

Supplemental Table 1. Total and modified spectral counts for each lysine residue in p300. "ND" indicates that the amino acid was not detected in any of the analyses in either the acetylated or unmodified state.

p300 Residue	Overall Detection			Modification Summary (Sum)										NOT MODIFIED (Trypsin, Chymotrypsin, GluC)			PREP1 AC TI			PREP1 DEAC TI			PREP2 AC SUM (Trypsin, Chymotrypsin, GluC)			PREP2 DEAC SUM (Trypsin, Chymotrypsin, GluC)			PREP3 AC SUM (Trypsin, Chymotrypsin, GluC)			PREP3 DEAC SUM (Trypsin, Chymotrypsin, GluC)			
	Number of times detected (All)	Total times acetylated (All)	Total times detected (Ac samples)	Total times acetylated (Ac samples)	% MOD (Ac samples)	Total times detected (SIRT2 treated samples)	Total times Acetylated (SIRT2 treated samples)	% MOD (SIRT2 treated samples)	% of Total p300 acetylation (Ac samples)	Total times detected (SIRT2 treated samples)	Total times Acetylated (SIRT2 treated samples)	% MOD (SIRT2 treated samples)	% of Total p300 acetylation (SIRT2 treated samples)	TOTAL TIMES DETECTED	ACETYLATED PEPTIDES	% MODIFIED PEPTIDES	TOTAL TIMES DETECTED	ACETYLATED PEPTIDES	% MODIFIED PEPTIDES	TOTAL TIMES DETECTED	ACETYLATED PEPTIDES	% MODIFIED PEPTIDES	TOTAL TIMES DETECTED	ACETYLATED PEPTIDES	% MODIFIED PEPTIDES	TOTAL TIMES DETECTED	ACETYLATED PEPTIDES	% MODIFIED PEPTIDES	TOTAL TIMES DETECTED	ACETYLATED PEPTIDES	% MODIFIED PEPTIDES	TOTAL TIMES DETECTED	ACETYLATED PEPTIDES	% MODIFIED PEPTIDES	
	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	Ac	
14 K	4	0	0	0	0.00%	4	0	0.00%	0.00%	4	0	0.00%	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0
17 K**	4	0	0	0	0.00%	4	0	0.00%	0.00%	4	0	0.00%	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0
77 K	77	10	41	9	21.95%	35	1	2.86%	0.29%	35	1	2.86%	0.29%	1	0	0.00%	0	0	0.00%	0	0	0.00%	30	6	20.00%	4	0	0.00%	11	3	27.27%	31	1	3.23%	
79 K**	85	11	49	11	22.45%	35	0	0.00%	0.00%	35	0	0.00%	0.00%	1	0	0.00%	4	4	100.00%	0	0	0.00%	33	6	18.18%	4	0	0.00%	12	1	8.33%	31	0	0.00%	
123 K	136	0	71	0	0.00%	46	0	0.00%	0.00%	19	0	0.00%	0.00%	19	0	0.00%	24	0	0.00%	9	0	0.00%	31	0	0.00%	32	0	0.00%	32	0	0.00%	6	0	0.00%	
243 K	14	0	3	0	0.00%	10	0	0.00%	0.00%	10	0	0.00%	0.00%	1	0	0.00%	0	0	0.00%	7	0	0.00%	0	0	0.00%	2	0	0.00%	3	0	0.00%	1	0	0.00%	
277 K	82	0	55	0	0.00%	24	0	0.00%	0.00%	24	0	0.00%	0.00%	3	0	0.00%	24	0	0.00%	24	0	0.00%	6	0	0.00%	17	0	0.00%	25	0	0.00%	2	0	0.00%	
291 K	75	1	48	1	2.08%	24	0	0.00%	0.00%	24	0	0.00%	0.00%	3	0	0.00%	17	0	0.00%	6	0	0.00%	15	0	0.00%	15	0	0.00%	16	1	6.25%	3	0	0.00%	
292 K**	42	1	18	1	5.56%	23	0	0.00%	0.00%	23	0	0.00%	0.00%	1	0	0.00%	2	0	0.00%	9	0	0.00%	7	1	14.29%	1	0	0.00%	9	0	0.00%	13	0	0.00%	
334 K	59	0	19	0	0.00%	38	0	0.00%	0.00%	2	0	0.00%	0.00%	2	0	0.00%	0	0	0.00%	14	0	0.00%	7	0	0.00%	11	0	0.00%	11	0	0.00%	13	0	0.00%	
336 K**	4	4	3	3	100.00%	1	1	100.00%	0.29%	0	0	0.00%	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	1	1	100.00%	3	3	100.00%	0	0	0.00%	
350 K	384	57	84	19	22.62%	300	38	12.67%	11.14%	300	38	12.67%	11.14%	0	0	0.00%	0	0	0.00%	50	0	0.00%	6	0	0.00%	88	17	19.32%	78	19	24.36%	162	21	12.96%	
373 K**	43	43	33	33	100.00%	10	10	100.00%	2.93%	10	10	100.00%	2.93%	0	0	0.00%	3	3	100.00%	0	0	0.00%	9	9	100.00%	9	9	100.00%	21	21	100.00%	1	1	100.00%	
386 K	139	58	86	44	51.16%	49	14	28.57%	4.11%	49	14	28.57%	4.11%	4	0	0.00%	6	0	0.00%	7	0	0.00%	21	16	76.19%	36	13	36.11%	59	28	47.46%	6	1	16.67%	
404 K**	4	6	4	4	66.67%	0	0	0.00%	0.00%	0	0	0.00%	0.00%	0	0	0.00%	0	0	0.00%	2	2	100.00%	0	0	0.00%	0	0	0.00%	4	2	50.00%	0	0	0.00%	
418 K**	131	47	82	39	47.56%	48	8	16.67%	2.35%	48	8	16.67%	2.35%	1	0	0.00%	12	4	33.33%	8	0	0.00%	24	13	54.17%	19	6	31.58%	46	22	47.83%	21	2	9.52%	
423 K**	73	44	49	40	81.63%	24	4	16.67%	1.17%	24	4	16.67%	1.17%	0	0	0.00%	4	3	75.00%	0	0	0.00%	17	15	88.24%	8	4	50.00%	28	22	78.57%	16	0	0.00%	
489 K	117	2	75	2	2.67%	39	0	0.00%	0.00%	39	0	0.00%	0.00%	3	0	0.00%	29	1	3.45%	5	0	0.00%	22	0	0.00%	32	0	0.00%	24	1	4.17%	2	0	0.00%	
569 K	33	8	21	8	38.10%	9	0	0.00%	0.00%	9	0	0.00%	0.00%	3	0	0.00%	13	0	0.00%	9	0	0.00%	3	3	100.00%	0	0	0.00%	5	5	100.00%	0	0	0.00%	
586 K	13	2	8	2	25.00%	0	0	0.00%	0.00%	0	0	0.00%	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	2	2	100.00%	4	4	100.00%	
601 K	255	35	210	35	16.67%	36	0	0.00%	0.00%	36	0	0.00%	0.00%	9	0	0.00%	109	10	9.17%	16	0	0.00%	45	9	20.00%	17	0	0.00%	56	16	28.57%	3	0	0.00%	
614 K	315	10	209	5	2.39%	99	5	5.05%	1.47%	99	5	5.05%	1.47%	7	0	0.00%	18	0	0.00%	12	2	16.67%	111	3	2.70%	37	5	13.51%	80	2	2.50%	50	0	0.00%	
636 K**	70	1	40	0	0.00%	24	1	4.17%	0.29%	24	1	4.17%	0.29%	6	0	0.00%	10	0	0.00%	2	1	50.00%	13	0	0.00%	3	0	0.00%	17	0	0.00%	19	0	0.00%	
639 K	23	0	10	0	0.00%	13	0	0.00%	0.00%	13	0	0.00%	0.00%	0	0	0.00%	0	0	0.00%	1	0	0.00%	5	0	0.00%	0	0	0.00%	5	0	0.00%	12	0	0.00%	
642 K	29	0	10	0	0.00%	12	0	0.00%	0.00%	12	0	0.00%	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	5	0	0.00%	0	0	0.00%	5	0	0.00%	12	0	0.00%	
647 K	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	
654 K	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	
970 K	29	2	14	2	14.29%	14	0	0.00%	0.00%	14	0	0.00%	0.00%	1	0	0.00%	0	0	0.00%	0	0	0.00%	14	2	14.29%	0	0	0.00%	0	0	0.00%	14	0	0.00%	
977 K**	27	0	13	0	0.00%	13	0	0.00%	0.00%	13	0	0.00%	0.00%	1	0	0.00%	0	0	0.00%	0	0	0.00%	13	0	0.00%	0	0	0.00%	0	0	0.00%	13	0	0.00%	
981 K**	93	7	54	7	8.54%	13	5	38.46%	1.78%	13	5	38.46%	1.78%	5	0	0.00%	4	2	50.00%	4	2	50.00%	4	4	100.00%	17	7	41.18%	17	5	29.41%	27	0	0.00%	
1001 K	119	2	76	2	2.63%	36	0	0.00%	0.00%	36	0	0.00%	0.00%	7	0	0.00%	3	0	0.00%	2	0	0.00%	49	2	4.08%	7	0	0.00%	24	0	0.00%	25	0	0.00%	
1006 K**	54	0	48	0	0.00%	4	0	0.00%	0.00%	4	0	0.00%	0.00%	2	0	0.00%	2	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	16	0	0.00%	4	0	0.00%	
1020 K**	62	1	28	1	3.57%	26	0	0.00%	0.00%	26	0	0.00%	0.00%	8	0	0.00%	2	0	0.00%	2	0	0.00%	9	0	0.00%	4	0	0.00%	17	1	5.88%	22	0	0.00%	
1024 K	160	0	95	0	0.00%	56	0	0.00%	0.00%	56	0	0.00%	0.00%	9	0	0.00%	7	0	0.00%	2	0	0.00%	37	0	0.00%	15	0	0.00%	51	0	0.00%	39	0	0.00%	
1045 K	169	3	99	3	3.03%	61	0	0.00%	0.00%	61	0	0.00%	0.00%	9	0	0.00%	9	0	0.00%	2	0	0.00%	41	2	4.88%	19	4	21.05%	49	1	2.04%	40	0	0.00%	
1046 K**	122	10	73	10	13.70%	45	0	0.00%	0.00%	45	0	0.00%	0.00%	4	0	0.00%	7	7	100.00%	0	0	0.00%	29	2	6.90%	9	0	0.00%	37	1	2.70%	36	0	0.00%	
1047 K**	127	13	76	13	17.11%	49	0	0.00%	0.00%	49	0	0.00%	0.00%	2	0	0.00%	8	8	100.00%	0	0	0.00%	32	3	9.38%	11	0	0.00%	36	2	5.56%	38	0	0.00%	
1050 K	146	0	86	0	0.00%	56	0	0.00%	0.00%	56	0	0.00%	0.00%	4	0	0.00%	10	0	0.00%	1	0	0.00%	36	0	0.00%	12	0	0.00%	40						

1760	K	52	36	36	32	88.89%	1.30%	16	4	25.00%	1.17%		0	0		6	6	100.00%	0			14	14	100.00%	13	4	30.77%	16	12	75.00%	3	0	0.00%
1762	K**	36	33	32	29	90.63%	1.18%	4	4	100.00%	1.17%		0	0		6	6	100.00%	0			14	12	85.71%	4	4	100.00%	12	11	91.67%	0	0	
1769	K**	72	72	62	62	100.00%	2.51%	10	10	100.00%	2.93%		0	0		9	9	100.00%	4	4	100.00%	26	26	100.00%	6	6	100.00%	27	27	100.00%	0	0	
1772	K**	72	64	62	56	90.32%	2.27%	10	8	80.00%	2.35%		0	0		9	7	77.78%	4	2	50.00%	26	24	92.31%	6	6	100.00%	27	25	92.59%	0	0	
1774	K**	2	2	2	2	100.00%	0.68%	0	0	ND	0.00%	Complete Loss of peptide	0	0		0						0	0		0	0		2	2	100.00%	0	0	
1783	K	5	3	2	0	0.00%	0.00%	3	3	100.00%	0.88%		0	0		0						0	0		3	3	100.00%	2	0	0.00%	0	0	
1794	K	43	13	18	7	38.89%	0.28%	25	6	24.00%	1.76%		0	0		2	1	50.00%	0			4	1	25.00%	19	4	21.05%	12	5	41.67%	6	2	33.33%
1800	K**	22	4	12	3	25.00%	0.12%	10	1	10.00%	0.29%		0	0		1		0.00%	0			1	0	0.00%	5	1	20.00%	10	3	30.00%	5	0	0.00%
1810	K	22	17	16	12	75.00%	0.49%	6	5	83.33%	1.47%		0	0		0						3	2	66.67%	6	5	83.33%	13	10	76.92%	0	0	
1812	K**	18	13	13	11	84.62%	0.45%	5	2	40.00%	0.55%		0	0		0						3	2	66.67%	5	2	40.00%	10	9	90.00%	0	0	
1900	K	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0		0						0	0		0	0		0	0	0.00%	0	0	
2042	K	65	0	26	0	0.00%	0.00%	38	0	0.00%	0.00%		1	0	0.00%	0						8	0	0.00%	13	0	0.00%	18	0	0.00%	25	0	0.00%
2086	K	157	5	27	5	18.52%	0.20%	125	0	0.00%	0.00%		5	0	0.00%	0						13	4	0.00%	33	0	0.00%	23	5	21.74%	79	0	0.00%
2091	K	5	3	4	3	75.00%	0.12%	1	0	0.00%	0.00%		0	0		0						0	0		0	0		4	3	75.00%	1	0	0.00%

**Proximity to other tryptic residues may result in residue being missed in a trypsin digest if they are unmodified