30.5			
102	ENL YEATS	H3 ₁₋₁₀ K9ac	32.2	ITC	500 mM NaCl, 25mM Tris-HCl, pH 7.5, 2 mM β- ME; 15 °C	(2017) Nature 543: 265–269
103		H3 ₁₋₂₅ K18ac	50.0			
104		H3 ₁₋₃₄	N.D.			
105	ENL YEATS (F28A)	H3 ₁₇₋₂₈ K27ac	117			

106	ENL YEATS (H56A)	H3 ₁₇₋₂₈ K27ac	70			
107	ENL YEATS (S58A)	H3 ₁₇₋₂₈ K27ac	500			
108	ENL YEATS (F59A)	H3 ₁₇₋₂₈ K27ac	N.D.	ITC	500 mM NaCl, 25mM Tris-HCl, pH 7.5, 2 mM β- ME; 15 °C	(2017) Nature 543: 265–269
109	ENL YEATS (Y78A)	H3 ₁₇₋₂₈ K27ac	N.D.			
110	ENL YEATS (D103A)	H3 ₁₇₋₂₈ K27ac	513			
111		H3 ₁₅₋₃₉ K27bz	64.68 ± 4.12			
112		H3 ₁₅₋₃₉ K27cr	31.22 ± 4.61		25 mM Tris (pH 7.5), 500 mM NaCl, 5% glycerol, 2 mM β-ME; 15 °C	(2021) Nucleic Acids Res 49: 114-126
113	ENL YEATS	H3 ₁₅₋₃₉ K27ac	97.98 ± 15.26	ITC		
114		H3 ₁₅₋₃₉ K27un	N.D.			
115	ENL		50.2 ± 5.0			NPPVNH LR
116	ENL T1	H3K9ac	N.D.	ITC	25 mM Tris, pH 7.5, 300 mM NaCl, 0.2 mM TCEP, and 5% (v/v) glycerol; 25 °C	(2021) ACS Chem Biol 16: 571-578 NPPVNL NHLR
117	ENL T3		49.2 ± 4.1			KVNHLR

118	H3 ₁₋₃₄ K27cr	31.7	ITC		
119	H3 ₁₋₃₄ K27bu	123.6	ITC		
120	H3 ₁₋₃₄ K27hib	141.4	ITC		
121	H3 ₁₋₃₄ 27pr	148.4	ITC		
122	H3 ₁₋₃₄ K27ac	226.2	ITC		
123	YEATS2 YEATS	H3 ₁₋₃₄ 27fo	N.D.	ITC	20mM Tris 7.5, 0.5 M Na citrate, 5% glycerol and 2mM β -ME; 15 °C
124		H3 ₁₋₃₄ K27me3	N.D.	ITC	(2016) Cell Res 26: 629-632
125		H3 ₁₅₋₃₉ K27cr	27.5	ITC	
126		H4 ₁₋₁₅ K12cr	62	ITC	
127		H3 ₁₋₁₅ K4cr	121.4	ITC	
128		H3 ₁₅₋₃₉ K27crS28ph	133	ITC	
129		H3 ₁₋₂₅ K23cr	172.4	ITC	

130		H3 ₁₋₁₅ K9cr	341.3	ITC		
131		H3 ₁₋₂₅ K14cr	N.D.	ITC		
132	YEATS2 YEATS (Y313A)	H3 ₁₅₋₃₉ K27cr	62.1	ITC		
133	YEATS2 YEATS (S261A)	H3 ₁₅₋₃₉ K27cr	414.9	ITC		
134	YEATS2 YEATS (F285A)	H3 ₁₅₋₃₉ K27cr	478.5	ITC		
135	YEATS2 YEATS (H259A)	H3 ₁₅₋₃₉ K27cr	N.D.	ITC	20mM Tris 7.5, 0.5 M Na citrate, 5% glycerol and 2mM β-ME; 15 °C	(2016) Cell Res 26: 629-632
136	YEATS2 YEATS (Y262A)	H3 ₁₅₋₃₉ K27cr	N.D.	ITC		
137	YEATS2 YEATS (W282A)	H3 ₁₅₋₃₉ K27cr	N.D.	ITC		
138	YEATS2 YEATS (G283A)	H3 ₁₅₋₃₉ K27cr	N.D.	ITC		
139	YEATS2 YEATS (E284A)	H3 ₁₅₋₃₉ K27cr	N.D.	ITC		
140		H3 ₁₅₋₃₉ K27 ac	50			
141		H3 ₁₋₂₅ K18ac	120			

142	YEATS2 YEATS	H3 ₁₋₃₄	4150	ITC	20 mM Tris 7.5, 0.5 M sodium citrate, 5% glycerol, and 2 mM β-ME; 15 °C	(2017) Nat Commun 8: 1088
143		H3 ₆₋₁₅ K14ac	N.D.			
144		H3 ₁₋₁₅ K9ac	N.D.			
145		H3 ₁₅₋₃₉ K27bz	21.57 ± 2.09			
146	YEATS2 YEATS	H3 ₁₅₋₃₉ K27cr	37.38 ± 1.88	ITC	25 mM Tris (pH 7.5), 500 mM NaCl, 5% glycerol, 2 mM β-ME; 15°C	(2021) Nucleic Acids Res 49: 114-126
147		H3 ₁₅₋₃₉ K27ac	131.13 ± 1.64			
148		H3 ₁₅₋₃₉ K27un	N.D.			
149	YEATS2 YEATS	H3 ₁₅₋₃₉ K27bz	29.81 ± 0.19			
150	(S230F)	H3 ₁₅₋₃₉ K27cr	14.34 ± 1.12	ITC	25 mM Tris (pH 7.5), 500 mM NaCl, 5% glycerol, 2 mM β-ME; 15°C	(2021) Nucleic Acids Res 49: 114-126
151		H3 ₁₅₋₃₉ K27ac	71.33 ± 4.67			
152	GAS41 YEATS (15–159)	H3 ₁₋₃₄ K27ac	9.3			
153	GAS41 YEATS (E97A)	H3 ₁₋₃₄ K27ac	13.9			

154	GAS41 YEATS (E95A)	H3 ₁₋₃₄ K27ac	65.4				
155	GAS41 YEATS (S73A)	H3 ₁₋₃₄ K27ac	133				
156	GAS41 YEATS (F96A)	H3 ₁₋₃₄ K27ac	371	ITC	20 mM Tris-HCl, pH 7.5, 500 mM NaCl, 5% glycerol and 2 mM β-ME; 15°C	(2018) Cell Discovery volume 4, Article number: 28	
157	GAS41 YEATS (Y74A)	H3 ₁₋₃₄ K27ac	641				
158	GAS41 YEATS (H71A)	H3 ₁₋₃₄ K27ac	877				
159	GAS41 YEATS (G94A)	H3 ₁₋₃₄ K27ac	N.D.				
160	GAS41 YEATS (W93A)	H3 ₁₋₃₄ K27ac	N.D.				
161		H3K9ac	788 ± 198				
162		H3K14ac	720 ± 100				
163	¹⁵ N-labeled GAS41 YEATS	H3K18ac	106 ± 27	NMR Titration	30 °C	(2018) ACS Chem Biol 13: 2739-2746	The sequence of ligand was undefined
164		H3K23ac	1135 ± 27				

165	H3K27	N.D.					
166	H3K27ac	58 ± 6					
167	H3K27cr	34 ± 4					
168	H3K27su	>1000					
169	H4K5	>1000					
170	H4K8	729 ± 197					
171	H4K12	>1000					
172	H4K16	>1000					
173	AKacA	1043 ± 100					
174	H3K18ac	35.8 ± 15.8					
175	His-tagged GAS41 YEATS	H3K27ac	81.4 ± 30.6	Biolayer interferometry assay	50 mM Tris (pH 7.5), 200 mM NaCl	(2018) ACS Chem Biol 13: 2739-2746	The sequence of ligand was undefined
176	H3K18acK27ac		3.2 ± 1.2				

177		H3K23acK27ac	5.0 ± 2.8				
178		H3K27ac	39 ± 9.2				
179		H3K27cr	23.4 ± 1.4		50 mM phosphate (pH 7.5), 150 mM NaCl, and 2 mM β -ME; 25 °C	(2018) ACS Chem Biol 13: 2739-2746	The sequence of ligands was undefined
180	GST-GAS41 YEATS	H3K23acK27ac	15 ± 1.3	ITC			
181		H3K18acK27ac	12.8 ± 0.1				
182		H3K23crK27cr	9.6 ± 0.7				
183			2.937 ± 0.21		K ₂ HPO ₄ /KH ₂ PO ₄ pH 6.0		
184	GAS41 YEATS	H3 ₁₁₇₋₁₂₇ K122suc	48.34 ± 3.8	Surface plasmon resonance	K ₂ HPO ₄ /KH ₂ PO ₄ pH 7.0	(2018) Proc Natl Acad Sci U S A 115: 2365- 2370	
185			N.D.		K ₂ HPO ₄ /KH ₂ PO ₄ pH 7.4		
186			103.7 ± 16		K ₂ HPO ₄ /KH ₂ PO ₄ pH 6.0		
187	GAS41 YEATS (H43F)	H3 ₁₁₇₋₁₂₇ K122suc	102.0 ± 1.5	Surface plasmon resonance	K ₂ HPO ₄ /KH ₂ PO ₄ pH 7.0	(2018) Proc Natl Acad Sci U S A 115: 2365- 2370	
188			N.D.		K ₂ HPO ₄ /KH ₂ PO ₄ pH 7.4		

189			79.82 ± 1.0		K_2HPO_4/KH_2PO_4 pH 6.0	
190	GAS41 YEATS	H3 ₁₁₇₋₁₂₇ K122cr	31.27 ± 2.6	Surface plasmon resonance	K_2HPO_4/KH_2PO_4 pH 7.0	(2018) Proc Natl Acad Sci U S A 115: 2365-2370
191			18.23 ± 4.3		K_2HPO_4/KH_2PO_4 pH 7.4	
192			N.D.		K_2HPO_4/KH_2PO_4 pH 6.0	
193	GAS41 YEATS	H3 ₁₁₇₋₁₂₇ K122ac	51.94 ± 6.1	Surface plasmon resonance	K_2HPO_4/KH_2PO_4 pH 7.0	(2018) Proc Natl Acad Sci U S A 115: 2365-2370
194			47.68 ± 6.7		K_2HPO_4/KH_2PO_4 pH 7.4	
195	GAS41 YEATS	H3 ₁₅₋₃₉ K27 ac	32.7	ITC	20 mM Tris-HCl, pH 7.5, 500 mM NaCl, 5% glycerol and 2 mM β -ME; 15 °C	(2018) Genes Dev 32: 58-69
196		H3 ₁₋₁₅ K14 ac	13.0			
197		H3 ₁₋₃₀ K27ac	243 ± 45		50 mM Tris pH 7.5, 150 mM NaCl, 1 mM TCEP, 0.01% BSA, and 0.01% Tween-	
198	GAS41 YEATS	H3 ₈₋₃₀ K14acK27ac	53 ± 3	Fluorescence polarization assay	20; 25 °C	(2021) Cell Chem Biol 28: 1-12
199		H3 ₁₂₋₃₀ K18acK27ac	50 ± 9			
200		H3 ₁₋₃₀ K27ac	24 ± 8	AlphaScreen	50 mM HEPES pH 7.5, 100 mM NaCl,	

201	GAS41 YEATS	H3 ₈₋₃₀ K14acK27ac	1.4 ± 0.4	1 mM TCEP, 0.05% BSA, 0.01% Tween-20; 25 °C	(2021) Cell Chem Biol 28: 1-12
202		H3 ₁₂₋₃₀ K18acK27ac	1.9 ± 0.2		
203		H3 ₁₅₋₃₉ K27bz	62.96 ± 11.24		
204		H3 ₁₅₋₃₉ K27cr	11.55 ± 2.03		
205	GAS41 YEATS	H3 ₁₅₋₃₉ K27ac	31.87 ± 3.68	ITC	25 mM Tris (pH 7.5), 500 mM NaCl, 5% glycerol, 2 mM β-ME; 15°C (2021) Nucleic Acids Res 49: 114-126
206		H3 ₁₅₋₃₉ K27un	N.D.		
207			27.44 ± 3.4		
208	Yaf9 YEATS	H3 ₁₁₇₋₁₂₇ K122suc	N.D.	Surface plasmon resonance	K ₂ HPO ₄ /KH ₂ PO ₄ pH 6.0 K ₂ HPO ₄ /KH ₂ PO ₄ pH 7.0 K ₂ HPO ₄ /KH ₂ PO ₄ pH 7.4 (2018) Proc Natl Acad Sci U S A 115: 2365-2370
209			N.D.		
210	Yaf9 YEATS	H3 ₅₋₁₃ K9cr	113	ITC	25 mM Tris, pH 7.5, and 2 mM β- ME 500 mM NaCl; 25 °C (2018) Nucleic Acids Res 46: 421-430
211		H3 ₅₋₁₃ k9ac	282		
212	Yaf9 YEATS	H3 ₂₁₋₃₁ K27ac	10 ± 2		20 mM Tris– HCl pH 7.5, 150

213	Yaf9 YEATS	H3 ₅₋₁₃ K9ac	39 ± 5	Intrinsic tryptophan fluorescence	mM NaCl, 1 mM TCEP; 25 °C	(2018) Nucleic Acids Res 46: 421-430
214	¹⁵ N-labeled Yaf9 YEATS	Kac	>2000	NMR	20 mM Tris-HCl pH 7.5, 150 mM NaCl, 1 mM TCEP, 8–10% D ₂ O; 25 °C	(2018) Nucleic Acids Res 46: 421-430
215	Yaf9 YEATS (W89A)	H3 ₂₁₋₃₁ K27ac	N.D.			
216	Yaf9 YEATS (E91G)		20 ± 1			
217	Yaf9 YEATS (R114D)	H3 ₂₁₋₃₁ K27ac	11 ± 2	Intrinsic tryptophan fluorescence	20 mM Tris-HCl pH 7.5, 150 mM NaCl, 1 mM TCEP; 25 °C	(2018) Nucleic Acids Res 46: 421-430
218	Yaf9 YEATS (E91G)		26 ± 4			
219	Yaf9 YEATS (R114D)	H3 ₅₋₁₃ K9ac	22 ± 1			
220		H3 ₁₋₂₀	ND			
221	Taf14 YEATS	H3 ₁₋₂₀ K9ac	150.6 ± 14.5	Fluorescence polarization binding assays	20 mM Tris-HCl (pH 8.0), 250 mM NaCl, 1 mM DTT and 0.05% NP-40; 25 °C	(2015) Genes Dev 29: 1795-1800
222		H3 ₁₋₂₀ K9ac14ac18ac	49.9±2			
223	Taf14 YEATS	H3 ₅₋₁₃ K9cr	9 ± 2	Fluorescence spectroscopy	PBS buffer pH 7.4; 25 °C	

224		H3 ₅₋₁₃ K9bu	28 ± 2			(2018) Nat Commun 9: 4574-4574
225		H3 ₅₋₁₃ K9ac	130 ± 8			
226	Taf14 YEATS	H3 ₅₋₁₃ K9su	>700	NMR titration	PBS, pH 6.8, 8% D ₂ O; 25 °C	(2018) Nat Commun 9: 4574-4574
227		H3 ₅₋₁₃ K9hib	N.D.			
228	Taf14 YEATS G82A	H3 ₅₋₁₃ K9cr	124 ± 41	Fluorescence spectroscopy	PBS buffer pH 7.4; 25 °C	(2018) Nat Commun 9: 4574-4574
229						
230	Taf14 YEATS (W81Y)	H3 ₅₋₁₃ K9cr	9.2 ± 0.9	NMR spectroscopy	PBS, pH 6.8, 8% D ₂ O; 25 °C	(2018) Nat Commun 9: 4574-4574
231		H3 ₅₋₁₃ K9bu	40 ± 1			
232	Taf14 YEATS		229 ± 28			
233	Taf14 YEATS (G83E)	H3 ₂₁₋₃₁ K27ac	38 ± 12	Intrinsic tryptophan fluorescence	20 mM Tris-HCl pH 7.5, 150 mM NaCl, 1 mM TCEP; 25 °C	(2018) Nucleic Acids Res 46: 421-430
234	Taf14 YEATS (D104R)		234 ± 21			
235	Taf14 YEATS	H3 ₅₋₁₃ K9ac	130 ± 8		20 mM Tris-HCl pH 7.5, 150	

236	Taf14 YEATS (G83E)	256 ± 10	Intrinsic tryptophan fluorescence	mM NaCl, 1 mM TCEP; 25 °C	(2018) Nucleic Acids Res 46: 421-430
237	Taf14 YEATS (D104R)	186 ± 21			