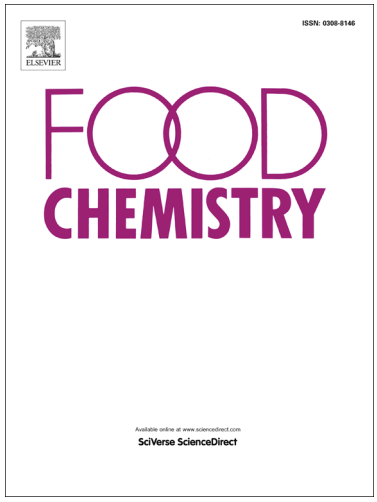

Assessment of the bacterial impact on the post-mortem formation of zinc protoporphyrin IX in pork meat

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PII: S0308-8146(18)30054-2
DOI: https://doi.org/10.1016/j.foodchem.2018.01.045
Reference: FOCH 22234

To appear in: *Food Chemistry*

Received Date: 11 August 2017
Revised Date: 22 December 2017
Accepted Date: 4 January 2018

Please cite this article as: Khozroughi, A.G., Kroh, L.W., Schlüter, O., Rawel, H., Assessment of the bacterial impact on the post-mortem formation of zinc protoporphyrin IX in pork meat, *Food Chemistry* (2018), doi: https://doi.org/10.1016/j.foodchem.2018.01.045

Assessment of the bacterial impact on the post-mortem formation of zinc protoporphyrin IX in pork meat

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Abstract

The post-mortem accumulation of the heme biosynthesis metabolite zinc protoporphyrin IX (ZnPP) in porcine muscle is associated with both a meat-inherent and a bacterial enzymatic reaction during meat storage. To estimate the bacterial impact on ZnPP formation, meat and meat-like media were investigated by HPLC-FLD (and MALDI-TOF-MS) after inoculation with a representative microorganism (*P. fluorescens*). Results indicate the principal ability of meat-inherent bacteria to form ZnPP in meat extracts and meat-like media, but not on the meat muscle. Thus it was concluded that the ZnPP formation in meat is due to a meat-inherent enzymatic reaction induced by porcine ferrochelatase (FECH), while the bacterial (FECH) induced reaction seems to be not significant.

Keywords

meat storage; pseudomonas; post mortem chemistry; microorganisms; ~~proteolysis~~; fluorescence