

## Accepted Manuscript

Novel low-abundance allergens from mango via combinatorial peptide libraries treatment: a proteomics study

Erik Elvin Gomez Cardona, Karen Heathcote, Luis Manuel Teran, Pier Giorgio Righetti, Egisto Boschetti, Alfonsina D'Amato

PII: S0308-8146(18)31086-0

DOI: <https://doi.org/10.1016/j.foodchem.2018.06.113>

Reference: FOCH 23074

To appear in: *Food Chemistry*

Received Date: 19 March 2018

Revised Date: 22 May 2018

Accepted Date: 21 June 2018

Please cite this article as: Elvin Gomez Cardona, E., Heathcote, K., Teran, L.M., Righetti, P.G., Boschetti, E., D'Amato, A., Novel low-abundance allergens from mango via combinatorial peptide libraries treatment: a proteomics study, *Food Chemistry* (2018), doi: <https://doi.org/10.1016/j.foodchem.2018.06.113>

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.



## Novel low-abundance allergens from mango via combinatorial peptide libraries treatment: a proteomics study

Erik Elvin Gomez Cardona<sup>1,2</sup>, Karen Heathcote<sup>5</sup>, Luis Manuel Teran<sup>1,2\*</sup>, Pier Giorgio Righetti<sup>3</sup>, Egisto Boschetti<sup>4</sup>, Alfonsina D'Amato<sup>5,6\*</sup>.

<sup>1</sup>Instituto Nacional de Enfermedades Respiratorias, Universidad Autónoma de México, Calz. Tlalpan 4502, c.P. 14080 Mexico D.F

<sup>2</sup>Biomedicine in The Post-Genomic Era, Huitzilac Morelos; Mexico.

<sup>3</sup>Department of Chemistry, Materials and Chemical Engineering "Giulio Natta", Politecnico di Milano, Via Mancinelli 7, Milano 20131, Italy.

<sup>4</sup>Scientific Consultant, Paris, France.

<sup>5</sup>Proteomics Unit, Quadram Institute Bioscience, Norwich Research Park, NR4 7UA, England

<sup>6</sup>Department of Pharmaceutical Sciences, Università degli Studi di Milano, Via L. Mangiagalli 25, 20133, Milano, Italia

\*Corresponding authors: [Imteran@iner.gob.mx](mailto:Imteran@iner.gob.mx); [alfonsina.damato@unimi.it](mailto:alfonsina.damato@unimi.it)

**Key words:** mango, banana, allergens, affinity capture, cross-reactivity.

### Abstract

Mango allergy is a rare condition, which may cause severe hypersensitivity reactions, such as anaphylaxis, angioedema, asthma and contact dermatitis. By exploiting the combinatorial peptide ligand library (CPLL) technology, mango proteomes have been extracted and the presence of traces of allergens assessed via Western blot analysis two-dimensional maps. Upon reactive spot elution and mass spectrometry analyses, four major mango allergens could be identified for the first time and shown to be in common with three of the five known banana species. These are: Mus a 1, Mus a 2 and Mus a 5. Additional mango allergens detected do not seem to be in common with the banana species. In particular, a pectinesterase and a superoxide dismutase, both widely described as allergens, could be identified in mango extracts. Conversely, plain mango extracts not treated with CPLLs did not exhibit any reactive spots in Western blot analysis.

Download English Version:

<https://daneshyari.com/en/article/7584363>

Download Persian Version:

<https://daneshyari.com/article/7584363>

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