

**P80 - First approach on the stability and bioaccessibility of epoxy-resin contaminants from packaging materials in food**

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Epoxy-based coatings applied to the inner surfaces of cans into contact with foods represent an important source of contamination through the migration of chemicals into food. The present study was focused on the main compound in epoxy resins, Bisphenol A DiGlycidyl Ether (BADGE), which results from the condensation of epichlorohydrin and bisphenol A (BPA)

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The aim of this work was to evaluate the in vitro bioaccessibility of BADGE, as well as to study its chemical stability during the gastrointestinal digestion process following the standardized INFOGEST protocol <sup>2</sup>. A suitable chromatographic method was developed to identify the compounds of interest and evaluate the effect of the food matrix components, such as the presence of amino acids, as well as the activity of enzymes on BADGE bioaccessibility. The results showed that 60% of BADGE ingested is bioaccessible for its absorption after digestion. The presence of amino acids does not seem to significantly affect the final bioaccessibility once in the digestive tract (around 50%), except in the case of histidine (18%). The formation of small amounts of products derived from BADGE with chlorohydrins (BADGE·HCL and BADGE·2HCl) was observed at the gastric phase, though its bioaccessibility was reduced during the intestinal phase. Further research should be carried out to study different pH conditions and evaluate the effect of other food matrices on the BADGE-related compounds formation during gastrointestinal digestion with potential toxicity.

**References:**

<sup>1</sup> Poças, M. F., & Hogg, T. (2007). Trends in Food Science & Technology, 18, 219-230.

<sup>2</sup> Minekus M, et al. (2014). Food & function, 5, 1113-1124

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