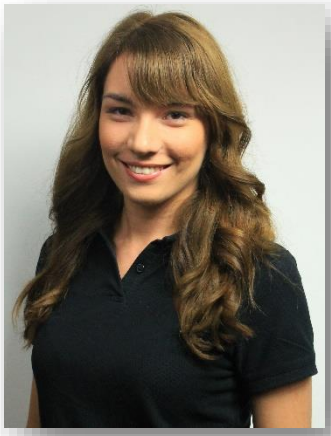
Curriculum Vitae

PERSONAL DATA



Name:	**Virag Szekely**
Date of Birth:	**30 January 1994**
Nationality:	**hungarian**
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Residential place:	**Budapest**
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EDUCATION

February 2016 – present (Expected graduation: January 2018)

Budapest University of Technology and Economics

Biochemical engineer, MSc

September 2012 – January 2016

Budapest University of Technology and Economics

Biochemical engineer, BSc

Title of thesis: Development of new fluorescence-based assay for investigating functional acitivity of pharmacologically important human Organic Anion Transporting Polypeptides (OATPs)

Supervisors: Csilla Özvegy-Laczka (senior fellow), Izabel Patik (PhD student)

September 2008 – May 2012

Varga Katalin Secondary School, Szolnok

Maths – English class

RESEARCH EXPERIENCE

- July 2015: Professional practice, BSc student at Hungarian Academy of Sciences, Membrane Proteins Research Group
  As an MSc student, I still continue my work in this group.

- July 2016: Professional practice, MSc student in Gedeon Richter pharmaceutical company, Molecular Cell Biology Research Laboratory

SCIENTIFIC AWARDS

- July 2017: Stephen W. Kuffler Research Scholarship
- March 2017: Students' Scientific Conference of Hungary, Class of Biochemistry&Biotechnology Section of Chemistry and Chemical Industry
  1st prize
- October 2016: Gedeon Richter pharmaceutical company's internal application for summer intern students „Narrative of summer professional practice 2016"
- September 2016: Hungarian Intellectual Property Office's Janos Ujvari thesis application, the investigation of the thesis in the subject of intellectual properties
  3rd prize
- November 2015: Students' Scientific Conference of Budapest University of Technology and Economics, Section of Biochemistry&Biotechnology
  3rd prize

LANGUAGES

English – intermediate

French – intermediate

PUBLICATION

Izabel Patik; Virág Székely; Orsolya Német; Áron Szepesi; Nóra Kucsma; György Várady; Gergely Szakács; Éva Bakos; Csilla Ozvegy-Laczka.
„Identification of fluorescent amine reactive dyes as novel substrates of Organic Anion Transporting Polypeptides OATP1B1, 1B3 and 2B1 for screening transporter function and drug interactions"
(Under reviewing: Biochemical Pharmacology)

PRESENTATIONS

Izabel Patik, Virág Székely, Daniella Kovacsics, Orsolya Német, Szilárd Tóth, Tímea Windt, Éva Bakos, Csilla Laczka
"New fluorescence-based functional assays for Organic Anion Transporting Polypeptides (OATPs), transporters involved in drug ADME-Tox"
MBKE, Szeged, Hungary, 2016

Izabel Patik, Daniella Kovacsics, Orsolya Német, Virág Székely, Éva Bakos and Csilla Laczka
"Organic Anion Transporting Polypeptides, uptake transporters involved in drug absorption, distribution and toxicity"
Straub-days, Szeged, Hungary, 2016

Patik Izabel, Székely Virág, Kovacsics Daniella, Német Orsolya, Windt Tímea, Tóth Szilárd, Bakos Éva és Laczka Csilla
„Pharmacological importance of Organic Anion Transporting Polypeptides (OATPs)"
Symposium of Pharmacology and Drug metabolism, Galyatető, Hungary, 2016

Laczka Csilla, Patik Izabel, Német Orsolya, Székely Virág, Bakos Éva
„OATPs and fluorescent molecules: beyond assay development"
6th Symposium of György Gárdos, Mátraháza, Hungary, 2016

Izabel Patik, Virag Szekely, Eva Bakos, Csilla Ozvegy-Laczka
„New fluorescent methods for the functional investigation of drug transporters"
9th SFB35 Meeting, Bécs, 2014

POSTER

Izabel Patik, Virág Székely, Daniella Kovacsics, Csilla Laczka
„New methods for the functional investigation of drug transporters"
Straub-days, Szeged, Hungary, 2016

RESEARCH INTERESTS

Liver has central role in the defense of the body. Detoxification in hepatocytes is a strictly controlled process, in which governed action of membrane transporters involved in the uptake and efflux of potentially dangerous molecules has crucial role. Major drug transporters of the liver belong to the

ABC (ATP Binding Cassette) and SLC (Solute Carrier) protein families. Organic Anion Transporting Polypeptides (OATPs) belonging to the SLCO family catalyze the uptake of molecules into the cells. I started my research in 2015 spring supervised by Csilla Laczka and Izabel Patik focusing on the understanding of the functional activity of OATPs. In my work, I study major hepatic drug uptake transporters of the OATP family, OATP1B1, 1B3 and 2B1. OATP1B1 and 1B3 are exclusively expressed in the liver, while OATP2B1 is widely distributed in the human body (liver, small intestine, blood-brain barrier, placenta, heart, skeletal muscles). All three proteins transport bile acids, bilirubin, sex hormones and they also interact with many clinically used drugs (e.g. antiviral and chemotherapeutic drugs).

The removal of toxic molecules from the cell is accomplished by ABC-MDR multidrug transporters of the ABC (ATP-binding Cassette) family. The two transporter families have similar expression pattern and also overlapping substrate specificity. Their mutations, polymorphism, and the co-administration use of their substrates causes altered pharmacokinetics. Hence, monitoring these proteins during drug development is obligatory. Therefore, reliable and cost effective in vitro assays for ABC-MDR and OATP proteins are of high relevance. Fluorescent dyes, recognized by these multispecific transporters are good candidates to develop safe and sensitive functional transporter assays. Our group has already identified such fluorescent substrates and we developed a safety and reliable fluorescence-based functional assay which is suitable for screen OATP-drug interactions with a high throughput. My task is the detailed characterization of these novel substrates in order to find the best molecules for fluorescence-based assay(s) suitable for studying the activity and drug interactions of OATP and ABC-MDR proteins.