Effect of digestive enzymes on the bioactive properties of goat milk protein hydrolysates

The aim of this research was to study the influence of the gastrointestinal digestion on the bioactivity of goat milk protein hydrolysates prepared with subtilisin, trypsin and a combination of these two enzymes. All hydrolysates had excellent angiotensin converting enzyme (ACE) inhibitory activity, antioxidant activity and bile acid-binding capacity. Peptide profiles and bioactivities were mainly altered during the intestinal digestion, whereas the effect of the gastric digestion was negligible. The influence of the intestinal digestion varied depending on the hydrolysate and the bioactivity studied. In the case of ACE inhibitory activity, it exclusively decreased when peptides were produced with trypsin. In contrast, antioxidant activity and bile acid-binding capacity improved after the gastrointestinal digestion, regardless the enzymatic treatment conducted. Hydrolysis employing mixtures of subtilisin and trypsin is considered a good approach to produce peptides that maintain, or even enhance, their bioactivity after digestion. (C) 2015 Elsevier Ltd. All rights reserved.

General information
State: Published
Organisations: University of Granada
Contributors: Javier Espejo-Carpio, F., García Moreno, P. J., Pérez-Galvez, R., Morales-Medina, R., Guadix, A., Guadix, E. M.
Number of pages: 8
Pages: 21-28
Publication date: 2016
Peer-reviewed: Yes

Publication information
Journal: International Dairy Journal
Volume: 54
ISSN (Print): 0958-6946
Ratings:
BFI (2019): BFI-level 2
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 2.21 SJR 1.051 SNIP 1.031
Web of Science (2017): Impact factor 2.201
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.34 SJR 1.124 SNIP 1.272
Web of Science (2016): Impact factor 2.067
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.18 SJR 0.961 SNIP 1.15
Web of Science (2015): Impact factor 1.938
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.24 SJR 1.06 SNIP 1.174
Web of Science (2014): Impact factor 2.008
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.79 SJR 1.239 SNIP 1.394
Web of Science (2013): Impact factor 2.297
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.55 SJR 1.268 SNIP 1.467
Web of Science (2012): Impact factor 2.333
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.73 SJR 1.282 SNIP 1.491
Web of Science (2011): Impact factor 2.401