

Accepted Manuscript

Title: Chitosan as an effective inhibitor of multidrug resistant *Acinetobacter baumannii*

Authors: E.M. Costa, S. Silva, S. Vicente, M. Veiga, F. Tavora, M.M. Pintado



PII: S0144-8617(17)31088-3
DOI: <http://dx.doi.org/10.1016/j.carbpol.2017.09.055>
Reference: CARP 12800

To appear in:

Received date: 4-7-2017
Revised date: 7-9-2017
Accepted date: 14-9-2017

Please cite this article as: Costa, E.M., Silva, S., Vicente, S., Veiga, M., Tavora, F., & Pintado, M.M., Chitosan as an effective inhibitor of multidrug resistant *Acinetobacter baumannii*. *Carbohydrate Polymers* <http://dx.doi.org/10.1016/j.carbpol.2017.09.055>

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.

Chitosan as an effective inhibitor of multidrug resistant *Acinetobacter baumannii*

EM Costa^a, S Silva^a, S Vicente^a, M Veiga^a, F Tavaría^a, MM Pintado^a

^aCBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia, Universidade Católica Portuguesa/Porto, Rua Arquitecto Lobão Vital, Apartado 2511, 4202-401 Porto, Portugal

*corresponding author:

Highlights

- Chitosan inhibited the planktonic and sessile growth of a MDR *A. baumannii* strain
- *A. baumannii* MIC's varied between 0.5 and 1 mg/mL
- *A. baumannii* MBIC's were only 8 to 16x higher than the MICs
- Chitosan effectively reduced *A. baumannii* adhesion and biofilm growth

Abstract

Over the last two decades worldwide levels of antibiotic resistance have risen leading to the appearance of multidrug resistant microorganisms. *Acinetobacter baumannii* is a known skin pathogen which has emerged as a major cause of nosocomial outbreaks due to its capacity to colonize indwelling medical devices and natural antibiotic resistance. With chitosan being an effective antimicrobial agent against antibiotic resistant microorganisms, the aim of this work was to access its potential as an alternative to traditional antimicrobials in the management of *A. baumannii* growth. What the results showed was that both chitosan MW's tested were active upon *A. baumannii*'s planktonic and sessile growth. For planktonic growth MICs and MBCs were obtained at relatively low concentrations (0.5 – 2 mg/mL) while for sessile growth chitosan proved to be a effective inhibitor of *A. baumannii*'s adhesion and biofilm formation.

Download English Version:

<https://daneshyari.com/en/article/5156760>

Download Persian Version:

<https://daneshyari.com/article/5156760>

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