

TO THE MEMBERS OF THE SCIENTIFIC JURY
for conducting a competition for the academic position of
"Associate Professor" in a professional field 7.3 Pharmacy

O P I N I O N

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Regarding the procedure for holding the academic position "Associate Professor", in the professional field 7.3 Pharmacy, in the scientific specialty "Technology of Drug Dosage Forms", for the needs of the Faculty of Chemistry and Pharmacy at Sofia University "St. Kliment Ohridski"

I. General presentation of the procedure and the candidate.

Documents for participation in the competition were submitted by only one candidate - Dr. Zahari Penkov Vinarov. The presented set of materials on electronic media is in accordance with the Law and its regulations related to the procedure for holding the academic position of "Associate Professor".

The opinion was prepared on the basis of Order № ПД 38-454 / 21.09.2021 of the Rector of Sofia University "St. Kliment Ohridski", regarding the announcement of a scientific jury for conducting the current competition and the announcement for the competition in State Gazette No. 63 of 30.07.2021. The opinion was prepared in accordance with the requirements of the Law and the Regulations for development of the Academic staff in the Republic of Bulgaria, as well as the Regulations for the conditions for acquiring scientific degrees and for holding academic positions at Sofia University "St. Kliment Ohridski".

Brief biographical data

In 2009 Zahari Vinarov graduated from the Faculty of Pharmacy of the Medical University - Sofia, obtaining the qualification "Master of Pharmacy". During the period 2008 until now the candidate has worked in the Department of Engineering Chemistry and Pharmaceutical Engineering, Faculty of Chemistry and Pharmacy, Sofia University "St. Kl. Ohridski", successively holding the positions of researcher, assistant and chief assistant.

In 2014 he obtained a PhD in chemistry with a thesis on "In vitro studies of triglyceride lipolysis in the gastrointestinal tract", and in 2021, as a doctoral student in self-study, obtained a doctorate in pharmacy at Sofia University "St. Kliment Ohridski" with a thesis on "Improving the solubility of hydrophobic drugs by solubilization in surfactant micelles".

Zahari Vinarov is a member of several international scientific organizations (European Pharmacopoeia - EDQM, European Federation of Pharmaceutical Sciences - EUFEPS,

American Association of Pharmaceutical Researchers - AAPS) and editorial boards (Molecules and Pharmaceutics - MDPI, Journal of Pharmacy and Pharmacology - Wiley)

For the last two years, Zahari Vinarov has been a postdoctoral fellow at the Catholic University of Leuven, Belgium in the group "Drug delivery & disposition"

II. Scientific activity

The overall scientific production of Chief Assistant Dr. Vinarov includes 24 scientific papers, distributed as follows: 1 monograph, 1 book and 22 publications, of which 20 articles in specialized scientific journals, referenced and indexed in world-famous databases of scientific information. A list of 40 participations in national and international scientific conferences and participation in 19 projects, of which 2 national and 17 internationals. The works of Dr. Vinarov are cited 318 times (h-index 10).

I accept and highly appreciate the scientific, scientific-applied and methodological contributions presented in the author's reference, which are in the following main directions:

(i) Improving the aqueous solubility of hydrophobic drugs by solubilization in colloidal aggregates. The research of Vinarov are focused on improving the solubility of drugs by solubilization in colloidal aggregates of surfactants. It was found that the solubilization capacity of the surfactant micelles increases with increasing the length of the hydrophobic tail of the surfactant for all studied drugs. The hydrophilic head of the surfactant also affects solubilization, the effects depending on the type of interactions between the drug and the surfactant. On the other hand, uncharged drug molecules can participate in ion-dipole interactions with ionic surfactant micelles, which also leads to increased solubilization. The solubilization of drugs in solutions of natural surfactants (saponins) was also studied, and it was found that they significantly improve the solubility of fenofibrate and danazol.

(ii) Lipid drug dosage forms - excipients, methods of preparation and drug release. One of the modern approaches to increase oral bioavailability is the development of lipid dosage forms. Important elements are the choice of lipid carrier and the size of the drops. The influence of these two factors on the drug release profile in an in vitro model of the gastrointestinal tract was studied. The role of triglyceride and phospholipid lipolysis products on drug solubilization has also been systematically studied. The results clearly show that unsaturated long-chain lipids greatly increase the solubility of hydrophobic drugs, while long-chain saturated lipids have a negligible effect. The conclusions allow rational selection of lipids in order to achieve maximum solubilization of drugs in the gastrointestinal tract.

(iii) Biopharmaceutical methods for the study of excipients and bioactive compounds after oral administration. The candidate's contributions in this scientific field consist in the development of new biopharmaceutical models for the study of excipients and bioactive compounds after oral administration. The parameters of the gastrointestinal tract, which affect the oral bioavailability, are described in detail and a relatively complex in vitro

model resembling some key in vivo conditions has been developed. This in vitro model has also been used to study the effects of surfactants and their interactions with bile salts in the small intestine on drug solubility. The effect of emulsifiers as excipients on the lipolysis of triglycerides was studied. It has been found that emulsifiers, depending on the concentration, affect lipolysis and solubilization in different ways. The conclusions are important in the selection of the type and concentration of emulsifying excipients in the preparation of lipid dosage forms.

III. Teaching activity.

Chief Assistant Zahari Vinarov is an established and respected lecturer at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski". His classroom employment for the last 5 years is an average of 580 hours per year, of which 553 hours are classroom employment, mainly related to conducting exercises in Technology of Drug Dosage Forms 1. He was a supervisor or co-supervisor of 4 graduates. He is an active participant in the team for preparation of the doctoral program in Technology of Dosage Forms and Biopharmacy at the Faculty of Chemistry and Pharmacy of Sofia University "St. Kliment Ohridski".

IV. Conclusion.

Based on the materials and scientific papers presented at the competition, the above analysis of their significance and the scientific contributions contained in them, as well as my personal impression of the candidate, I confidently give my positive assessment. I recommend to the esteemed Scientific Jury to propose Chief Assistant. Dr. Zahari Penkov Vinarov for awarding the academic position "Associate Professor" in the field of higher education "Health and Sports", professional field 7.3. Pharmacy and scientific specialty "Technology of drug dosage forms".

20.11.2021

Sofia

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