

**BIOMEDICAL & VETERINARY SCIENCES
GRADUATE PROGRAM**



ANNOUNCES

The Master of Science Seminar and Examination of

Yağmur Taşdemiroğlu
**“Small Therapeutic Peptides: In vitro
pharmacokinetics of alpha-carboxyl terminus 11
peptide in rat plasma”**

**Wednesday, May 5th, 2021
12:00PM**

Zoom: <https://virginiatech.zoom.us/j/82093669928>



Bio

Originally born and raised in Turkey, I have lived in the beautiful city of Istanbul all my life. I have earned my BS degree from Koç University, Istanbul in Molecular Biology & Genetics and Chemistry. Following my undergraduate degree, I was awarded with the Fulbright Scholarship to start my graduate education in the United States. I have joined Dr. He's lab with the Virginia-Maryland College of Veterinary Medicine as a Master's student in the BMVS graduate program in 2019. Apart from academic goals, I enjoy being outdoors, travelling, reading, drawing and writing. Following my graduation, I will be moving back to Turkey and contribute to biomedical industry in my country.

Funded by

National Institute of Health
VMCVM Office of Research and Graduate Studies

Lay Language Abstract

Current treatments for cardiovascular diseases mainly focus on alleviating symptoms and delaying the disease progression by small molecule drugs and lifestyle changes, which are unable to provide a permanent cure. Peptide treatment is a novel method to treat various traditionally incurable diseases, such as auto-immune disorders and cancer. These therapeutic peptides are highly target specific, typically non-toxic and highly biocompatible. However, there is a major drawback using these small therapeutic peptides; they have a very short half-life in plasma.

Alpha-carboxyl terminus 11 peptide (α CT11) is a small peptide that has showed cardioprotective effects when it is administered to the heart before an ischemia-reperfusion injury, such as a heart attack. This study investigates the in vitro pharmacokinetic properties of α CT11 in rat plasma with respect to time, temperature and sex with the aim to provide an effective method to allow elongate half-life in plasma. The results have also shown that while sex is not a significant factor, time and temperature are the main factors affecting α CT11 degradation in rat plasma in vitro. Additionally, enzyme inhibitors used as a method to prevent α CT11 degradation significantly delayed the degradation process, indicating that this small peptide can be protected in plasma with the use of inhibitors. This discovery can be a stepping stone to use α CT11 in clinical settings to improve cardiovascular disease treatments.

Presentations

BMVS Seminar Series – March 31st, 2021
31st Annual Research Symposium – March 26th, 2021

Examination Graduate Committee

Major Advisor/Chair:

Jia-Qiang He, PhD
Associate Professor
Department of Biomedical Sciences & Pathobiology

Graduate Advising Committee Members:

Robert Gourdie, PhD, FAHA
Professor, Virginia Tech Carilion and Wake Forest University
Director of the Center for Heart and Regenerative Medicine, VTCRI

Marion F. Ehrich, PhD
Professor Emerita
Department of Biomedical Sciences & Pathobiology

Jennifer L. Davis, DVM, PhD
Associate Professor
Department of Biomedical Sciences & Pathobiology



VIRGINIA TECH™