

Supplementary Tables

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
1768.64	N	Anywhere	Fucosylated biantennary (N-linked glycosylation)
1738.87	C	Anywhere	L-selenocysteiny l tungsten bis(molybdopterin guanine dinucleotide) (Post-translational)
1622.58	N	Anywhere	Biantennary (N-linked glycosylation)
1620.93	C	Anywhere	L-selenocysteiny l molybdenum bis(molybdopterin guanine dinucleotide) (Post-translational)
1606.59	N	Anywhere	Fucosylated biantennary (-1 galactose) (N-linked glycosylation)
1588.98	S	Anywhere	L-seriny l molybdenum bis(molybdopterin guanine dinucleotide) (Post-translational)
1572.99	C	Anywhere	molybdenum bis(molybdopterin guanine dinucleotide) (Post-translational)
1572.99	D	Anywhere	molybdenum bis(molybdopterin guanine dinucleotide) (Post-translational)
1460.53	N	Anywhere	Biantennary (-1 galactose) (N-linked glycosylation)
1444.53	N	Anywhere	Fucosylated biantennary (-2 galactose) (N-linked glycosylation)
1298.48	N	Anywhere	Biantennary (-2 galactose) (N-linked glycosylation)
1216.42	N	Anywhere	N-linked glycan core (N-linked glycosylation)
1046.35	K	Anywhere	ExacTag Amine label mass for 2-4-7-10 plex (Isotopic label)
972.365	C	Anywhere	ExacTag Thiol label mass for 2-4-7-10 plex (Isotopic label)
947.323	N	Anywhere	Hex1HexNAc1NeuAc2 (N-linked glycosylation)
947.323	S	Anywhere	Hex1HexNAc1NeuAc2 (O-linked glycosylation)
947.323	T	Anywhere	Hex1HexNAc1NeuAc2 (O-linked glycosylation)
923.291	N	Anywhere	Hex3HexNAc2P1 (N-linked glycosylation)
922.835	C	Anywhere	copper sulfido molybdopterin cytosine dinucleotide (Post-translational)
892.317	N	Anywhere	Hex3HexNAc2 (N-linked glycosylation)
881.147	S	Anywhere	phosphoribosyl dephospho-coenzyme A (Post-translational)
876.322	N	Anywhere	Hex2HexNAc2dHex1 (N-linked glycosylation)
862.307	N	Anywhere	Hex2HexNAc2Pent1 (N-linked glycosylation)
860.327	N	Anywhere	Hex1HexNAc2dHex2 (N-linked glycosylation)
846.312	N	Anywhere	Hex1HexNAc2dHex1Pent1 (N-linked glycosylation)
821.28	N	Anywhere	Hex3HexNAc1Pent1 (N-linked glycosylation)
796.239	C	Anywhere	fluorescent dye that labels cysteines (Chemical derivative)
783.141	C	Anywhere	Flavin adenine dinucleotide (Post-translational)
783.141	H	Anywhere	Flavin adenine dinucleotide (Post-translational)
783.141	Y	Anywhere	Flavin adenine dinucleotide (Post-translational)
765.1	C	Anywhere	Cysteine modified Coenzyme A (Post-translational)
760.731	Q	Anywhere	L-glutamyl 5-omega-hydroxyceramide ester (Post-translational)
730.264	N	Anywhere	Hex2HexNAc2 (N-linked glycosylation)
714.269	N	Anywhere	Hex1HexNAc2dHex1 (N-linked glycosylation)
713.093	C	Anywhere	bis-N-I-sulfonylserine (Chemical derivative)
700.254	N	Anywhere	Hex1HexNAc2Pent1 (N-linked glycosylation)
699.52	G	C-Terminus	C-term N-glycyl-1-(phosphatidyl)ethanolamine (Post-translational)
698.275	N	Anywhere	HexNAc2dHex2 (N-linked glycosylation)
684.298	C	Anywhere	Cy5 CyDye DIGE Fluor saturation dye (Chemical derivative)
672.298	C	Anywhere	Cy3 CyDye DIGE Fluor saturation dye (Chemical derivative)
660.428	C	Anywhere	Prostaglandin A1-biotinimide (Other)
656.228	N	Anywhere	Hex1HexNAc1NeuAc1 (N-linked glycosylation)
656.228	S	Anywhere	Hex1HexNAc1NeuAc1 (O-linked glycosylation)
656.228	T	Anywhere	Hex1HexNAc1NeuAc1 (O-linked glycosylation)
634.663	C	Anywhere	S-diphytanylglycerol diether (Post-translational)
626.387	C	Anywhere	15-deoxy-delta 12,14-Prostaglandin J2-biotinimide (Other)

Table 1: Universal list of modifications used with PILOT-PTM.

Monoisotopic Mass	Residue	Location	Name
626.264	C	Anywhere	Alkylation by biotinylated form of phenacyl bromide (Chemical derivative)
626.264	H	Anywhere	Alkylation by biotinylated form of phenacyl bromide (Chemical derivative)
626.264	S	Anywhere	Alkylation by biotinylated form of phenacyl bromide (Chemical derivative)
616.177	C	Anywhere	heme (Post-translational)
616.177	H	Anywhere	heme (Post-translational)
614.162	E	Anywhere	hydroxyheme (Post-translational)
601.206	S	Anywhere	EDT-maleimide-PEO-biotin (Chemical derivative)
601.206	T	Anywhere	EDT-maleimide-PEO-biotin (Chemical derivative)
595.613	Y	Anywhere	tetraiodo (Post-translational)
592.076	K	Anywhere	4,4-diamino-1,1-bimaphthyl-5,5-disulfonic acid (Chemical derivative)
588.295	C	Anywhere	phycoerythrobilin (Post-translational)
586.279	C	Anywhere	phycocyanobilin (Post-translational)
584.263	C	Anywhere	phytochromobilin (Post-translational)
576.512	C	Anywhere	diacylglycerol (Post-translational)
573.189	n	N-Terminus	N-term tris(2,4,6-trimethoxyphenyl)phosphonium acetic acid N-hydroxysuccinimide ester derivative (Chemical derivative)
572.316	S	Anywhere	10-ethoxyphosphiny-N-(biotinamidopentyl)decanamide (Chemical derivative)
572.316	T	Anywhere	10-ethoxyphosphiny-N-(biotinamidopentyl)decanamide (Chemical derivative)
572.316	Y	Anywhere	10-ethoxyphosphiny-N-(biotinamidopentyl)decanamide (Chemical derivative)
568.212	N	Anywhere	Hex1HexNAc2 (N-linked glycosylation)
552.217	N	Anywhere	HexNAc2dHex1 (N-linked glycosylation)
541.061	C	Anywhere	ADP Ribose addition (Other glycosylation)
541.061	E	Anywhere	ADP Ribose addition (Other glycosylation)
541.061	N	Anywhere	ADP Ribose addition (Other glycosylation)
541.061	R	Anywhere	ADP Ribose addition (Other glycosylation)
541.061	S	Anywhere	ADP Ribose addition (Other glycosylation)
525.226	C	Anywhere	Maleimide-PEO2-Biotin (Chemical derivative)
525.143	Y	Anywhere	thiophosphate labeled with biotin-HPDP (Chemical derivative)
521.884	C	Anywhere	molybdopterin (Post-translational)
516.17	E	Anywhere	tetraglutamyl (Post-translational)
511.19	N	Anywhere	Hex1HexNAc1dHex1 (N-linked glycosylation)
495.195	N	Anywhere	HexNAc1dHex2 (N-linked glycosylation)
494.301	C	Anywhere	Gygi ICAT(TM) d8 (Isotopic label)
490.174	S	Anywhere	EDT-iodo-PEO-biotin (Chemical derivative)
490.174	T	Anywhere	EDT-iodo-PEO-biotin (Chemical derivative)
487.246	c	C-Terminus	C-term Pierce EZ link biotin hydrazide prod no. 21360 (Chemical derivative)
486.251	C	Anywhere	Gygi ICAT(TM) d0 (Isotopic label)
486.158	N	Anywhere	Hex3 (N-linked glycosylation)
484.228	K	Anywhere	Sumo mutant Smt3-WT tail following trypsin digestion (Other)
469.716	Y	Anywhere	triotodo (Post-translational)
456.105	C	Anywhere	S-(4a-FMN) (Post-translational)
454.089	C	Anywhere	flavin mononucleotide (Post-translational)
454.089	H	Anywhere	flavin mononucleotide (Post-translational)
452.246	K	Anywhere	Sulfo-NHS-LC-LC-Biotin (Chemical derivative)
452.246	n	N-Terminus	N-term Sulfo-NHS-LC-LC-Biotin (Chemical derivative)
450.275	C	Anywhere	Applied Biosystems original ICAT(TM) d8 (Isotopic label)

Table 1: Universal list of modifications used with PILOT_PT.M.

Monoisotopic Mass	Residue	Location	Name
447.196	S	Anywhere	6-N-biotinylaminoethyl isopropyl phosphate (Chemical derivative)
447.196	T	Anywhere	6-N-biotinylaminoethyl isopropyl phosphate (Chemical derivative)
447.196	Y	Anywhere	6-N-biotinylaminoethyl isopropyl phosphate (Chemical derivative)
442.225	C	Anywhere	Applied Biosystems original ICAT(TM) d0 (Isotopic label)
441.058	D	C-Terminus	C-term protein-glycosaminoglycan-protein cross-link (Post-translational)
438.094	S	Anywhere	O3-(riboflavin phosphoryl) (Post-translational)
438.094	T	Anywhere	O3-(riboflavin phosphoryl) (Post-translational)
428.192	C	Anywhere	Pierce EZ-Link Biotin-HPDP (Chemical derivative)
427.069	C	Anywhere	fluorescein-5-maleimide (Chemical derivative)
426.441	K	Anywhere	silaffin polycationic lysine derivative (Post-translational)
421.073	C	Anywhere	fluorescein-5-thiosemicarbazide (Chemical derivative)
421.073	K	Anywhere	fluorescein-5-thiosemicarbazide (Chemical derivative)
421.073	P	Anywhere	fluorescein-5-thiosemicarbazide (Chemical derivative)
421.073	R	Anywhere	fluorescein-5-thiosemicarbazide (Chemical derivative)
421.073	S	Anywhere	fluorescein-5-thiosemicarbazide (Chemical derivative)
418.138	C	Anywhere	dipyrrolylmethanemethyl (Post-translational)
414.194	C	Anywhere	Biotinyl-iodoacetamidyl-3,6-dioxaoctanediamine (Chemical derivative)
406.159	N	Anywhere	HexNAc2 (N-linked glycosylation)
388.082	C	Anywhere	5-Iodoacetamidofluorescein (Molecular Probe, Eugene, OR) (Chemical derivative)
387.128	E	Anywhere	triglutamyl (Post-translational)
383.228	K	Anywhere	Ubiquitination (Chemical derivative)
380.147	C	Anywhere	nucleophilic addition to cytopiloyne+H2O (Chemical derivative)
380.147	K	Anywhere	nucleophilic addition to cytopiloyne+H2O (Chemical derivative)
380.147	R	Anywhere	nucleophilic addition to cytopiloyne+H2O (Chemical derivative)
380.147	S	Anywhere	nucleophilic addition to cytopiloyne+H2O (Chemical derivative)
380.147	T	Anywhere	nucleophilic addition to cytopiloyne+H2O (Chemical derivative)
380.147	Y	Anywhere	nucleophilic addition to cytopiloyne+H2O (Chemical derivative)
380.147	n	N-Terminus	N-term nucleophilic addition to cytopiloyne+H2O (Chemical derivative)
377.69	Y	Anywhere	tri-Iodination (Chemical derivative)
371.199	P	Anywhere	Oxidized proline biotinylated with biotin-LC-hydrazide, reduced (Chemical derivative)
369.183	P	Anywhere	Oxidized Proline biotinylated with biotin-LC-hydrazide (Chemical derivative)
365.132	S	Anywhere	Hex1HexNAc1 (O-linked glycosylation)
365.132	T	Anywhere	Hex1HexNAc1 (O-linked glycosylation)
362.137	C	Anywhere	nucleophilic addition to cytopiloyne (Chemical derivative)
362.137	K	Anywhere	nucleophilic addition to cytopiloyne (Chemical derivative)
362.137	P	Anywhere	nucleophilic addition to cytopiloyne (Chemical derivative)
362.137	R	Anywhere	nucleophilic addition to cytopiloyne (Chemical derivative)
362.137	S	Anywhere	nucleophilic addition to cytopiloyne (Chemical derivative)
362.137	Y	Anywhere	nucleophilic addition to cytopiloyne (Chemical derivative)
362.137	n	N-Terminus	N-term nucleophilic addition to cytopiloyne (Chemical derivative)
356.188	D	Anywhere	Biotin polyethyleneoxide amine (Chemical derivative)
356.188	E	Anywhere	Biotin polyethyleneoxide amine (Chemical derivative)
354.173	K	Anywhere	Oxidized lysine biotinylated with biotin-LC-hydrazide, reduced (Chemical derivative)
352.157	K	Anywhere	Oxidized lysine biotinylated with biotin-LC-hydrazide (Chemical derivative)
351.118	C	Anywhere	N-iodoacetyl, p-chlorobenzyl-13C6-glucamine (Isotopic label)
349.137	N	Anywhere	HexNAc1dHex1 (N-linked glycosylation)
348.24	K	Anywhere	ESP-Tag heavy d10 (Isotopic label)
348.24	n	N-Terminus	N-term ESP-Tag heavy d10 (Isotopic label)
348.194	K	Anywhere	Levuglandinyl - lysine hydroxylactam adduct (Post-translational)
345.098	C	Anywhere	N-iodoacetyl, p-chlorobenzyl-12C6-glucamine (Isotopic label)
345.047	H	Anywhere	phospho-guanosine (Post-translational)
345.047	K	Anywhere	phospho-guanosine (Post-translational)
344.04	C	Anywhere	S-guanylation (Post-translational)
342.787	C	Anywhere	hydrogenase diiron subcluster (Post-translational)
340.167	C	Anywhere	Bisphenol A diglycidyl ether derivative (Non-standard residue)
340.101	K	Anywhere	O5-glucosylgalactosyl-L-hydroxylysine (Glycosylation)
340.086	S	Anywhere	Phosphopantetheine (Post-translational)
339.162	K	Anywhere	NHS-LC-Biotin (Chemical derivative)
339.162	n	N-Terminus	N-term NHS-LC-Biotin (Chemical derivative)
338.178	K	Anywhere	ESP-Tag light d0 (Isotopic label)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
338.178	n	N-Terminus	N-term ESP-Tag light d0 (Isotopic label)
332.199	K	Anywhere	Levuglandinyl - lysine lactam adduct (Post-translational)
329.053	H	Anywhere	AMP binding site (Post-translational)
329.053	K	Anywhere	AMP binding site (Post-translational)
329.053	T	Anywhere	AMP binding site (Post-translational)
329.053	Y	Anywhere	AMP binding site (Post-translational)
327.241	C	Anywhere	Nitroalkylation by Nitro Oleic Acid (Post-translational)
327.241	H	Anywhere	Nitroalkylation by Nitro Oleic Acid (Post-translational)
326.141	C	Anywhere	biotinoyl-iodoacetyl-ethylenediamine (Chemical derivative)
325.225	C	Anywhere	Nitroalkylation by Nitro Linoleic Acid (Post-translational)
325.225	H	Anywhere	Nitroalkylation by Nitro Linoleic Acid (Post-translational)
324.106	K	Anywhere	Lactosylation (Other glycosylation)
324.106	K	Anywhere	glucosylgalactosyl hydroxylysine (O-linked glycosylation)
324.106	R	Anywhere	Lactosylation (Other glycosylation)
322.02	F	Anywhere	Cross-link of (Iodo)-uracil MP with W,F,Y (Chemical derivative)
322.02	W	Anywhere	Cross-link of (Iodo)-uracil MP with W,F,Y (Chemical derivative)
322.02	Y	Anywhere	Cross-link of (Iodo)-uracil MP with W,F,Y (Chemical derivative)
316.138	C	Anywhere	Thio Ether Formation - BTP Adduct (Chemical derivative)
312.151	R	Anywhere	Oxidized arginine biotinylated with biotin-LC-hydrazide, reduced (Chemical derivative)
311.167	Q	Anywhere	Used for labeling glutamine-donor substrate of transglutaminase (Chemical derivative)
310.135	R	Anywhere	Oxidized arginine biotinylated with biotin-LC-hydrazide (Chemical derivative)
306.172	R	Anywhere	Levuglandinyl - arginine hydroxylactam adduct (Post-translational)
306.025	H	Anywhere	uridine phosphodiester (Post-translational)
306.025	Y	Anywhere	uridine phosphodiester (Post-translational)
305.068	C	Anywhere	glutathione disulfide (Post-translational)
304.205	K	Anywhere	Representative mass and accurate mass for 113, 114, 116 & 117 (Isotopic label)
304.205	Y	Anywhere	Representative mass and accurate mass for 113, 114, 116 & 117 (Isotopic label)
304.205	n	N-Terminus	N-term Representative mass and accurate mass for 113, 114, 116 & 117 (Isotopic label)
304.199	K	Anywhere	Accurate mass for 115, 118, 119 & 121 (Isotopic label)
304.199	Y	Anywhere	Accurate mass for 115, 118, 119 & 121 (Isotopic label)
304.199	n	N-Terminus	N-term Accurate mass for 115, 118, 119 & 121 (Isotopic label)
298.023	C	Anywhere	Heavy IDBEST tag for quantitation (Isotopic label)
296.016	C	Anywhere	Light IDBEST tag for quantitation (Isotopic label)
294.183	D	Anywhere	cis-14-hydroxy-10,13-dioxo-7-heptadecenoic ester (Post-translational)
290.177	R	Anywhere	Levuglandinyl - arginine lactam adduct (Post-translational)
283.046	S	Anywhere	N-acetylglucosamine-1-phosphoryl (Other glycosylation)
282.053	R	Anywhere	2 Hydroxyphenylglyoxal arginine (Chemical derivative)
272.25	C	Anywhere	Geranyl-geranyl (Post-translational)
271.149	K	Anywhere	CLIP_TRAQ_3 (Isotopic label)
271.149	Y	Anywhere	CLIP_TRAQ_3 (Isotopic label)
271.149	n	N-Terminus	N-term CLIP_TRAQ_3 (Isotopic label)
268.105	T	C-Terminus	C-term L-threonyl-pentaglycyl-murein peptidoglycan (Other glycosylation)
268.105	A	C-Terminus	C-term L-alanyl-pentaglycyl-murein peptidoglycan (Glycosylation)
268.039	C	Anywhere	Nitroso Sulfamethoxazole semimercaptal thiol adduct (Chemical derivative)
267.031	C	Anywhere	Nitroso Sulfamethoxazole Sulfinamide thiol adduct (Chemical derivative)
266.261	C	Anywhere	S-stearoyl-L-cysteine (Post-Translational Modification)
266.203	K	Anywhere	retinal (Post-translational)
266.058	R	Anywhere	Adduct of phenylglyoxal with Arg (Chemical derivative)
264.188	K	Anywhere	3,4-didehydroretinylidene (Post-translational)
258.115	P	Anywhere	oxidized proline biotinylated with biotin hydrazide (Chemical derivative)
258.085	E	Anywhere	diglutamyl (Post-translational)
253.095	K	Anywhere	covalent modification of lysine by cross-linking reagent (Chemical derivative)
253.01	H	Anywhere	Mass Defect Tag on lysine e-amino (Artefact)
253.01	K	Anywhere	Mass Defect Tag on lysine e-amino (Chemical derivative)
253.01	W	Anywhere	Mass Defect Tag on lysine e-amino (Artefact)
253.01	Y	Anywhere	Mass Defect Tag on lysine e-amino (Artefact)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
252.044	C	Anywhere	Nitroso Sulfamethoxazole Sulphenamide thiol adduct (Chemical derivative)
251.793	Y	Anywhere	di-Iodination (Chemical derivative)
244.101	K	Anywhere	CLIP_TRAQ_4 (Isotopic label)
244.101	Y	Anywhere	CLIP_TRAQ_4 (Isotopic label)
244.101	n	N-Terminus	N-term CLIP_TRAQ_4 (Isotopic label)
242.019	S	Anywhere	phosphoglycosyl-D-mannose-1-phosphoryl (Other glycosylation)
241.088	K	Anywhere	oxidized Lysine biotinylated with biotin hydrazide (Chemical derivative)
240.115	C	Anywhere	lapachenole photochemically added to cysteine (Chemical derivative)
240.104	T	Anywhere	oxidized Threonine biotinylated with biotin hydrazide (Chemical derivative)
238.23	C	Anywhere	Palmitoylation (Post-translational)
238.23	K	Anywhere	Palmitoylation (Post-translational)
238.23	S	Anywhere	Palmitoylation (Post-translational)
238.23	T	Anywhere	Palmitoylation (Post-translational)
236.214	C	Anywhere	palmitoleyl (Post-translational)
236.157	C	Anywhere	Applied Biosystems cleavable ICAT(TM) heavy (Isotopic label)
234.162	C	Anywhere	Michael addition of t-butyl hydroxylated BHT (BHTOH) to C, H or K (Other)
234.162	H	Anywhere	Michael addition of t-butyl hydroxylated BHT (BHTOH) to C, H or K (Other)
234.162	K	Anywhere	Michael addition of t-butyl hydroxylated BHT (BHTOH) to C, H or K (Other)
233.051	K	Anywhere	5-dimethylaminonaphthalene-1-sulfonyl (Chemical derivative)
233.051	n	N-Terminus	N-term 5-dimethylaminonaphthalene-1-sulfonyl (Chemical derivative)
232.064	C	Anywhere	propyl-1,2-dideoxy-2-methyl-alpha-D-glucopyranosyl-[2,1-d]-Delta2-thiazoline (Other glycosylation)
229.163	K	Anywhere	Sixplex Tandem Mass Tag (Isotopic label)
229.163	n	N-Terminus	N-term Sixplex Tandem Mass Tag (Isotopic label)
229.014	K	Anywhere	Pyridoxal phosphate (Post-translational)
227.225	K	Anywhere	[3-(2,5)-Dioxopyrrolidin-1-yloxy-carbonyl]-propyl dimethyloctylammonium (Chemical derivative)
227.225	n	N-Terminus	N-term [3-(2,5)-Dioxopyrrolidin-1-yloxy-carbonyl]-propyl dimethyloctylammonium (Chemical derivative)
227.127	C	Anywhere	Applied Biosystems cleavable ICAT(TM) light (Isotopic label)
226.078	K	Anywhere	Biotinylation (Post-translational)
226.078	n	N-Terminus	N-term Biotinylation (Chemical derivative)
225.156	K	Anywhere	Duplex Tandem Mass Tag (Isotopic label)
225.156	n	N-Terminus	N-term Duplex Tandem Mass Tag (Isotopic label)
225.094	K	Anywhere	Iminobiotinylation (Chemical derivative)
225.094	n	N-Terminus	N-term Iminobiotinylation (Chemical derivative)
224.152	K	Anywhere	Native Tandem Mass Tag (Chemical derivative)
224.152	n	N-Terminus	N-term Native Tandem Mass Tag (Chemical derivative)
220.991	K	Anywhere	4-sulfophenyl isothiocyanate (Heavy C13) (Chemical derivative)
220.991	n	N-Terminus	N-term 4-sulfophenyl isothiocyanate (Heavy C13) (Chemical derivative)
220.183	C	Anywhere	hydroxyfarnesyl (Post-translational)
220.048	C	Anywhere	Addition of BMOE crosslinker (Chemical derivative)
219.074	P	Anywhere	O4-glycosyl-hydroxyproline (Other glycosylation)
218.167	C	Anywhere	Michael addition of BHT quinone methide to Cysteine and Lysine (Other)
218.167	H	Anywhere	Michael addition of BHT quinone methide to Cysteine and Lysine (Other)
218.167	K	Anywhere	Michael addition of BHT quinone methide to Cysteine and Lysine (Other)
214.99	C	Anywhere	Isotope Distribution Encoded Tag (Isotopic label)
214.971	K	Anywhere	4-sulfophenyl isothiocyanate (Chemical derivative)
214.971	n	N-Terminus	N-term 4-sulfophenyl isothiocyanate (Chemical derivative)
210.987	K	Anywhere	tri nitro benzene (Chemical derivative)
210.987	n	N-Terminus	N-term tri nitro benzene (Chemical derivative)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
210.198	C	Anywhere	Myristoylation (Post-translational)
210.198	G	N-Terminus	N-term Myristoylation (Post-translational)
210.198	K	Anywhere	Myristoylation (Post-translational)
204.188	C	Anywhere	Farnesylation (Post-translational)
203.998	K	Anywhere	Addition of DFDNB crosslinker (Chemical derivative)
203.998	N	Anywhere	Addition of DFDNB crosslinker (Chemical derivative)
203.998	Q	Anywhere	Addition of DFDNB crosslinker (Chemical derivative)
203.998	R	Anywhere	Addition of DFDNB crosslinker (Chemical derivative)
203.079	N	Anywhere	N-Acetylhexosamine (N-linked glycosylation)
203.079	S	Anywhere	N-Acetylhexosamine (Other glycosylation)
203.079	T	Anywhere	N-Acetylhexosamine (Other glycosylation)
201.971	C	Anywhere	Mercury Mercaptan (Chemical derivative)
199.067	R	Anywhere	oxidized Arginine biotinylated with biotin hydrazide (Chemical derivative)
197.045	E	Anywhere	glycerylphosphorylthanolamine (Post-translational)
192.063	K	Anywhere	Heptose (N-linked glycosylation)
192.063	N	Anywhere	Heptose (N-linked glycosylation)
192.063	Q	Anywhere	Heptose (N-linked glycosylation)
192.063	R	Anywhere	Heptose (N-linked glycosylation)
192.063	S	Anywhere	Heptose (O-linked glycosylation)
192.063	T	Anywhere	Heptose (O-linked glycosylation)
190.074	C	Anywhere	Monobromobimane derivative (Chemical derivative)
189.189	C	Anywhere	EAPTA d5 (Isotopic label)
188.033	K	Anywhere	Lipoyl (Post-translational)
187.084	S	Anywhere	O-acyl-beta-N-acetylglucosaminide (Post-translational)
184.158	C	Anywhere	EAPTA d0 (Chemical derivative)
183.983	n	N-Terminus	N-term derivatization by N-term modification using 3-Sulfobenzoic succinimidyl ester (Chemical derivative)
183.035	H	Anywhere	Aminoethylbenzenesulfonylation (Artefact)
183.035	K	Anywhere	Aminoethylbenzenesulfonylation (Artefact)
183.035	S	Anywhere	Aminoethylbenzenesulfonylation (Artefact)
183.035	Y	Anywhere	Aminoethylbenzenesulfonylation (Artefact)
178.048	P	Anywhere	O4-glycosyl-hydroxyproline (Other glycosylation)
176.032	S	Anywhere	N-glucuronylation (Post-translational)
175.042	K	Anywhere	naphthalene-2,3-dicarboxaldehyde (Chemical derivative)
175.042	n	N-Terminus	N-term naphthalene-2,3-dicarboxaldehyde (Chemical derivative)
174.169	C	Anywhere	APTA d3 (Isotopic label)
172.052	C	Anywhere	Menadione hydroquinone derivative (Chemical derivative)
172.052	K	Anywhere	Menadione hydroquinone derivative (Chemical derivative)
170.142	C	Anywhere	APTA-d0 (Chemical derivative)
170.048	K	Anywhere	6-aminoquinolyl-N-hydroxysuccinimidyl carbamate (Chemical derivative)
170.048	n	N-Terminus	N-term 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate (Chemical derivative)
170.037	C	Anywhere	Menadione quinone derivative (Chemical derivative)
170.037	K	Anywhere	Menadione quinone derivative (Chemical derivative)
167.982	C	Anywhere	Phosphoenolpyruvate cysteine adduct (Post-translational)
164.06	S	Anywhere	O-Diisopropylphosphorylation (Chemical derivative)
164.06	T	Anywhere	O-Diisopropylphosphorylation (Chemical derivative)
164.06	Y	Anywhere	O-Diisopropylphosphorylation (Chemical derivative)
162.081	S	Anywhere	O-pinacolylmethylphosphonylation (Chemical derivative)
162.081	T	Anywhere	O-pinacolylmethylphosphonylation (Chemical derivative)
162.081	Y	Anywhere	O-pinacolylmethylphosphonylation (Chemical derivative)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
162.053	C	Anywhere	Hexose (Other glycosylation)
162.053	K	Anywhere	Hexose (Other glycosylation)
162.053	N	Anywhere	Hexose (N-linked glycosylation)
162.053	R	Anywhere	Hexose (Other glycosylation)
162.053	T	Anywhere	Hexose (Other glycosylation)
162.053	W	Anywhere	Hexose (Other glycosylation)
162.053	Y	Anywhere	Hexose (Other glycosylation)
162.053	n	N-Terminus	N-term Hexose (Other glycosylation)
161.069	K	Anywhere	Hexosamine (Synth. pep. protect. gp.)
161.069	N	Anywhere	Hexosamine (N-linked glycosylation)
161.069	T	Anywhere	Hexosamine (O-linked glycosylation)
161.069	W	Anywhere	Hexosamine (N-linked glycosylation)
161.024	D	Anywhere	Heavy Sulfanilic Acid (SA) C13 (Chemical derivative)
161.024	E	Anywhere	Heavy Sulfanilic Acid (SA) C13 (Chemical derivative)
161.024	c	C-Terminus	C-term Heavy Sulfanilic Acid (SA) C13 (Chemical derivative)
159.009	W	Anywhere	Shimadzu NBS-13C (Chemical derivative)
158.131	C	Anywhere	reduced 4-Hydroxynonenal (Chemical derivative)
158.131	H	Anywhere	reduced 4-Hydroxynonenal (Chemical derivative)
158.131	K	Anywhere	reduced 4-Hydroxynonenal (Chemical derivative)
156.115	C	Anywhere	4-hydroxynonenal (HNE) (Post-translational)
156.115	H	Anywhere	4-hydroxynonenal (HNE) (Post-translational)
156.115	K	Anywhere	4-hydroxynonenal (HNE) (Post-translational)
155.821	Y	Anywhere	Dibromo (Chemical derivative)
155.004	D	Anywhere	Light Sulfanilic Acid (SA) C12 (Isotopic label)
155.004	E	Anywhere	Light Sulfanilic Acid (SA) C12 (Isotopic label)
155.004	c	C-Terminus	C-term Light Sulfanilic Acid (SA) C12 (Isotopic label)
154.136	S	Anywhere	lipid (Post-translational)
154.136	T	Anywhere	lipid (Post-translational)
154.111	K	Anywhere	One end of crosslink attached, one end free (Chemical derivative)
154.099	C	Anywhere	4-Oxononenal (ONE) (Chemical derivative)
154.099	H	Anywhere	4-Oxononenal (ONE) (Chemical derivative)
154.099	K	Anywhere	4-Oxononenal (ONE) (Chemical derivative)
154.003	S	Anywhere	glycerophospho (Post-translational)
152.988	W	Anywhere	Shimadzu NBS-12C (Chemical derivative)
150.042	C	Anywhere	S-guanylation-2 (Post-translational)
148.037	P	Anywhere	glycosyl-L-hydroxyproline (O-linked glycosylation)
146.058	S	Anywhere	Fucose (O-linked glycosylation)
146.058	T	Anywhere	Fucose (O-linked glycosylation)
146.037	C	Anywhere	hydroxycinnamyl (Post-translational)
145.02	K	Anywhere	3-(carbamidomethylthio)propanoyl (Chemical derivative)
144.106	K	Anywhere	Accurate mass for 114 (Isotopic label)
144.106	Y	Anywhere	Accurate mass for 114 (Isotopic label)
144.106	n	N-Terminus	N-term Accurate mass for 114 (Isotopic label)
144.102	K	Anywhere	Representative mass and accurate mass for 116 & 117 (Isotopic label)
144.102	Y	Anywhere	Representative mass and accurate mass for 116 & 117 (Isotopic label)
144.102	n	N-Terminus	N-term Representative mass and accurate mass for 116 & 117 (Isotopic label)
144.1	K	Anywhere	Accurate mass for 115 (Isotopic label)
144.1	Y	Anywhere	Accurate mass for 115 (Isotopic label)
144.1	n	N-Terminus	N-term Accurate mass for 115 (Isotopic label)
143.118	H	Anywhere	Diphthamide (Post-translational)
143.058	C	Anywhere	Nethylmaleimidehydrolysis (Chemical derivative)
143.058	K	Anywhere	Nethylmaleimidehydrolysis (Chemical derivative)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
142.039	S	Anywhere	Isotopically labeled Dithiothreitol (DTT) modification of serines or threonines (Isotopic label)
142.039	T	Anywhere	Isotopically labeled Dithiothreitol (DTT) modification of serines or threonines (Isotopic label)
141.098	K	Anywhere	CLIP_TRAQ_2 (Isotopic label)
141.098	Y	Anywhere	CLIP_TRAQ_2 (Isotopic label)
141.098	n	N-Terminus	N-term CLIP_TRAQ_2 (Isotopic label)
140.095	K	Anywhere	CLIP_TRAQ_1 (Isotopic label)
140.095	Y	Anywhere	CLIP_TRAQ_1 (Isotopic label)
140.095	n	N-Terminus	N-term CLIP_TRAQ_1 (Isotopic label)
138.104	C	Anywhere	Dehydrated 4-hydroxynonenal (Chemical derivative)
138.104	H	Anywhere	Dehydrated 4-hydroxynonenal (Chemical derivative)
138.104	K	Anywhere	Dehydrated 4-hydroxynonenal (Chemical derivative)
136.125	W	Anywhere	3'-geranyl-2',3'-dihydro-2',N2-cyclo-L-tryptophan (Post-translational)
136.089	C	Anywhere	Dehydrated 4-Oxononenal Michael adduct (Chemical derivative)
136.089	H	Anywhere	Dehydrated 4-Oxononenal Michael adduct (Chemical derivative)
136.089	K	Anywhere	Dehydrated 4-Oxononenal Michael adduct (Chemical derivative)
136.029	S	Anywhere	O-Diethylphosphorylation (Chemical derivative)
136.029	T	Anywhere	O-Diethylphosphorylation (Chemical derivative)
136.029	Y	Anywhere	O-Diethylphosphorylation (Chemical derivative)
136.002	S	Anywhere	Dithiothreitol (DTT) (Chemical derivative)
136.002	T	Anywhere	Dithiothreitol (DTT) (Chemical derivative)
135.983	n	N-Terminus	N-term sulfonation of N-terminus (Chemical derivative)
134.048	n	N-Terminus	N-term 3-methyl-2-pyridyl isocyanate (Chemical derivative)
132.042	S	Anywhere	O-glycosylserine (Other glycosylation)
132.021	R	Anywhere	Hydroxyphenylglyoxal arginine (Chemical derivative)
130.079	C	Anywhere	D5 N-ethylmaleimide on cysteines (Chemical derivative)
129.058	G	Anywhere	Gly->Trp substitution (AA substitution)
129.043	C	Anywhere	Nmethylmaleimidehydrolysis (Chemical derivative)
129.043	E	Anywhere	monoglutamyl (Post-translational)
127.063	K	Anywhere	N-Succinimidyl-3-morpholine acetate (Chemical derivative)
127.063	n	N-Terminus	N-term N-Succinimidyl-3-morpholine acetate (Chemical derivative)
126.104	S	Anywhere	octanoyl (Post-translational)
126.104	T	Anywhere	octanoyl (Post-translational)
126.068	K	N-Terminus	N-term Dipropionylated Amide (Methylated) (Post-translational)
126.062	C	Anywhere	Isotopically labeled Dithiothreitol (DTT) modification of cysteines (Isotopic label)
125.897	H	Anywhere	Iodination (Chemical derivative)
125.897	Y	Anywhere	Iodination (Chemical derivative)
125.048	C	Anywhere	N-ethylmaleimide on cysteines (Chemical derivative)
124.068	n	N-Terminus	N-term d5-phenyl isocyanate (Chemical derivative)
123.009	D	Anywhere	N-aspartyl-glycosylphosphatidylinositoethanolamine (Other glycosylation)
123.008	A	C-Terminus	C-term N-alanyl-glycosylphosphatidylinositoethanolamine (Glycosylation)
122.084	K	Anywhere	Both ends of crosslink attached to same peptide (Chemical derivative)
122.013	S	Anywhere	O-Isopropylphosphorylation (Chemical derivative)
122.013	T	Anywhere	O-Isopropylphosphorylation (Chemical derivative)
122.013	Y	Anywhere	O-Isopropylphosphorylation (Chemical derivative)
121.035	S	Anywhere	phosphorylation to pyridyl thiol (Chemical derivative)
121.035	T	Anywhere	phosphorylation to pyridyl thiol (Chemical derivative)
120.063	K	Anywhere	13C6 labeled ubiquitinylation residue (Isotopic label)
120.034	S	Anywhere	O-Isopropylmethylphosphonylation (Chemical derivative)
120.034	T	Anywhere	O-Isopropylmethylphosphonylation (Chemical derivative)
120.034	Y	Anywhere	O-Isopropylmethylphosphonylation (Chemical derivative)
120.025	C	Anywhere	Dithiothreitol (DTT) on Cys (Chemical derivative)
119.037	K	Anywhere	pyridylacetyl (Chemical derivative)
119.037	n	N-Terminus	N-term pyridylacetyl (Chemical derivative)
119.037	n	N-Terminus	N-term phenyl isocyanate (Chemical derivative)
119.004	C	Anywhere	Cysteinylation (Multiple)
118.068	K	Anywhere	Ubiquitination 13C4 lysine (Post-translational)
118.066	C	Anywhere	Dehydropyrolizidine alkaloid (dehydronecine) on cysteines (Chemical derivative)
116.939	H	Anywhere	tele-vanadatohistidine (Post-translational)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
114.043	C	Anywhere	ubiquitinylation residue (Other)
114.043	K	Anywhere	ubiquitinylation residue (Other)
114.043	S	Anywhere	ubiquitinylation residue (Other)
114.043	T	Anywhere	ubiquitinylation residue (Other)
112.052	K	Anywhere	Acrolein addition +112 (Other)
111.042	K	Anywhere	Bruker Daltonics SERVA-ICPL(TM) quantification chemistry, heavy form (Isotopic label)
111.042	n	N-Terminus	N-term Bruker Daltonics SERVA-ICPL(TM) quantification chemistry, heavy form (Isotopic label)
111.032	C	Anywhere	Nmethylnmaleimide (Chemical derivative)
111.032	K	Anywhere	Nmethylnmaleimide (Chemical derivative)
109.053	K	Anywhere	4-methyl-delta-1-pyrroline-5-carboxyl (Post-translational)
109.048	n	N-Terminus	N-term deuterated Nicotinic Acid (Isotopic label)
109.047	K	Anywhere	Bruker Daltonics SERVA-ICPL(TM) quantification chemistry, medium form (Isotopic label)
109.047	n	N-Terminus	N-term Bruker Daltonics SERVA-ICPL(TM) quantification chemistry, medium form (Isotopic label)
107.998	S	Anywhere	O-Dimethylphosphorylation (Chemical derivative)
107.998	S	Anywhere	O-Ethylphosphorylation (Chemical derivative)
107.998	T	Anywhere	O-Dimethylphosphorylation (Chemical derivative)
107.998	T	Anywhere	O-Ethylphosphorylation (Chemical derivative)
107.998	Y	Anywhere	O-Dimethylphosphorylation (Chemical derivative)
107.998	Y	Anywhere	O-Ethylphosphorylation (Chemical derivative)
105.058	C	Anywhere	S-pyridylethylolation (Chemical derivative)
105.021	K	Anywhere	Bruker Daltonics SERVA-ICPL(TM) quantification chemistry, light form (Isotopic label)
105.021	n	N-Terminus	N-term Bruker Daltonics SERVA-ICPL(TM) quantification chemistry, light form (Isotopic label)
105.021	n	N-Terminus	N-term Nicotinic Acid (Isotopic label)
104.041	K	N-Terminus	Succinic anhydride labeling reagent, heavy form (+4amu, 4H2), N-term & K (Isotopic label)
104.041	n	N-Terminus	N-term Succinic anhydride labeling reagent, heavy form (+4amu, 4H2), N-term & K (Isotopic label)
104.029	K	N-Terminus	Succinic anhydride labeling reagent, heavy form (+4amu, 4C13), N-term & K (Isotopic label)
104.029	n	N-Terminus	N-term Succinic anhydride labeling reagent, heavy form (+4amu, 4C13), N-term & K (Isotopic label)
104.026	K	N-Terminus	labeling reagent light form (N-term & K) (Isotopic label)
104.026	n	N-Terminus	N-term labeling reagent light form (N-term & K) (Isotopic label)
100.016	K	N-Terminus	Succinic anhydride labeling reagent light form (N-term & K) (Isotopic label)
100.016	n	N-Terminus	N-term Succinic anhydride labeling reagent light form (N-term & K) (Isotopic label)
99.0796	G	Anywhere	Gly->Arg substitution (AA substitution)
99.0684	C	Anywhere	N-isopropylcarboxamidomethyl (Chemical derivative)
99.0473	S	Anywhere	Ser->Trp substitution (AA substitution)
98.0743	K	N-Terminus	N-term Propionylated Amide (Trimethylated) (Post-translational)
98.0369	K	N-Terminus	N-term Propionylated Amide (Acetylated) (Post-translational)
97.9769	C	Anywhere	Phosphorylation (Post-translational)
97.9769	D	Anywhere	Phosphorylation (Post-translational)
97.9769	H	Anywhere	Phosphorylation (Post-translational)
97.9769	R	Anywhere	Phosphorylation (Post-translational)
97.9769	T	Anywhere	Phosphorylation (Post-translational)
97.9769	Y	Anywhere	Phosphorylation (Post-translational)
97.0164	C	Anywhere	maleimide (Chemical derivative)
97.0164	K	Anywhere	maleimide (Chemical derivative)
95.9435	S	Anywhere	Thiophosphorylation (Other)
95.9435	T	Anywhere	Thiophosphorylation (Other)
95.9435	Y	Anywhere	Thiophosphorylation (Other)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
94.0419	K	Anywhere	Acrolein addition +94 (Other)
93.982	S	Anywhere	O-Methylphosphorylation (Chemical derivative)
93.982	T	Anywhere	O-Methylphosphorylation (Chemical derivative)
93.982	Y	Anywhere	O-Methylphosphorylation (Chemical derivative)
90.0841	C	Anywhere	N-ethyl iodoacetamide-d5 (Isotopic label)
90.0841	Y	Anywhere	N-ethyl iodoacetamide-d5 (Isotopic label)
90.0317	H	Anywhere	N(epsilon)-histidine dihydroxyacetone adduct (Post-translational)
88.9965	Y	Anywhere	C13 label (Phosphotyrosine) (Isotopic label)
87.9983	K	N-Terminus	thioacylation of primary amines (N-term and Lys) (Other)
87.9983	n	N-Terminus	N-term thioacylation of primary amines (N-term and Lys) (Other)
87.0684	K	Anywhere	hypusine (Post-translational)
87.0507	S	Anywhere	phosphorylation to amine thiol (Chemical derivative)
87.0507	T	Anywhere	phosphorylation to amine thiol (Chemical derivative)
87.0143	K	Anywhere	dimethyl 3,3-dithiobispropionimidate (Chemical derivative)
87.0143	N	Anywhere	dimethyl 3,3-dithiobispropionimidate (Chemical derivative)
87.0143	Q	Anywhere	dimethyl 3,3-dithiobispropionimidate (Chemical derivative)
87.0143	R	Anywhere	dimethyl 3,3-dithiobispropionimidate (Chemical derivative)
86.0368	C	Anywhere	Michael addition of hydroxymethylvinyl ketone to cysteine (Chemical derivative)
86.0004	C	Anywhere	Malonylation of C and S residues (Chemical derivative)
86.0004	S	Anywhere	Malonylation of C and S residues (Chemical derivative)
85.0891	Q	Anywhere	Labeling transglutaminase substrate on glutamine side chain (Chemical derivative)
85.0528	C	Anywhere	N-ethyl iodoacetamide-d0 (Isotopic label)
85.0528	Y	Anywhere	N-ethyl iodoacetamide-d0 (Isotopic label)
84.0577	K	N-Terminus	N-term Propionylation (Dimethylated) (Post-translational)
83.0701	C	Anywhere	Cys->Trp substitution (AA substitution)
80.9851	R	Anywhere	Arginine replacement by Nitroimidazole ornithine (Chemical derivative)
79.9663	C	Anywhere	S-Phosphorylation (Post-translational)
79.9663	D	Anywhere	Beta-aspartyl phosphate (Post-translational)
79.9663	H	Anywhere	Phosphorylation (Post-translational)
79.9663	R	Anywhere	Phosphorylation (Post-translational)
79.9663	S	Anywhere	Phosphorylation (Post-translational)
79.9663	T	Anywhere	Phosphorylation (Post-translational)
79.9663	Y	Anywhere	Phosphorylation (Post-translational)
79.9568	C	Anywhere	O-Sulfonation (Post-translational)
79.9568	S	Anywhere	O-Sulfonation (Post-translational)
79.9568	T	Anywhere	O-Sulfonation (Post-translational)
79.9568	Y	Anywhere	O-Sulfonation (Post-translational)
79.9165	C	Anywhere	selenyl (Post-translational)
78.0469	K	Anywhere	2,5-dimethylpyrrole (Chemical derivative)
77.9871	S	Anywhere	Methylphosphonylation (Chemical derivative)
77.9871	T	Anywhere	Methylphosphonylation (Chemical derivative)
77.9871	Y	Anywhere	Methylphosphonylation (Chemical derivative)
77.9105	F	Anywhere	bromination (Post-translational)
77.9105	H	Anywhere	bromination (Post-translational)
77.9105	W	Anywhere	bromination (Post-translational)
76.0313	K	Anywhere	Acrolein addition +76 (Other)
76.0313	S	Anywhere	Ser->Tyr substitution (AA substitution)
75.9983	C	Anywhere	Cysteine mercaptoethanol (Chemical derivative)
75.9805	S	Anywhere	EDT (Chemical derivative)
75.9805	T	Anywhere	EDT (Chemical derivative)
75.9619	D	Anywhere	4-aspartylloxysulfanylcarbonate (Post-translational)
74.0559	C	Anywhere	Acrylamide d3 (Isotopic label)
72.9952	L	Anywhere	Leu->Trp substitution (AA substitution)
72.0626	K	Anywhere	IMID d4 (Isotopic label)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
72.0211	G	Anywhere	Gly->Glu substitution (AA substitution)
72.0211	K	Anywhere	carboxyethyl (Post-translational)
72.0211	R	Anywhere	Dihydroxy methylglyoxal adduct (Multiple)
71.0371	C	Anywhere	Acrylamide adduct (Artefact)
70.0419	C	Anywhere	Crotonaldehyde (Other)
70.0419	H	Anywhere	Crotonaldehyde (Other)
70.0419	K	Anywhere	Propionylation (Methylated) (Post-translational)
70.0055	K	Anywhere	N-pyruvic acid 2-iminyl (Post-translational)
69.0691	S	Anywhere	Ser->Arg substitution (AA substitution)
68.13	n	N-Terminus	N-term d9-4-trimethylammoniumbutyryl- (Isotopic label)
68.13	n	N-Terminus	N-term Quaternary amine labeling reagent heavy form (+9amu), N-term & K (Isotopic label)
68.0626	K	Anywhere	Piperidination (Chemical derivative)
68.0626	n	N-Terminus	N-term Piperidination (Chemical derivative)
68.0374	K	Anywhere	IMID d0 (Isotopic label)
65.1112	n	N-Terminus	N-term Quaternary amine labeling reagent heavy form (+6amu), N-term & K (Isotopic label)
63.0445	S	Anywhere	deuterium cysteamine modification to S or T (Isotopic label)
63.0445	T	Anywhere	deuterium cysteamine modification to S or T (Isotopic label)
62.0923	n	N-Terminus	N-term Quaternary amine labeling reagent heavy (+3amu) form, N-term & K (Isotopic label)
62.0157	K	Anywhere	MDA adduct +62 (Chemical derivative)
61.9218	D	Anywhere	Replacement of proton by copper (Artefact)
61.9218	E	Anywhere	Replacement of proton by copper (Artefact)
61.9218	c	C-Terminus	C-term Replacement of proton by copper (Artefact)
60.0541	C	Anywhere	Cys->Tyr substitution (AA substitution)
60.0364	S	Anywhere	Ser->Phe substitution (AA substitution)
60.0122	C	Anywhere	Iodoacetic acid derivative w/ 13C label (Chemical derivative)
59.0735	n	N-Terminus	N-term 4-trimethylammoniumbutyryl- (Isotopic label)
59.0735	n	N-Terminus	N-term Quaternary amine labeling reagent light form (N-term & K) (Isotopic label)
59.0497	K	Anywhere	5-hydroxy-N6,N6-trimethyl (Post-translational)
59.0483	P	Anywhere	Pro->Arg substitution (AA substitution)
59.045	K	Anywhere	Mono-methylated lysine labelled with Acetyl_heavy (Isotopic label)
59.0363	K	N-Terminus	Propionate labeling reagent heavy form (+3amu), N-term & K (Isotopic label)
59.0363	n	N-Terminus	N-term Propionate labeling reagent heavy form (+3amu), N-term & K (Isotopic label)
59.0194	S	Anywhere	aminoethylcysteine (Chemical derivative)
59.0194	T	Anywhere	aminoethylcysteine (Chemical derivative)
58.0055	A	Anywhere	Ala->Glu substitution (AA substitution)
58.0055	C	Anywhere	Iodoacetic acid derivative (Chemical derivative)
58.0055	G	Anywhere	Gly->Asp substitution (AA substitution)
58.0055	K	Anywhere	Iodoacetic acid derivative (Artefact)
58.0055	W	Anywhere	Iodoacetic acid derivative (Chemical derivative)
58.0055	n	N-Terminus	N-term Iodoacetic acid derivative (Artefact)
57.0215	C	Anywhere	Iodoacetamide derivaive (Chemical derivative)
57.0215	D	Anywhere	Iodoacetamide derivative (Artefact)
57.0215	E	Anywhere	Iodoacetamide derivative (Artefact)
57.0215	H	Anywhere	Iodoacetamide derivative (Artefact)
57.0215	K	Anywhere	Iodoacetamide derivative (Artefact)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
57.0215	n	N-Terminus	N-term Iodoacetamide derivative (Artefact)
56.0626	K	Anywhere	Diethylation, analogous to Dimethylation (Chemical derivative)
56.0626	n	N-Terminus	N-term Diethylation, analogous to Dimethylation (Chemical derivative)
56.0262	C	Anywhere	Acrolein addition +56 (Other)
56.0262	H	Anywhere	Acrolein addition +56 (Other)
56.0262	K	Anywhere	Acrolein addition +56 (Other)
56.0262	K	N-Terminus	Propionate labeling reagent light form (N-term & K) (Isotopic label)
56.0262	n	N-Terminus	N-term Propionate labeling reagent light form (N-term & K) (Isotopic label)
55.0534	T	Anywhere	Thr->Arg substitution (AA substitution)
54.0106	K	Anywhere	MDA adduct +54 (Chemical derivative)
54.0106	R	Anywhere	MDA adduct +54 (Chemical derivative)
53.9717	L	Anywhere	trifluoroisoleucine replacement of leucine (Non-standard residue)
53.0919	C	Anywhere	Cys->Arg substitution (AA substitution)
50.0248	K	Anywhere	Acetyl_13C(6) 15N(2) Silac label (Isotopic label)
49.0204	N	Anywhere	Asn->Tyr substitution (AA substitution)
48.0364	D	Anywhere	Asp->Tyr substitution (AA substitution)
48.0307	K	Anywhere	Acetyl_13C(6) Silac label (Isotopic label)
48	V	Anywhere	Val->Phe substitution (AA substitution)
47.9847	C	Anywhere	cysteine oxidation to cysteic acid (Chemical derivative)
47.9444	C	Anywhere	Selenium replaces sulphur (Non-standard residue)
47.9444	M	Anywhere	Selenium replaces sulphur (Non-standard residue)
46.0357	K	Anywhere	Acetyl 4,4,5,5-D4 Lysine (Isotopic label)
45.9877	C	Anywhere	Beta-methylthiolation (Multiple)
45.9877	D	Anywhere	Beta-methylthiolation (Post-translational)
45.9877	G	Anywhere	Gly->Cys substitution (AA substitution)
45.9877	N	Anywhere	Beta-methylthiolation (Post-translational)
45.0294	K	N-Terminus	Acetate labeling reagent (N-term & K) (heavy form, +3amu) (Isotopic label)
45.0294	n	N-Terminus	N-term Acetate labeling reagent (N-term & K) (heavy form, +3amu) (Isotopic label)
44.9851	W	Anywhere	Oxidation to nitro (Chemical derivative)
44.9851	Y	Anywhere	Oxidation to nitro (Chemical derivative)
44.0592	C	Anywhere	Cys->Phe substitution (AA substitution)
44.0262	C	Anywhere	Ethanolation of Cys (Chemical derivative)
44.0085	S	Anywhere	S-Ethylcysteine from Serine (Chemical derivative)
43.9898	A	Anywhere	Ala->Asp substitution (AA substitution)
43.9898	D	Anywhere	Carboxylation (Post-translational)
43.9898	E	Anywhere	Carboxylation (Post-translational)
43.9898	K	Anywhere	Carboxylation (Post-translational)
43.9898	W	Anywhere	Carboxylation (Chemical derivative)
43.0548	A	N-Terminus	N-term tri-Methylation (Post-translational)
43.0422	D	Anywhere	Carboxyl modification with ethanolamine (Chemical derivative)
43.0422	E	Anywhere	Carboxyl modification with ethanolamine (Chemical derivative)
43.0422	c	C-Terminus	C-term Carboxyl modification with ethanolamine (Chemical derivative)

Table 1: Universal list of modifications used with PILOT-PTM.

Monoisotopic Mass	Residue	Location	Name
43.017	I	Anywhere	Ile->Arg substitution (AA substitution)
43.017	L	Anywhere	Leu->Arg substitution (AA substitution)
43.0058	C	Anywhere	Carbamylation (Artefact)
43.0058	K	Anywhere	Carbamylation (Multiple)
43.0058	M	Anywhere	Carbamylation (Artefact)
43.0058	R	Anywhere	Carbamylation (Artefact)
43.0058	n	N-Terminus	N-term Carbamylation (Multiple)
42.047	G	Anywhere	Gly->Val substitution (AA substitution)
42.047	K	Anywhere	tri-Methylation (Post-translational)
42.047	R	Anywhere	tri-Methylation (Chemical derivative)
42.0218	C	Anywhere	amidino (Post-translational)
42.0218	K	Anywhere	Guanidination (Chemical derivative)
42.0106	C	Anywhere	Acetylation (Post-translational)
42.0106	H	Anywhere	Acetylation (Chemical derivative)
42.0106	K	Anywhere	Acetylation (Multiple)
42.0106	S	Anywhere	Acetylation (Post-translational)
42.0106	T	Anywhere	Acetylation (Post-translational)
42.0106	Y	Anywhere	Acetylation (Chemical derivative)
42.0106	n	N-Terminus	N-term Acetylation (Multiple)
41.0265	K	N-Terminus	amidination of lysines or N-terminal amines with methyl acetimidate (Chemical derivative)
41.0265	n	N-Terminus	N-term amidination of lysines or N-terminal amines with methyl acetimidate (Chemical derivative)
40.0313	H	Anywhere	Propionaldehyde +40 (Other)
40.0313	K	Anywhere	Propionaldehyde +40 (Other)
40.0061	P	Anywhere	Pro->His substitution (AA substitution)
39.9949	C	N-Terminus	N-term S-carbamoylmethylcysteine cyclization (N-terminus) (Artefact)
38.0157	K	Anywhere	Acrolein addition +38 (Other)
37.9559	D	Anywhere	Replacement of proton by potassium (Artefact)
37.9559	E	Anywhere	Replacement of proton by potassium (Artefact)
37.9559	c	C-Terminus	C-term Replacement of proton by potassium (Artefact)
36.0757	R	Anywhere	dimethylated arginine (Isotopic label)
34.0631	K	Anywhere	DiMethyl-C13HD2 (Isotopic label)
34.0631	n	N-Terminus	N-term DiMethyl-C13HD2 (Isotopic label)
33.9843	I	Anywhere	Ile->Phe substitution (AA substitution)
33.9843	L	Anywhere	Leu->Phe substitution (AA substitution)
33.961	W	Anywhere	Chlorination (Post-translational)
32.0564	K	Anywhere	DiMethyl-CHD2 (Isotopic label)
32.0564	n	N-Terminus	N-term DiMethyl-CHD2 (Isotopic label)
31.9898	C	Anywhere	dihydroxy (Post-translational)
31.9898	F	Anywhere	dihydroxy (Chemical derivative)
31.9898	K	Anywhere	dihydroxy (Post-translational)
31.9898	M	Anywhere	dihydroxy (Post-translational)
31.9898	P	Anywhere	dihydroxy (Post-translational)
31.9898	R	Anywhere	dihydroxy (Post-translational)
31.9898	W	Anywhere	dihydroxy (Chemical derivative)
31.9898	Y	Anywhere	dihydroxy (Post-translational)
31.9721	C	Anywhere	persulfide (Post-translational)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
31.9721	V	Anywhere	Val->Met substitution (AA substitution)
31.0058	P	Anywhere	Pro->Gln substitution (AA substitution)
30.0106	A	Anywhere	Ala->Thr substitution (AA substitution)
30.0106	G	Anywhere	Gly->Ser substitution (AA substitution)
30.0106	N	Anywhere	hydroxymethyl (Post-translational)
29.9928	T	Anywhere	Thr->Met substitution (AA substitution)
29.9782	R	Anywhere	Arg->Trp substitution (AA substitution)
29.9742	V	Anywhere	Val->Glu substitution (AA substitution)
29.9742	W	Anywhere	quinone (Post-translational)
29.9742	Y	Anywhere	quinone (Post-translational)
29.0391	P	Anywhere	Dimethylation of proline residue (Post-translational)
28.9902	C	Anywhere	S-nitrosylation (Post-translational)
28.0425	Q	Anywhere	Gln->Arg substitution (AA substitution)
28.0313	A	Anywhere	Ala->Val substitution (AA substitution)
28.0313	E	Anywhere	Ethylation (Artefact)
28.0313	H	Anywhere	Acetaldehyde +28 (Other)
28.0313	K	Anywhere	di-Methylation (Post-translational)
28.0313	K	Anywhere	Acetaldehyde +28 (Other)
28.0313	K	Anywhere	Ethylation (Multiple)
28.0313	N	Anywhere	di-Methylation (Post-translational)
28.0313	R	Anywhere	di-Methylation (Post-translational)
28.0313	n	N-Terminus	N-term Ethylation (Multiple)
28.0313	n	N-Terminus	N-term di-Methylation (Chemical derivative)
28.0061	K	Anywhere	Lys->Arg substitution (AA substitution)
27.9949	K	Anywhere	Formylation (Artefact)
27.9949	S	Anywhere	Formylation (Artefact)
27.9949	T	Anywhere	Formylation (Artefact)
27.9949	n	N-Terminus	N-term Formylation (Artefact)
27.0473	T	Anywhere	Thr->Lys substitution (AA substitution)
27.0109	S	Anywhere	Ser->Asn substitution (AA substitution)
26.052	S	Anywhere	Ser->Ile or Ser->Leu substitution (AA substitution)
26.0157	A	Anywhere	Ala->Pro substitution (AA substitution)
26.0157	H	Anywhere	Acetaldehyde +26 (Other)
26.0157	K	Anywhere	Acetaldehyde +26 (Other)
26.0044	H	Anywhere	His->Tyr substitution (AA substitution)
25.0606	M	Anywhere	Met->Arg substitution (AA substitution)
24.9952	C	Anywhere	cyano (Post-translational)
23.9748	L	Anywhere	Leu->His substitution (AA substitution)
23.016	N	Anywhere	Asn->His substitution (AA substitution)
22.032	D	Anywhere	Asp->His substitution (AA substitution)
21.9819	D	Anywhere	Sodium adduct (Artefact)
21.9819	E	Anywhere	Sodium adduct (Artefact)
21.9819	c	C-Terminus	C-term Sodium adduct (Artefact)
19.9898	W	Anywhere	tryptophan oxidation to hydroxykynurenin (Chemical derivative)
19.0422	H	Anywhere	His->Arg substitution (AA substitution)
18.0378	R	Anywhere	monomethylated arginine (Isotopic label)
17.9906	F	Anywhere	fluorophenylalanine replacement of phenylalanine (Non-standard residue)
17.9906	W	Anywhere	fluorophenylalanine replacement of phenylalanine (Non-standard residue)
17.9906	Y	Anywhere	fluorophenylalanine replacement of phenylalanine (Non-standard residue)
17.9564	I	Anywhere	Ile->Met substitution (AA substitution)
17.9564	L	Anywhere	Leu->Met substitution (AA substitution)
17.0707	K	Anywhere	13C(6) 15N(2) (D)9 SILAC label (Isotopic label)
17.0345	D	Anywhere	deuterated methyl ester (Isotopic label)
17.0345	E	Anywhere	deuterated methyl ester (Isotopic label)
17.0345	c	C-Terminus	C-term deuterated methyl ester (Isotopic label)
16.0313	P	Anywhere	Pro->Leu substitution (AA substitution)
16.0282	K	Anywhere	Deuterium Methylation of Lysine (Isotopic label)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
15.9949	A	Anywhere	Ala->Ser substitution (AA substitution)
15.9949	C	Anywhere	L-cysteine sulfenic acid (Post-translational)
15.9949	D	Anywhere	Hydroxylation (Post-translational)
15.9949	F	Anywhere	Phe->Tyr substitution (AA substitution)
15.9949	K	Anywhere	Hydroxylation (Post-translational)
15.9949	M	Anywhere	Oxidation (Chemical derivative)
15.9949	N	Anywhere	Hydroxylation (Post-translational)
15.9949	P	Anywhere	Hydroxylation (Post-translational)
15.9949	R	Anywhere	Hydroxylation (Post-translational)
15.9949	V	Anywhere	Hydroxylation (Post-translational)
15.9949	W	Anywhere	Oxidation (Chemical derivative)
15.9949	Y	Anywhere	Oxidation (Chemical derivative)
15.9772	G	Anywhere	1-Thioglycine
15.9772	S	Anywhere	Ser->Cys substitution (AA substitution)
15.9585	V	Anywhere	Val->Asp substitution (AA substitution)
15.0109	I	Anywhere	Ile->Lys substitution (AA substitution)
15.0109	Y	Anywhere	Tyrosine oxidation to 2-aminotyrosine (Chemical derivative)
14.9997	N	Anywhere	Deamidation followed by a methylation (Chemical derivative)
14.9997	Q	Anywhere	Deamidation followed by a methylation (Post-translational)
14.9745	L	Anywhere	Leu->Gln substitution (AA substitution)
14.9633	K	Anywhere	alpha-amino adipic acid (Post-translational)
14.052	N	Anywhere	Asn->Lys substitution (AA substitution)
14.0157	C	Anywhere	Methylation (Post-translational)
14.0157	D	Anywhere	Methylation (Post-translational)
14.0157	D	Anywhere	Asp->Glu substitution (AA substitution)
14.0157	E	Anywhere	Methylation (Post-translational)
14.0157	G	Anywhere	Gly->Ala substitution (AA substitution)
14.0157	H	Anywhere	Methylation (Post-translational)
14.0157	I	Anywhere	Methylation (Post-translational)
14.0157	K	Anywhere	Methylation (Post-translational)
14.0157	L	Anywhere	Methylation (Post-translational)
14.0157	N	Anywhere	Methylation (Post-translational)
14.0157	Q	Anywhere	Methylation (Post-translational)
14.0157	R	Anywhere	Methylation (Post-translational)
14.0157	S	Anywhere	Methylation (Post-translational)
14.0157	S	Anywhere	Ser->Thr substitution (AA substitution)
14.0157	T	Anywhere	Methylation (Post-translational)
14.0157	V	Anywhere	Val->Ile or Val->Leu substitution (AA substitution)
14.0157	c	C-Terminus	C-term Methylation (Multiple)
14.0157	n	N-Terminus	N-term Methylation (Chemical derivative)
13.9793	P	Anywhere	proline oxidation to pyroglutamic acid (Chemical derivative)
13.9793	W	Anywhere	Tryptophan oxidation to oxolactone (Chemical derivative)
13.0316	S	Anywhere	Michael addition with methylamine (Artefact)
13.0316	T	Anywhere	Michael addition with methylamine (Artefact)
12.9952	T	Anywhere	Thr->Asn substitution (AA substitution)
12.0364	T	Anywhere	Thr->Ile substitution (AA substitution)
10.0272	F	Anywhere	13C(9) 15N(1) Silac label (Isotopic label)
10.0209	R	Anywhere	13C(8) 15N(2) Silac label (Isotopic label)
10.0207	S	Anywhere	Ser->Pro substitution (AA substitution)
10.0083	R	Anywhere	13C(6) 15N(4) Silac label (Isotopic label)
9.03019	F	Anywhere	13C(9) Silac label (Isotopic label)
9.03019	Y	Anywhere	13C(9) Silac label (Isotopic label)
9.00033	Q	Anywhere	Gln->His substitution (AA substitution)
8.0142	K	Anywhere	13C(6) 15N(2) Silac label (Isotopic label)
7.01716	I	Anywhere	13C(6) 15N(1) Silac label (Isotopic label)
7.01716	L	Anywhere	13C(6) 15N(1) Silac label (Isotopic label)
6.02013	I	Anywhere	13C(6) Silac label (Isotopic label)
6.02013	K	Anywhere	13C(6) Silac label (Isotopic label)
6.02013	L	Anywhere	13C(6) Silac label (Isotopic label)
6.02013	R	Anywhere	13C(6) Silac label (Isotopic label)
6.01381	V	Anywhere	13C(5) 15N(1) Silac label (Isotopic label)
5.01677	P	Anywhere	13C(5) Silac label (Isotopic label)
4.02511	K	Anywhere	4,4,5,5-D4 Lysine (Isotopic label)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
4.00849	c	C-Terminus	C-term O18 label at both C-terminal oxygens (Isotopic label)
3.99492	P	Anywhere	Pro->Thr substitution (AA substitution)
3.99492	W	Anywhere	tryptophan oxidation to kynurenin (Chemical derivative)
3.01883	L	Anywhere	Trideuteration (Isotopic label)
3.01207	N	Anywhere	glycosylated asparagine 18O labeling (Isotopic label)
2.98826	N	Anywhere	Deamidation in presence of O18 (Isotopic label)
2.98826	Q	Anywhere	Deamidation in presence of O18 (Isotopic label)
2.94552	K	Anywhere	Lys->Met substitution (AA substitution)
2.00425	S	Anywhere	O18 Labeling (Isotopic label)
2.00425	T	Anywhere	O18 Labeling (Isotopic label)
2.00425	Y	Anywhere	O18 Labeling (Isotopic label)
2.00425	c	C-Terminus	C-term O18 Labeling (Isotopic label)
0.984016	N	Anywhere	Asn->Asp substitution (AA substitution)
0.984016	N	Anywhere	Deamidation (Artefact)
0.984016	Q	Anywhere	Deamidation (Artefact)
0.984016	Q	Anywhere	Gln->Glu substitution (AA substitution)
0.984016	R	Anywhere	Deamidation (Post-translational)
0.958863	I	Anywhere	Ile->Asn substitution (AA substitution)
0.94763	K	Anywhere	Lys->Glu substitution (AA substitution)
0.036386	Q	Anywhere	Gln->Lys substitution (AA substitution)
-0.036386	K	Anywhere	Lys->Gln substitution (AA substitution)
-0.94763	E	Anywhere	Glu->Lys substitution (AA substitution)
-0.958863	N	Anywhere	Asn->Ile substitution (AA substitution)
-0.984016	D	Anywhere	Asp->Asn substitution (AA substitution)
-0.984016	E	Anywhere	Glu->Gln substitution (AA substitution)
-0.984016	c	C-Terminus	C-term Amidation (Artefact)
-1.00783	C	Anywhere	Half of a disulfide bridge (Multiple)
-1.03163	K	Anywhere	Lysine oxidation to amino adipic semialdehyde (Post-translational)
-2.01565	S	Anywhere	2-amino-3-oxo-butanoic_acid (Post-translational)
-2.01565	T	Anywhere	2-amino-3-oxo-butanoic_acid (Chemical derivative)
-2.01565	Y	Anywhere	2-amino-3-oxo-butanoic_acid (Post-translational)
-2.94552	M	Anywhere	Met->Lys substitution (AA substitution)
-3.99492	T	Anywhere	Thr->Pro substitution (AA substitution)
-9.00033	H	Anywhere	His->Gln substitution (AA substitution)
-10.0207	P	Anywhere	Pro->Ser substitution (AA substitution)
-12.0364	I	Anywhere	Ile->Thr substitution (AA substitution)
-12.9952	N	Anywhere	Asn->Thr substitution (AA substitution)
-14.0157	A	Anywhere	Ala->Gly substitution (AA substitution)
-14.0157	E	Anywhere	Glu->Asp substitution (AA substitution)
-14.0157	I	Anywhere	Ile->Val substitution (AA substitution)
-14.0157	L	Anywhere	Leu->Val substitution (AA substitution)
-14.0157	T	Anywhere	Thr->Ser substitution (AA substitution)
-14.052	K	Anywhere	Lys->Asn substitution (AA substitution)
-14.9745	Q	Anywhere	Gln->Leu substitution (AA substitution)
-15.0109	K	Anywhere	Lys->Ile substitution (AA substitution)
-15.9585	D	Anywhere	Asp->Val substitution (AA substitution)
-15.9772	C	Anywhere	Cys->Ser substitution (AA substitution)
-15.9949	D	Anywhere	reduction (Post-translational)
-15.9949	S	Anywhere	reduction (Chemical derivative)
-15.9949	S	Anywhere	Ser->Ala substitution (AA substitution)
-15.9949	T	Anywhere	reduction (Chemical derivative)
-15.9949	Y	Anywhere	Tyr->Phe substitution (AA substitution)
-16.0313	L	Anywhere	Leu->Pro substitution (AA substitution)
-17.0265	C	N-Terminus	N-term Loss of ammonia (Artefact)
-17.0265	N	Anywhere	Loss of ammonia (Chemical derivative)
-17.0265	Q	N-Terminus	N-term Pyro-glu from Q (Artefact)
-17.9564	M	Anywhere	Met->Leu substitution (AA substitution)
-17.9564	M	Anywhere	Met->Ile substitution (AA substitution)
-17.9928	C	Anywhere	oxoalanine (Post-translational)
-18.0106	C	N-Terminus	N-term Dehydration (Artefact)
-18.0106	D	Anywhere	Dehydration (Chemical derivative)

Table 1: Universal list of modifications used with PILOT_PTM.

Monoisotopic Mass	Residue	Location	Name
-18.0106	E	N-Terminus	N-term Pyro-glu from E (Artefact)
-18.0106	S	Anywhere	Dehydration (Post-translational)
-18.0106	T	Anywhere	Dehydration (Post-translational)
-18.0106	Y	Anywhere	Dehydration (Post-translational)
-19.0422	R	Anywhere	Arg->His substitution (AA substitution)
-22.032	H	Anywhere	histidine oxidation to aspartic acid (AA substitution)
-23.016	H	Anywhere	histidine oxidation to asparagine (AA substitution)
-23.9748	H	Anywhere	His->Leu substitution (AA substitution)
-25.0606	R	Anywhere	Arg->Met substitution (AA substitution)
-26.0044	Y	Anywhere	Tyr->His substitution (AA substitution)
-26.0157	P	Anywhere	Pro->Ala substitution (AA substitution)
-26.052	I	Anywhere	Ile->Ser substitution (AA substitution)
-26.052	L	Anywhere	Leu->Ser substitution (AA substitution)
-27.0109	N	Anywhere	Asn->Ser substitution (AA substitution)
-27.0473	K	Anywhere	Lys->Thr substitution (AA substitution)
-27.9949	P	Anywhere	Pyrrolidone from Proline (Chemical derivative)
-28.0061	R	Anywhere	Arg->Lys substitution (AA substitution)
-28.0313	V	Anywhere	Val->Ala substitution (AA substitution)
-28.0425	R	Anywhere	Arg->Gln substitution (AA substitution)
-29.0027	c	C-Terminus	C-term ISD a-series (C-Term) (Other)
-29.9742	E	Anywhere	Glu->Val substitution (AA substitution)
-29.9782	W	Anywhere	Trp->Arg substitution (AA substitution)
-29.9928	M	Anywhere	Met->Thr substitution (AA substitution)
-29.9928	M	C-Terminus	C-term Homoserine (Chemical derivative)
-30.0106	P	Anywhere	Proline oxidation to pyrrolidinone (Chemical derivative)
-30.0106	S	Anywhere	Ser->Gly substitution (AA substitution)
-30.0106	T	Anywhere	Thr->Ala substitution (AA substitution)
-31.0058	Q	Anywhere	Gln->Pro substitution (AA substitution)
-31.9721	M	Anywhere	Met->Val substitution (AA substitution)
-33.9843	F	Anywhere	Phe->Ile or Phe->Leu substitution (AA substitution)
-33.9877	C	Anywhere	Dehydroalanine (from Cysteine) (Chemical derivative)
-40.0061	H	Anywhere	His->Pro substitution (AA substitution)
-42.0218	R	Anywhere	Ornithine from Arginine (Artefact)
-42.047	V	Anywhere	Val->Gly substitution (AA substitution)
-43.017	R	Anywhere	Arg->Ile or Arg->Leu substitution (AA substitution)
-43.0534	R	Anywhere	Arginine oxidation to glutamic semialdehyde (Chemical derivative)
-43.9898	D	Anywhere	Asp->Ala substitution (AA substitution)
-44.0592	F	Anywhere	Phe->Cys substitution (AA substitution)
-45.9877	C	Anywhere	Cys->Gly substitution (AA substitution)
-48	F	Anywhere	Phe->Val substitution (AA substitution)
-48.0034	M	C-Terminus	C-term Homoserine lactone (Chemical derivative)
-48.0034	M	Anywhere	Prompt loss of side chain from oxidised Met (Artefact)
-48.0364	Y	Anywhere	Tyr->Asp substitution (AA substitution)
-49.0204	Y	Anywhere	Tyr->Asn substitution (AA substitution)
-53.0919	R	Anywhere	Arg->Cys substitution (AA substitution)
-55.0534	R	Anywhere	Arg->Thr substitution (AA substitution)
-58.0055	D	Anywhere	Asp->Gly substitution (AA substitution)
-58.0055	E	Anywhere	Glu->Ala substitution (AA substitution)
-58.0055	G	C-Terminus	C-term Enzymatic glycine removal leaving an amidated C-terminus (Post-translational)
-59.0483	R	Anywhere	Arg->Pro substitution (AA substitution)
-60.0364	F	Anywhere	Phe->Ser substitution (AA substitution)
-60.0541	Y	Anywhere	Tyr->Cys substitution (AA substitution)
-69.0691	R	Anywhere	Arg->Ser substitution (AA substitution)
-72.0211	E	Anywhere	Glu->Gly substitution (AA substitution)
-72.9952	W	Anywhere	Trp->Leu substitution (AA substitution)
-76.0313	Y	Anywhere	Tyr->Ser substitution (AA substitution)
-83.0701	W	Anywhere	Trp->Cys substitution (AA substitution)
-94.0419	Y	Anywhere	Dehydroalanine (from Tyrosine) (Post-translational)
-99.0473	W	Anywhere	Trp->Ser substitution (AA substitution)
-99.0796	R	Anywhere	Arg->Gly substitution (AA substitution)
-129.058	W	Anywhere	Trp->Gly substitution (AA substitution)