KRISZTINA SIMA

CONTACT

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Budapest, Hungary

in/krisztina-sima/

EDUCATION

Pázmány Péter Catholic University, Faculty of Information Technology and Bionics

BSc in Molecular Bionics Engineering | 2018-2022

Pázmány Péter Catholic University, Faculty of Information Technology and Bionics

MSc in Medical Biotechnology (Molecular Biotechnology specialisation) | 2022-2024

LANGUAGE SKILLS

- English (Fluent/C1)
- German (Intermediate/B2)
- Hungarian (Native)

SKILLS

- Cell culture
- Viability assays
- Genome editing (CRISPR-Cas9)
- Transfection methods (viral, non-viral)
- Flow cytometry
- Electrophoresis (agarose, PAGE)
- Western blot
- Conventional PCR, qPCR, qRT-PCR
- Sanger sequencing
- R (programming language)
- Python (programming language)

AWARDS & CERTIFICATIONS

- Certificate of Excellence: The Most Prominent Tutored Research Project ("Investigation of neutrophil granulocytes' effector functions with flow cytometry")
- PPCU Faculty Scientific Student Associations' Conference - Biology, Protein Research and Biochemistry Section - Third place (2021)

WORK EXPERIENCE

MOLECULAR BIOLOGIST

Microbiological Reference Laboratory, National Center for Public Health and Pharmacy

Oct 2023 - Aug 2026

- Reception, identification and preparation of clinical samples sent to the laboratory from various sources (BSL-2,3) including:
  - Genomic DNA purification from clinical samples
  - Culturing of strains (e.g. Neisseria gonorrhoeae)
- Atypical respiratory, zoonotic and STI bacterial pathogen detection by NAATs
- Bioinformatic analysis of Sanger sequencing results
- Teaching soon-to-be clinical microbiologists and doctoral residents on the "Fundamentals of Molecular Diagnostics"

GRADUATE RESEARCH STUDENT

Institute of Biochemistry and Molecular Biology, Semmelweis University

Aug 2022 - Jan 2024

Generation and molecular characterization of CRISPR-Cas9 system edited human cell lines with focus on rare metabolic diseases

- Production of CRISPR/Cas9 oligonucleotide (gRNA) knock-in plasmids
- Molecular cloning, bacterial transformation, plasmid purification
- HL60 cell line transfection (electroporation, lentiviral transfection)
- Validation of editing-efficiency by Western blot
- Screening for strong gRNA candidates for gene editing with agarose gel electrophoresis (T7E1 assay)

Investigation of neutrophil granulocytes' effector functions with flow cytometry

- Culturing of HL60 cell lines and differentiation into neutrophil granulocyte-like cells
- Monitoring of changes in proliferation rate, apoptosis/necrosis rate
- Establishment of flow cytometry pipeline for distinguishing neutrophil granulocyte-like cells

REGULATORY AFFAIRS INTERN

Egis Pharmaceuticals PLC

April 2021 - March 2024

- Regulatory data management (Excel, SQL, VBA)
- Analysis and visualisation of regulatory data
- Establishment of protocols and coordination of data cleaning in databases
- Training and mentoring of newcomers, fellow interns as a senior intern

RESEARCH STUDENT

Institute of Genetics and Biotechnology, Hungarian University of Agriculture and Life Sciences

Aug 2019 - Jan 2022

Investigation of the proliferation rate of male (ZZ) and female (ZW) chicken primordial germ cell lines with an automated cell counter

- Contribution to the creation of alternative primordial germ cell (PGC) culture media by component optimisation
- Comparison of proliferation rate, apoptosis and necrosis rate of PGCs in two candidate culture medias
- Detection of surface markers native to PGCs with immunohistochemistry