

Accepted Manuscript

A survey of free glutamic acid in foods using a robust LC-MS/MS method

Nur Cebi, Canan Ekinici Dogan, Elmas Oktem Olgun, Osman Sagdic

PII: S0308-8146(17)31983-0

DOI: <https://doi.org/10.1016/j.foodchem.2017.12.033>

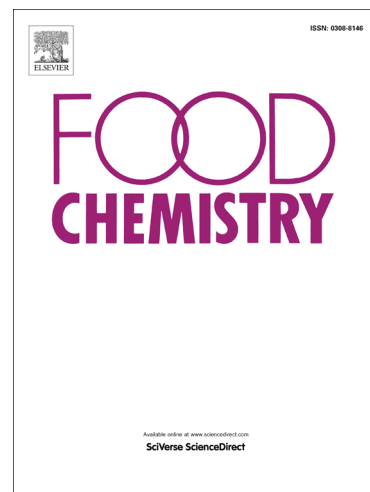
Reference: FOCH 22130

To appear in: *Food Chemistry*

Received Date: 12 March 2017

Revised Date: 1 October 2017

Accepted Date: 10 December 2017



Please cite this article as: Cebi, N., Dogan, C.E., Olgun, E.O., Sagdic, O., A survey of free glutamic acid in foods using a robust LC-MS/MS method, *Food Chemistry* (2017), doi: <https://doi.org/10.1016/j.foodchem.2017.12.033>

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.

A survey of free glutamic acid in foods using a robust LC-MS/MS method

Nur Cebi^{a1}, Canan Ekinici Dogan^{b2}, Elmas Oktem Olgun^b, and Osman Sagdic^a

^a *Yıldız Technical University, Chemical and Metallurgical Engineering Faculty, Food Engineering Department,
34210, İstanbul-Turkey*

^b *TUBITAK MRC Food Institute, 41470 Gebze-Kocaeli-Turkey*

Abstract

An effective and simultaneous liquid chromatography-tandem mass spectrometry (LC-MS/MS) method was used with the aim of quantifying monosodium glutamate (MSG) in foodstuffs, such as chips, taste cubes, sauces and soups. The results were linear ($R^2=1$), with very low LOD and LOQ values, 1.0 $\mu\text{g}/\text{kg}$, 5.0 $\mu\text{g}/\text{kg}$, respectively. Excellent repeatability and reproducibility were also achieved. This highly sensitive and robust LC-MS/MS technique was applied successfully for the detection and quantification of MSG in a wide variety of foodstuffs. MSG contents ranged from 0.01 g/100 g to 15.39 g/100 g in food samples. Importantly, determination of free glutamic acid in the daily diet could also prevent various side effects associated with consumption of excess free glutamic acid.

Keywords: MSG, monosodium glutamate, HPLC, tandem mass, LC-MS/MS

¹ Corresponding author: Nur Çebi Tel.: +90 543 467 6691

E-mail address: nur.cebi@gmail.com

² Corresponding author: Canan Ekinici Dogan +90 262 677 32 74

E-Mail: canan.dogan@tubitak.gov.tr

Download English Version:

<https://daneshyari.com/en/article/7586112>

Download Persian Version:

<https://daneshyari.com/article/7586112>

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