

Mass changes due to some posttranslational modifications of peptides and proteins

Modification	Monoisotopic mass change	Average mass change
Homoserine formed from Met by CNBr treatment	-29.9928	-30.0935
Pyroglutamic acid formed from Gln	-17.0265	-17.0306
Disulphide bond formation	-2.0157	-2.0159
C-terminal amide formed from Gly	-0.9840	-0.9847
Deamidation of Asn and Gln	-0.9840	-0.9847
Methylation	14.0157	14.0269
Hydroxylation	15.9949	15.9994
Oxidation of Met	15.9949	15.9994
Proteolysis of a single peptide bond	18.0106	18.0153
Formylation	27.9949	28.0104
Acetylation	42.0106	42.0373
Carboxylation of Asp and Glu	43.9898	44.0098
Phosphorylation	79.9663	79.9799
Sulphation	79.9568	80.0642
Cysteinylation	119.0041	119.1442
Pentoses (Ara, Rib, Xyl)	132.0423	132.1161
Deoxyhexoses (Fuc, Rha)	146.0579	146.1430
Hexosamines (GalN, GlcN)	161.0688	161.1577
Hexoses (Fru, Gal, Glc, Man)	162.0528	162.1424
Lipoic acid (amide bond to lysine)	188.0330	188.3147
N-acetylhexosamines (GalNAc, GlcNAc)	203.0794	203.1950
Farnesylation	204.1878	204.3556
Myristoylation	210.1984	210.3598
Biotinylation (amide bond to lysine)	226.0776	226.2994
Pyridoxal phosphate (Schiff Base formed to lysine)	231.0297	231.1449
Palmitoylation	238.2297	238.4136
Stearoylation	266.2610	266.4674
Geranylgeranylation	272.2505	272.4741
N-acetylneuraminic acid (Sialic acid, NeuAc, NANA, SA)	291.0954	291.2579
Glutathionylation	305.0682	305.3117
N-glycolylneuraminic acid (NeuGc)	307.0903	307.2573
5'-Adenosylation	329.0525	329.2091
4'-Phosphopantetheine	339.0780	339.3294
ADP-ribosylation (from NAD)	541.0611	541.3052
<i>Adventitious modifications</i>		
acrylamide	71.0371	71.0788
glutathione	304.0712	304.3038
β -mercaptoethanol	75.9983	76.1192

Adapted from Burlingame and Carr 1996.