

Accepted Manuscript

Study of the interaction of β -cyclodextrin with albendazole in aqueous solutions

A. Stepniak, A. Buczkowski, L. Zavodnik, S. Belica-Pacha, B. Palecz



PII: S0167-7322(17)31849-4
DOI: doi:[10.1016/j.molliq.2017.09.100](https://doi.org/10.1016/j.molliq.2017.09.100)
Reference: MOLLIQ 7937
To appear in: *Journal of Molecular Liquids*
Received date: 28 April 2017
Revised date: 5 September 2017
Accepted date: 23 September 2017

Please cite this article as: A. Stepniak, A. Buczkowski, L. Zavodnik, S. Belica-Pacha, B. Palecz, Study of the interaction of β -cyclodextrin with albendazole in aqueous solutions. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Molliq(2017), doi:[10.1016/j.molliq.2017.09.100](https://doi.org/10.1016/j.molliq.2017.09.100)

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.

Study of the interaction of β -cyclodextrin with albendazole in aqueous solutions.

A. Stepniak^{a*}, A. Buczkowski^a, L. Zawodnik^b, S. Belica-Pacha^a, B. Palecz^{a*}

^aUnit of Biophysical Chemistry, Department of Physical Chemistry, Faculty of Chemistry, University of Lodz, Pomorska 165, Lodz 90-236, Poland

^bDepartment of Pharmacology and Physiology, Grodno State Agricultural University, Volkovich St. 1, 230023, Grodno, Belarus

*Corresponding author: Tel.: +48 426355828; fax: +48 426355814; E-mail adress: paleczb@uni.lodz.pl (B. Palecz); Tel.: +48 426355827; fax: +48 426355814; E-mail adress: artur.piotr.stepniak@gmail.com (A. Stepniak)

Keywords:

β -cyclodextrin, albendazole, isothermal titration calorimetry (ITC), UV-VIS spectroscopy

ABSTRACT

We performed calorimetric titration (ITC) measurements of aqueous albendazole solutions with aqueous β -cyclodextrin solutions. The obtained results were used to determine the enthalpy and entropy of the drug- β -cyclodextrin interaction, the stoichiometry of the resulting inclusion complex and its formation constant. Using the UV spectrophotometer, we determined the solubility of albendazole in water, as well as the increase of the drug solubility driven by the increase of β -cyclodextrin concentration. Biological studies carried out on mouse cultures confirmed an increase of the albendazole- β -cyclodextrin complex bioavailability, as compared to the uncomplexed drug.

Download English Version:

<https://daneshyari.com/en/article/5407917>

Download Persian Version:

<https://daneshyari.com/article/5407917>

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