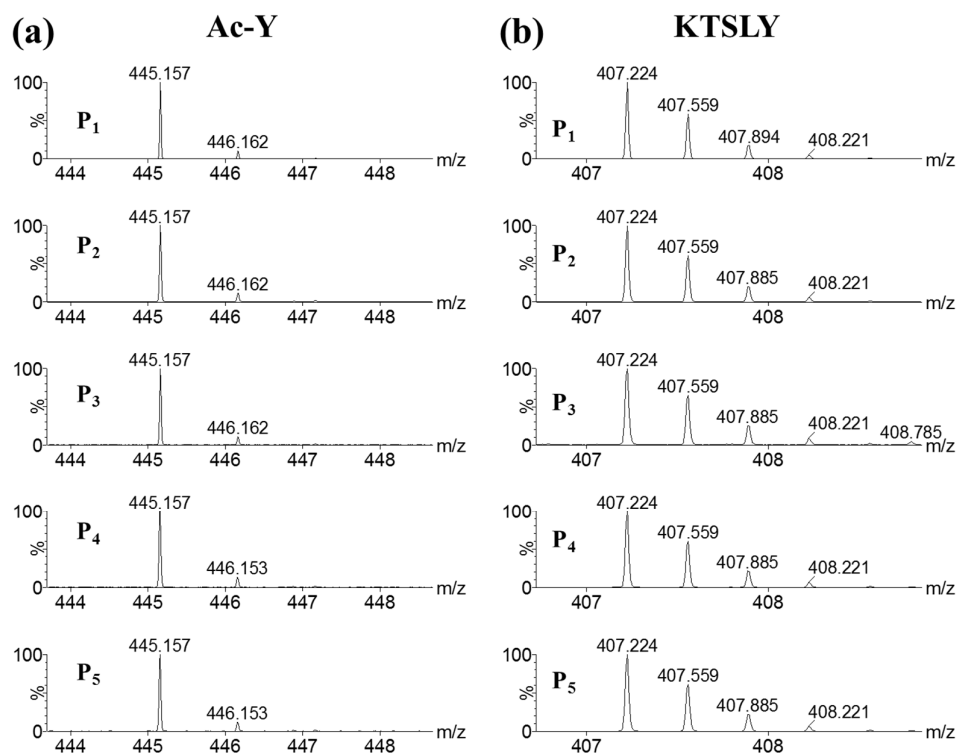
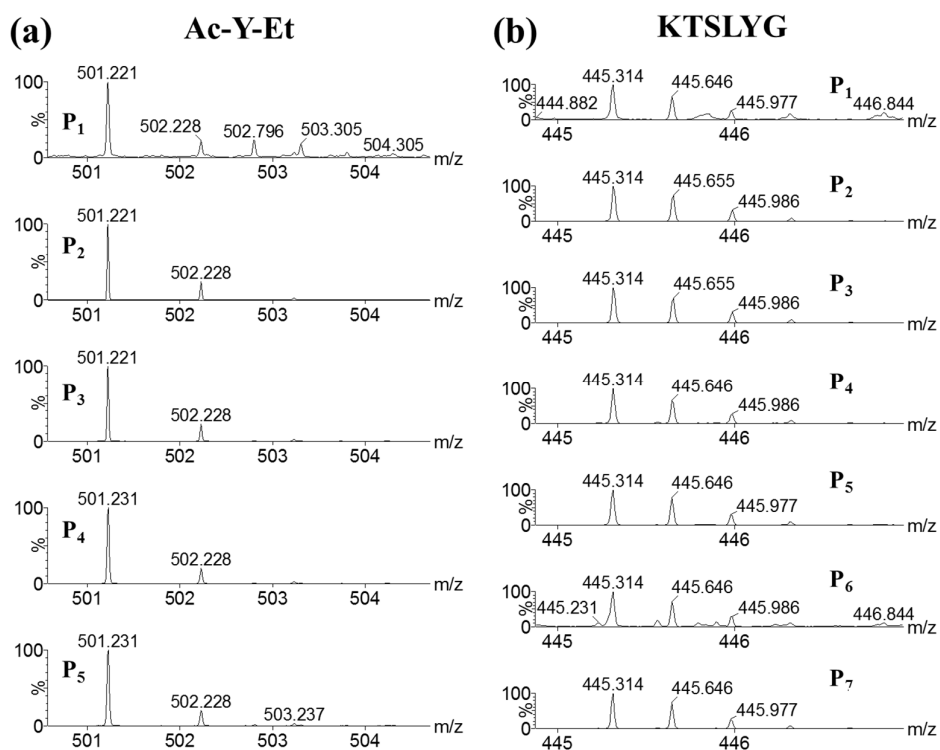




## Supplementary Materials



**Figure S1:** Oxidation of Ac-Y (a) and KTSLY peptide (b) in H<sub>2</sub>O. Full scan MS spectra extracted at RT of dimers.



**Figure S2:** Oxidation of Ac-Y-Et (a) and KTSLYG peptide (b) in H<sub>2</sub>O. Full scan MS spectra extracted at RT of dimers.

Species	Monoisotopic <i>m/z</i>	Dimer		
		$[M + xH]_{dimer}^{x+} = \frac{2 * M_{monomer} - 2 * M(H) + x * M(H)}{x}$		
	Monomer (theoretical)	[M+H] <sup>+</sup> (theoretical)	Selected [M+xH] <sup>x+</sup> (theoretical)	Detected [M+xH] <sup>x+</sup> (experimental)
Ac-Y	223.085	445.161 <sup>+</sup>	445.161 <sup>+</sup>	445.157 <sup>+</sup>
Ac-Y-Et	251.116	501.224 <sup>+</sup>	501.224 <sup>+</sup>	501.223 <sup>+</sup>
KTSLY peptide	611.341	1219.657 <sup>+</sup>	407.224 <sup>3+</sup>	407.235 <sup>3+</sup>
KTSLYG peptide	668.362	1333.700 <sup>+</sup>	445.238 <sup>3+</sup>	445.314 <sup>3+</sup>
<sup>168</sup> KTSLY <sup>172</sup> in CEN2	611.341	1219.657 <sup>+</sup>	610.332 <sup>2+</sup> [M+2H+1] 610.836 <sup>2+</sup>	610.336 <sup>2+</sup> [M+2H+1] 610.832 <sup>2+</sup>
<sup>92</sup> V-R <sup>107</sup> in CaM	1753.864	3506.719 <sup>+</sup>	702.150 <sup>5+</sup>	702.144 <sup>5+</sup>
<sup>92</sup> V-R <sup>107</sup> in CaM <sup>128</sup> E-K <sup>149</sup> in CaM	1753.864 2489.073	4241.928 <sup>+</sup>	849.191 <sup>5+</sup>	849.178 <sup>5+</sup>

**Table S1:** Theoretical and experimental *m/z* of considered species.

		P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	P <sub>5</sub>	P <sub>6</sub>	P <sub>7</sub>
<b>Ac-Y</b>	T0	0.03	0.70	0.94	-0.01	ND	-	-
	T48	-0.01	ND	ND	-0.02	<b>2.24</b>	-	-
<b>KTSLY</b>	T0	0.09	0.87	0.75	0.09	1.35	-	-
	T5	0.05	1.59	1.64	0.07	<b>3.26</b>	-	-
	T48	0.10	ND	ND	0.07	<b>3.85</b>	-	-
<b>Ac-Y-Et</b>	T0	0.86	0.39	1.56	0.01	-0.04	-	-
	T48	ND	-0.03	<b>2.70</b>	0.01	<b>2.66</b>	-	-
<b>KTSLYG</b>	T0	0.06	0.70	1.83	0.14	1.44	ND	ND
	T72	0.01	ND	<b>3.49</b>	0.01	<b>3.53</b>	<b>3.44</b>	<b>2.93</b>

**Table S2:** Average deuterium incorporation after H/D exchange for the different chromatographic peaks.