

Accepted Manuscript

Supramolecular formulation of nitidine chloride can alleviate its hepatotoxicity and improve its anticancer activity

Wanying Li, Hang Yin, David Bardelang, Jianbo Xiao, Ying Zheng, Ruibing Wang



PII: S0278-6915(17)30068-6

DOI: [10.1016/j.fct.2017.02.022](https://doi.org/10.1016/j.fct.2017.02.022)

Reference: FCT 8900

To appear in: *Food and Chemical Toxicology*

Received Date: 13 January 2017

Revised Date: 9 February 2017

Accepted Date: 15 February 2017

Please cite this article as: Li, W., Yin, H., Bardelang, D., Xiao, J., Zheng, Y., Wang, R., Supramolecular formulation of nitidine chloride can alleviate its hepatotoxicity and improve its anticancer activity, *Food and Chemical Toxicology* (2017), doi: 10.1016/j.fct.2017.02.022.

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.

Supramolecular formulation of nitidine chloride can alleviate its hepatotoxicity and improve its anticancer activity

Wanying Li,¹ Hang Yin,¹ David Bardelang,² Jianbo Xiao,¹ Ying Zheng^{*1} and
Ruibing Wang^{*1}

¹ State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau, Macao SAR, China

² Aix Marseille Univ, CNRS, ICR, Marseille, France

* Correspondence should be addressed to: rwang@umac.mo and yzheng@umac.mo.

Abstract

Nitidine chloride (NC) has demonstrated promising anticancer activity. However, NC has also shown non-specific toxicity in various healthy organs such as the liver. In this study, we aimed to develop a supramolecular formulation for NC and investigate the associated benefits of such a supramolecular formulation on modulating its inherent hepatotoxicity and anticancer activity. The formation of NC-cucurbit[7]uril (NC@CB[7]) complexes was characterized by ¹H nuclear magnetic resonance and Fourier transform infrared spectroscopy, differential scanning calorimetry and powder X-ray diffraction analysis. As a consequence of supramolecular complexation, NC@CB[7] showed significantly lower toxicity (IC₅₀: 6.87±0.80 μM) on a liver cell line (LO2), and higher cytotoxicity (IC₅₀: 2.94 ±0.15 μM) on a breast cancer cell line (MCF-7), when compared with the free drug (IC₅₀ of

Download English Version:

<https://daneshyari.com/en/article/8548873>

Download Persian Version:

<https://daneshyari.com/article/8548873>

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