conferenceseries.com

4th World Congress on

MASS SPECTROMETRY June 19-21, 2017 London, UK

Structural investigation of organic compounds and their complexes by ESI MS/MS

Nives Galić University of Zagreb, Croatia

The application of electrospray tandem mass spectrometry (ESI MS/MS) in organic analysis as well as in pharmaceutical industry will be presented and discussed on several examples as follows: Structural isomers of aromatic hydrazones derived from nicotinic acid hydrazide were identified due to comprehensive study of their fragmentation pathways. Isomers derived from 3- and 4-hydroxy salicylaldehyde, as well as those derived from 3- and 5-chloro salicylaldehyde were distinguished due to ortho effect. The MS/MS spectra and fragmentation pathways of compounds derived from 3- and 4-methoxy salicylaldehyde differ due to enol imino-keto amino-tautomeric interconversion of one isomer; peptidocalixarenes bearing tryptophan, phenylglycine and leucine at the lower rim and their complexes with alkali-metal (Li+, Na+, K+, Rb+, Cs+) and selected lanthanide cations (La3+, Ce3+, Eu3+, Yb3+) were analyzed by ESI MS/MS. The results of MS analysis were in accordance with those obtained by other techniques (spectrophotometric, potentiometric, and conductometric titrations). The MS/MS experiments could be used as fast and sensitive method for prediction of relative stabilities of calixarene complexes with metal ions; bivalirudin, a synthetic oligo-peptide, is used as anticoagulant for patients with acute coronary syndromes or patients undergoing percutaneous coronary intervention. Forced degradation studies were performed using acid, base, H₂O₂, heat and light exposure as recommended by the International Conference on Harmonization (ICH). An UPLC method with UV detection for determination of bivalirudin in the presence of its degradation products has been developed. However, for the identification of degradation products the 2D LC MS/MS system should be used.

Biography

Nives Galić completed her BSc in Chemistry in 1992 at University of Zagreb; MSc in 1995 and; PhD in Analytical Chemistry in 1999. In 2011, she was elected for the position of Associate Professor and became Head of the Division of Analytical Chemistry. She has published over 30 papers which have been cited over 700 times. She was supervisor of 25 diploma thesis and two PhD theses (+ 6 in progress). She is a Leader of the project funded by Croatian Science Foundation.

ngalic@chem.pmf.hr

Notes: