

4th World Congress on

MASS SPECTROMETRY

June 19-21, 2017 London, UK

***Marek M Kowalczyk****University of Wolverhampton, UK*

Multistage Mass Spectrometry for Characterization of Bioactive Oligoesters

Chemical modifications of bacterial polyhydroxyalkanoates (PHA) in order to introduce functional groups, that cannot be easily achieved by bioconversion processes, is a valuable challenge since chemically modified PHA can be utilized as multifunctional biomaterials. On the other hand, incorporation of bioactive compounds into the β -lactones structure may lead to (homo) and (co)oligoesters with a bioactive moiety covalently linked as pendent groups along an oligomer backbone. This synthetic strategy enables preparation of the natural PHA analogues with ibuprofen pendant groups, pesticide moieties and recently antioxidants used in cosmetics. Contemporary reports on the molecular level characterization of bioactive oligomers derived from natural PHA and their synthetic analogues, formed through anionic ring-opening polymerization (ROP) of β -substituted β -lactones, will be presented. Mass spectrometry studies of such oligomers will be discussed. The undertaken approaches enable design of novel biodegradable and bioactive oligomers for diverse applications in medicine, cosmetic industry and agrichemistry.

Biography

Marek M Kowalczyk received his Ph.D. degree in 1984 from the Faculty of Chemistry, Silesian University of Technology, and D.Sc. degree in 1994 at the same University. He was a visiting lecturer at the University of Massachusetts in Amherst, MA, U.S.A. in 1990 and Marie Curie EU fellow at the University of Bologna, Italy. Currently, he is professor at the University of Wolverhampton, UK and at the Centre of Polymer and Carbon Materials, Polish Academy of Sciences, Zabrze, Poland. He is the author and co-author of over 140 scientific papers and a score of patents.

M.Kowalczyk@wlv.ac.uk
cchpmk@poczta.ck.gliwice.pl

Notes: