Seminars in Biotechnology BTEC 592 & BTEC 692

"Plants as Biomaterials; an interdisciplinary approach"

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13:30
Online Seminar

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Dr. Müge Kesici completed her undergraduate studies in 2006 at the Faculty of Agriculture, Uludag University and she got her Ph.D. degree (2015) from Uludag University. After receiving her Ph.D., she worked as a postdoctoral researcher at Istanbul Bilgi University, Department of Genetics and Bioengineering, at Dr. Ozgur Gul's Protein Engineering Lab for 3 years. She continued her career at Bogazici University, Institute of Biomedical Engineering, where she joined Assoc. Prof. Bora Garipcan's group. Her main research interests are plant biotechnology, protein engineering, plant surfaces for biomedical applications. Dr. Kesici is a principal investigator of BIDEB-2218 project and she has a 3 Turkish and 1 European patent.

Abstract

Plants, as sessile organisms, adapt to their environment in multiple different ways thanks to their evolutionary history. Pieces of evidence show that one of the first multicellular photosynthesizing organisms appeared around 850 million years ago[1]. This great history gives them unique variations. Thus, scientists discover new clues to mimic the environment. Cellulose, as a major component of plants, is easily attainable in nature, has been studied due to its biocompatibility, low cytotoxicity, adjustable biomechanical properties, and cost-effectiveness as a biomaterial[2]. Biomaterials are commonly used to provide "scaffolding" for biomedical applications and these scaffolds provided a framework for 3D cell growth and new tissue formation[3]. In this talk, audiences will hear about the use of plants as scaffolds for biomedical applications.

References:

1. Knauth, LP., Keneddy, MJ. Nature, 2009.
2. Toker, M., Rostami, S., Kesici, M., Gul, O., Kocaturk, O., Odabas, S., Garipcan, B. Cellulose, 2020.
3. Fontana G, Gershlak J. et al. Adv Healthc Mater., 2017.