

STATEMENT

in a competition for the academic position "Associate Professor" in scientific field 4.2. Chemical Sciences (Bioorganic Chemistry, Chemistry of Natural and Physiologically Active Substances), for the needs of the Department of Chemistry at the Faculty of Natural Sciences and Mathematics of South-West University "Neofit Rilski" - Blagoevgrad, announced in the State Newspaper no. 57 of 04.07.2023

Candidate: Chief Assistant Radoslav Lyudmilov Chayrov, PhD

Reviewer: Prof. Reni Emil Kalfin, PhD, Head of the Scientific Department "Biological Effects of Natural and Synthetic Substances" at the Institute of Neurobiology, BAS

A single candidate participates in this competition, a chemist majoring in "Biologically active substances and medicinal products", holding the educational and scientific degree "Doctor" in the scientific specialty "Organic Chemistry", who holds the position of "Chief Assistant" in the Department of Chemistry at the Faculty of Science and Mathematics of South-West University "Neofit Rilski" in Blagoevgrad.

Chief Assistant Dr. Radoslav Chayrov arranged the materials for the competition correctly, in accordance with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Internal Rules for the Development of the Academic Staff at the "Neofit Rilski" South-West University. Neatly presented documents help to fully and accurately assess the overall activity of the candidate.

ANALYSIS OF THE CAREER PROFILE OF THE CANDIDATE DR. RADOSLAV CHAYROV

Radoslav Chayrov was born on May 7, 1985 in the city of Pernik. He completed his secondary education in 2005 at the Professional High School of Engineering and Construction "Architect Yordan Milanov" in his hometown. Radoslav graduated in 2011 from the Faculty of Science and Mathematics of the South-West University in Blagoevgrad as a MSc student with a major in Chemistry.

During the period from 2011 to 2014, Radoslav Chayrov worked as an analytical chemist at Balkanpharma, Dupnitsa. From 2014 to 2017, he was a full-time PhD student at Neofit Rilski State University in Blagoevgrad. Chayrov defended his PhD thesis on 26th

October 2017 on the topic: "Synthesis and analysis by HPLC of analogues of antiviral preparations". As of September 1st, 2017, he has been appointed as a full-time Assistant at South-West University's Faculty of Science and Mathematics. Since 2019 and currently, Dr. Radoslav Chayrov is a Chief Assistant at the same University.

Dr. Chairov was a principal investigator of two research projects, participated in 7 such projects and has three patents as an inventor.

The analysis of the candidate's career profile shows that the Chief Assistant Dr. Radoslav Chairov has the necessary work experience, skills and qualifications in the specialty of the announced competition.

EVALUATION OF THE SCIENTIFIC WORK

In the competition for "Associate Professor" Dr. Radoslav Chayrov participates with 13 scientific publications, 3 patents and 23 abstracts from scientific meetings in the country and abroad. The candidate also applies 30 citations to his articles.

As a habilitation thesis, Dr. Chayrov presents 6 scientific articles in referenced and indexed in world-famous databases with scientific information (Web of Science and Scopus). In this way, from indicator "B" the candidate collects 105 points with a required minimum of 100 points.

An original contribution was the synthesis of abacavir esters. Dr. Radoslav Chayrov has shown that one of these newly synthesized esters has low cytotoxicity and high anti-HIV-1 activity in MT-4 cells, also low mitochondrial toxicity and a high genetic barrier to resistance.

Newly synthesized by the candidate are esters of the antiherpes drug acyclovir with cholic, chenodeoxycholic and deoxycholic acids, as Chayrov demonstrated that modifying acyclovir with bile acids is a successful strategy for creating prodrugs with increased antiviral activity.

Radoslav Chayrov synthesized nineteen amino acid analogs of amantadine and rimantadine, and their antiviral activity in vitro against influenza A virus, strain H3N2 was investigated. Original data demonstrate that the amino acid derivative of rimantadine with glycine shows the highest antiviral activity combined with low cytotoxicity. Radoslav found that the same derivative was extremely stable in vitro in human blood plasma for 24 hours.

An original contribution was the synthesis of an adamantane derivative with antiviral and antiparkinsonian activity, applicable to the prevention and treatment of diseases associated with a violation of the synthesis and excretion of dopamine.

Dr. Chairov is one of the inventors of a method for obtaining a viral neuraminidase inhibitor that blocks the M2 proton channel and established its application in the treatment of viral infections.

Radoslav Chayrov is a member of the team that patented an N-methyl-D-aspartate (NMDA) receptor antagonist with antimicrobial activity for use in Alzheimer's disease patients with bacterial and fungal infections caused by clinically relevant opportunistic bacterial species and fungi.

In conclusion, the candidate's scientific research profile is entirely in the field of chemistry of natural and physiologically active substances, with his main studies being on the ways to obtain various new derivatives (amides, esters) of established medicinal products with a view to testing their biological activity. Dr. Chayrov obtained new data on the structural diversity of the newly synthesized biologically active compounds and their chemical stability in an aqueous environment with different physiological pH values.

**FULFILLMENT OF THE REQUIREMENTS FOR THE ACADEMIC POSITION
"ASSOCIANT PROFESSOR" AND COMPLIANCE WITH THE CANDIDATE'S DATA**

The quantitative criteria and their correspondence with the applicant's data are summarized in the table:

Group of indicators	AREA OF HIGHER EDUCATION 4. "NATURAL SCIENCES, MATHEMATICS AND INFORMATICS" 4.2. CHEMICAL SCIENCES	National requirements for the academic position "Associate Professor"	Indicators of the applicant for the academic position "Associate Professor"
A	Indicator 1	50	50
B	Indicator 2	-	-
B	Indicator 3 or 4	100	105

Г	Sum of indicators from 5 to 9	200	200
Д	Sum of the points in the indicator 11	50	60
Е	Sum of the indicators from 12 to the end	-	40 +

The presented by Chief Assistant Dr. Radoslav Chayrov evidentiary material clearly shows that the candidate fulfills the minimum national requirements for the academic position "Associate Professor", exceeding them by 15 points. Also, Dr. Chayrov meets the additional requirements of Neofit Rilski South-West University for indicators in group E. In his self-assessment, the candidate modestly indicated 30 points collected by him in group E, but in reality these points exceed 40, as follows: 20 points for participation in an international scientific project financed by the National Science Fund; 20 points for the head of a national research grant financed by the National Science Fund plus 1 point for every 5,000 BGN brought to the South-West University under this national contract, led by Dr. Radoslav Chayrov.

CRITICAL NOTES AND RECOMMENDATIONS

I have no critical remarks about the candidate. My recommendation to Dr. Chayrov is that after occupying the academic position "Associate Professor" based on the acquired professional experience as the head of a contract for young scientists with the National Science Fund, he should apply for greater funding of his scientific activity from national sources and to supervise a PhD student.

IMPRESSIONS OF THE CANDIDATE

I know Dr. Radoslav Chayrov personally from our work on research projects and participation in scientific forums. I can say that he is a very humble, fair, ethical and dedicated to his work colleague. His professional experience and qualities are highly valued by the collegium.

CONCLUSION

Chief Assistant Dr. Chayrov fully meets the criteria set by the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its Application and the Internal Rules for the Development of the Academic Staff at the South-West University "Neofit Rilski" for the position of "Associate Professor" .

Everything said so far gives me grounds for a completely positive assessment of the candidate, and I also confidently suggest that the Chief Assistant, Dr. Radoslav Lydmilov Chayrov, be elected to the position of "Associate Professor" in scientific field 4.2. Chemical sciences (Bioorganic Chemistry, Chemistry of Natural and Physiologically Active Substances)for the needs of the Department of Chemistry at the Faculty of Science and Mathematics of South-West University "Neofit Rilski" in Blagoevgrad.

08.10.2023 r.



(Prof. Reni Kalfin, PhD)