

Accepted Manuscript

Degradation of β -casomorphins and identification of degradation products during yoghurt processing using liquid chromatography coupled with high resolution mass spectrometry

Duc Doan Nguyen, Francesco Buseti, Stuart Keith Johnson, Vicky Ann. Solah



PII: S0963-9969(17)30889-X
DOI: <https://doi.org/10.1016/j.foodres.2017.12.035>
Reference: FRIN 7241

To appear in: *Food Research International*

Received date: 1 September 2017
Revised date: 11 December 2017
Accepted date: 13 December 2017

Please cite this article as: Duc Doan Nguyen, Francesco Buseti, Stuart Keith Johnson, Vicky Ann. Solah , Degradation of β -casomorphins and identification of degradation products during yoghurt processing using liquid chromatography coupled with high resolution mass spectrometry. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Frin(2017), <https://doi.org/10.1016/j.foodres.2017.12.035>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Degradation of β -casomorphins and identification of degradation products during yoghurt processing using liquid chromatography coupled with high resolution mass spectrometry

Duc Doan Nguyen^{a*}, Francesco Buseti^b, Stuart Keith Johnson^c and Vicky Ann. Solah^c

^a Department of Food Technology, Faculty of Food Science and Technology, Vietnam National University of Agriculture, Hanoi, Vietnam

^b School of Science, Edith Cowan University, Joondalup WA, Australia 6027

^c School of Public Health, Faculty of Health Sciences, Curtin University, GPO Box U1987, Perth, Western Australia, 6845, Australia

* Corresponding author:

Email address: nd.doan@vnua.edu.vn (D.D.Nguyen)

ABSTRACT

Liquid chromatography-high resolution mass spectrometry (LC-HRMS) was used to investigate the degradation of β -casomorphin 5 (β -CM5) and β -casomorphin 7 (β -CM7) by *Streptococcus thermophilus* and/or *Lactobacillus delbrueckii* ssp. *bulgaricus*, and to identify the degradation products forming during yoghurt processing. Bovine UHT milk was fermented with: (i) a single strain of *L. delbrueckii* ssp. *bulgaricus*, (ii) a single strain of *S. thermophilus* and (iii) the mixture of *S. thermophilus* and *L. delbrueckii* ssp. *bulgaricus* to pH 4.5 and then stored at 4 °C for 1 and 7 days. Results showed that *L. delbrueckii* ssp. *bulgaricus* and/or *S. thermophilus* completely degraded β -CM5 and β -CM7 upon fermentation to pH 4.5 and degradation products were significantly influenced by bacteria strains and storage time. Four peptides, β -CNf60-61 (YP), β -CNf62-63 (FP), β -CNf64-66 (GPI) and β -CNf62-66 (FPGPI) were tentatively identified through high resolution MS/MS experiments; however, it was not possible to confirm if either milk protein or β -casomorphins

Download English Version:

<https://daneshyari.com/en/article/8889280>

Download Persian Version:

<https://daneshyari.com/article/8889280>

[Daneshyari.com](https://daneshyari.com)