Seminars in Biotechnology BTEC 592 & BTEC 692

"Nanomaterials as versatile tools in Nanomedicine"

Thursday, May 20, 2021
13:30
Online Seminar

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The most important contributions of Assoc. Prof. Ismail Ocsoy to universal science are in the field of nanobiotechnology consisting of DNA Aptamer conjugated nanomaterials, cancer therapy models, anti-cancer, anti-microbial agents and nanobio-sensor for detection of antibiotic resistant bacteria. Dr. Ocsoy (Google Scholar: H-index: 30) completed his master's and doctoral studies in 2011 and 2014, respectively under supervision of Prof. Dr. Weihong Tan (Hindex: 144) in the Department of Chemistry (Nano-biotechnology program) at the University of Florida in the United States of America. After collaborating with leading scientists, Dr. Ocsoy started his independent research as an Asst Prof in the Faculty of Pharmacy at Erciyes University (ERU) in 2015, Turkey. He has been working as Assoc. Prof. since 2017. He published more than 60 scientific articles especially in highly reputable and prestigious journals including the Journal of American Chemical Society (EF: 14.61), ACS Nano (EF: 14.58) and Advanced Materials (EF: 27.38). From these publications, nearly 50 of them were produced in the ERU. Showing his competence in the field of nanobiotechnology, Dr. Ocsoy wrote several invited reviews and book chapters in the field of nanobiotechnology. Dr. Ocsoy joined into many international projects during his doctorate, and has successfully completed many TUBITAK and University projects as an executive and researcher.

Dr. Ocsoy received many awards for his contributions to universal science.

Some of those;

- 2018 Turkish Pharmacists Association Pharmacy Academy Incentive Award
- 2018 Turkey Academy of Sciences (TUBA) Outstanding Young Scientist (GEBİP) Award
- 2018 Erciyes University Academician Award with the Highest Academic Incentive Score
- 2019 METU Prof. Dr. Mustafa N. Parlar Education and Research Foundation Research Incentive Award
- 2020 Science Academy Young Scientists Award (in Medicine-Pharmacy).

He has been working as a working group member of the European Cooperation in Science and Technology (COST) in the field of Nanospectroscopy (MP1302) since 2016 and he is Section Editor in Frontiers in Nanotechnology Journal

Abstract

Recently, multifunctional hybrid nanoparticles (NPs) have attracted great attention because of their enhanced properties compared to their individual components, and the possibility of multi—purpose uses.[1,2]. The high surface area provided by hybrid NPs can simultaneously convey more than one functional group (e. g., nucleic acids or aptamers, small chemical molecules, antibodies, peptides), and/or carry multi-cancer drugs (water –soluble or insoluble) in cancer—specific delivery, and/or combine several imaging agents (fluorescence dyes and radionuclides) for multi—modal imaging. Particularly, multifunctional hybrid NPs have been developed to overcome the limitations of conventional techniques used for diagnosis and therapy in biomedical applications [3-4]. We focused on varies hybrid including metal-metal oxide, metal-graphene oxide, organic-inorganic NPs for enhanced physicochemical and biological properties. The World Health Organization published a global action plan to combat antibiotic resistant microorganisms in 2015. The hospitals in Turkey use many diagnostic tests and kits for the diagnosis and detection of these microorganisms. We also rationally designed natural indicator based nanosensor for detection and identification of antibiotic resistance bacteria[5,6].

References:

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