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Application of bio tests in packaging migration studies



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Currently, a vast majority of products is sold in such packaging as plastics, paper, glass, metal and composite materials. Despite clear benefits of these materials, their long-term use has shown some cons. The issue of food packaging safety is regulated by the EU and domestic legislations. Nevertheless, numerous studies have proven that small-molecule components of packaging may be eluted from the internal layer of a material due to presence of the medium stored. These facts caused that issues related to the migration of xenobiotics and factors that influence the intensification of the process have become one of the leading topics of interest for researchers. Actions are being taken mainly to identify and quantitatively determine the compounds released and eventually assess risk to humans. Unfortunately, much less attention has been given to determination of toxic effect caused by released xenobiotics. The main advantage of *in vitro* bioassays is the possibility of specifying the actual influence of overall migrates, considering most of interactions occurring between pollutants released. This is particularly important in consideration of the fact that we currently know that compounds coexisting in the mixture may interact and cause the increase (synergism) or decrease (antagonism) of the final effect. The main objective of the research was to evaluate the toxicity and endocrine potential of the compounds released to stimulants medium from metal and multilayer packages using biological tests. Additionally, in order to determine changes in surface of testing materials FTIR spectra was performed.

Biography

Natalia Szczepańska has completed her MSc from Faculty of Chemistry of Gdańsk University of Technology. She is pursuing her PhD in the Department of Analytical Chemistry of GUT since 2014. She is co-author of 14 papers published in international journals from the JCR list and co-author of two book chapters published by world-wide recognized editors. Her major research interests include determination of toxic and endocrine effect of substances migrating from food contact materials and baby products.

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