

Synthesis and mass spectrometry analysis of quaternary cryptando-peptidic conjugates.

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Rok wydania

2015

Czasopismo

Journal of Peptide Science

Numer woluminu

21

Strony

879-886

DOI

10.1002/psc.2830

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The bicyclic amines in the form of cryptands, the crown ether analogs, were used in the synthesis of cryptando-peptidic conjugates with simultaneous formation of quaternary ammonium nitrogen moiety. A series of model cryptando-peptidic conjugates at the peptide N-terminus was efficiently prepared by the standard Fmoc solid phase synthesis. Tandem mass spectrometric analysis of the obtained conjugates has shown the specific fragmentation pattern during MS/MS experiment. The obtained cryptandic quaternary ammonium group undergoes the Hofmann elimination during collision-induced dissociation fragmentation followed by the ethoxyl group elimination. The presented quaternization of cryptands by iodoacetylated peptides is relatively easy and compatible with standard solid-phase peptide synthesis. Additionally, the applicability of such peptide derivatives and their isotopologues selectively deuterated at the α -carbon in the quantitative LC-MS analysis was analyzed.

Słowa kluczowe

cryptands, fixed charge tags, ESI-MS/MS, HDX, quantitative analysis

Adres publiczny

<http://dx.doi.org/10.1002/psc.2830>

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