

Isobaric duplex based on a combination of $^{16}\text{O}/^{18}\text{O}$ enzymatic exchange and labeling with pyrylium salts.

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Streszczenie

Enzymatic ^{18}O exchange, the well-established approach in comparative proteomics, has some disadvantages such as back exchange of labeled oxygen and overlapping the peak of a labeled peptide with isotopic peaks of an unlabeled one. Herein we demonstrated a simple procedure in which samples digested with a trypsin (with and without H_2^{18}O) were reacted with unlabeled and quadrupled ^{13}C -labeled pyrylium salt respectively which results in formation of pyridinium cations. Thus, each isobarically labeled peptide containing zero or four ^{13}C atoms in the mass reporter group, during tandem MS/MS forms an unique reporter ion useful for a relative quantitation. Such a sample treatment improves the signal to noise ratio, reduces overlapping of the isotopic peaks and completely eliminates the back exchange problem.

Słowa kluczowe

Isobaric labeling, Pyrylium salt, ^{18}O , Ionization enhancers

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