

Accepted Manuscript

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Leonor Guadarrama-Fernández, Marta Novell, Pascal Blondeau, Francisco J. Andrade

PII: S0308-8146(18)30894-X

DOI: <https://doi.org/10.1016/j.foodchem.2018.05.082>

Reference: FOCH 22915

To appear in: *Food Chemistry*

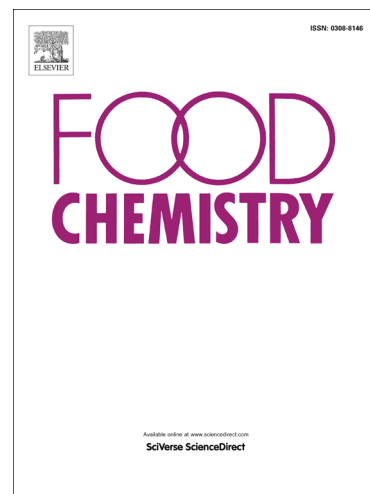
Received Date: 18 July 2017

Revised Date: 17 May 2018

Accepted Date: 17 May 2018

Please cite this article as: Guadarrama-Fernández, L., Novell, M., Blondeau, P., Andrade, F.J., A disposable, simple, fast and low-cost paper-based biosensor and its application to the determination of glucose in commercial orange juices, *Food Chemistry* (2018), doi: <https://doi.org/10.1016/j.foodchem.2018.05.082>

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Leonor Guadarrama-Fernández, Marta Novell, Pascal Blondeau, Francisco J.

Andrade*

Departament de Química Analítica i Química Orgànica. Universitat Rovira i Virgili (URV).

C/ Marcel·lí Domingo 1, 43007 Tarragona, Spain.

***corresponding author**

E-mail address: franciscojavier.andrade@urv.cat (F.J. Andrade)

Abstract

A new biosensor for monitoring glucose levels in beverages is presented. The measurements are performed using potentiometric detection. Working electrodes are made using platinised paper as support and a biocompatible polymeric membrane made of a mixture of polyvinyl alcohol and chitosan containing glucose oxidase as the recognition layer. The system is based on the detection of the hydrogen peroxide generated by an enzymatic reaction performed in a highly sensitive, selective and simple way. The biosensors display suitable analytical performance (sensitivity -119.6 ± 6.4 mV/dec in the 0.03-1.0 mM range with a limit of detection of 0.02 mM). Determination of glucose in commercial orange juices is presented. These results were validated against conventional standard methods, showing good accuracy and fast analytical response. The methodology presented herein does not require complex samples treatment, offering an alternative to conventional methods, particularly for determinations performed with minimal expertise and without a laboratory infrastructure.

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