Does electron capture dissociation (ECD) provide quantitative information on the chemical modification of lysine side chains in proteins? The glycation of ubiquitin.

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Streszczenie

Electron capture dissociation (ECD) as a method of quantitative and qualitative study of glycated ubiquitin was investigated. ECD has been successfully applied for sequencing of modified peptides and assigning glycated Lys residues. By using a hybrid Fourier transform mass spectrometry (FT-MS) system equipped for ECD, a series of multiply glycated ubiquitin ions was observed. Ions of the glycated ubiquitin with a defined number of glucose moieties attached to the protein were isolated by quadrupol and fragmented in the ICR cell by the ECD method. The fragmentation spectrum was dominated by c_n and $(z+1)_n$ ions. The ECD technique was tested for the quantitative analysis of the modified ubiquitin and isomeric glycated peptides (fragments of bovine serum albumin (BSA)). Obtained results indicate that the ECD fragmentation cannot be applied for the quantitative determination of the relative reactivities of respective Lys residues in the ubiquitin.

Adres publiczny

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https://www.acs.org/content/acs/en.html