

**Figure S1.** The fragment of the ESI-MS spectrum showing the isotope distribution of the peak at m/z = 1153.03 and simulation, corresponding to the free ligand (L1) Ac-<sub>101</sub>DHHLAHIVVDAIAHASEDRR<sub>120</sub>.



**Figure S2.** ESI-MS spectrum of a metal-ligand system composed of  $Ac_{101}DHALAHIVVDAIAHASEDRR_{120}$  peptide (L2) and zinc(II) ions in the m/z 1105-1160 range at pH 7 [M:L = 1:1.5]. The simulated and experimental isotopic distribution spectra of the peak at m/z = 1152.99 are presented in the upper right corner.



**Figure S3.** The fragment of the ESI-MS spectrum showing the isotope distribution of the peak at m/z = 1120.02 and simulation, corresponding to the free ligand (L2) Ac-101 DHALAHIVVDAIAHASEDRR<sub>120</sub>.



**Figure S4.** ESI-MS spectrum of a metal-ligand system composed of  $Ac_{101}DHHLAHIVVDAIAAASEDRR_{120}$  peptide (L3) and zinc(II) ions in the m/z 1120-1160 range at pH 7 [M:L = 1:1.5]. The simulated and experimental isotopic distribution spectra of the peak at m/z = 1153.03 are presented in the right corner.



**Figure S5.** The fragment of the ESI-MS spectrum showing the isotope distribution of the peak at m/z = 1120.02 and simulation, corresponding to the free ligand (L3) Ac-<sub>101</sub>DHHLAHIVVDAIAAASEDRR<sub>120</sub>.



**Figure S6.** ESI-MS spectrum of a metal-ligand system composed of  $Ac_{116}DHHLAHIVLDAVAHAGEDAI_{135}$  peptide (L4) and zinc(II) ions in the m/z 1055-1405 range at pH 7 [M:L = 1:1.5]. The simulated and experimental isotopic distribution spectra of the peak at m/z = 1106.96 are presented in the right corner.



**Figure S7.** The fragment of the ESI-MS spectrum showing the isotope distribution of the peak at m/z = 1073.99 and simulation, corresponding to the free ligand (L4) Ac-<sub>116</sub>DHHLAHIVLDAVAHAGEDAI<sub>135</sub>.