# Vilmantė Žitkutė

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## Education

2017-2021 Doctoral degree in Biochemistry, Vilnius University, Vilnius, Lithuania, Laboratory of Assoc. Prof. Dr. Aušra Sasnauskienė. "The Analysis of the Molecular Mechanisms of Resistance to 5-fluorouracil and Oxaliplatin in Human Colorectal Carcinoma Cells".

2015-2017 Master's degree in Molecular biology, 91 ECTS credits, Vilnius University, Vilnius, Lithuania. Average grade 9.75/10
Master's thesis research project "The Role of Autophagy for Resistance to Cytotoxic Therapy of Human Colon Cancer Cells HCT116". (30 ECTS credits) evaluated 10/10, supervised by Assoc. Prof. Dr. Aušra Sasnauskienė.

2011-2015 Bachelor's degree in Molecular biology, 240 ECTS credits, Vilnius University, Vilnius, Lithuania. Average grade 8.63/10
Bachelor's thesis research project "Effect of HIF-1 Alpha and Autophagy Proteins ATG7, ATG12 Silencing for the Expression of Cytokines VEGF and IL-1 Alfa Induced by Photodinamic Treatment in Human Epidermoid Carcinoma Cells A-431 in vitro". (15 ECTS credits) evaluated 10/10, supervised by Assoc. Prof. Dr. Aušra Sasnauskienė.

## Experience

Projects:

Participant in the EMBL-PI assosiated project "Delivery of RNPs and off-targets", project leader Vytautė Starkuvienė-Erfle, Vilnius University, Life Sciences Center, EMBL Partnership Institute, 2022-2023.

Participant in the project "Application of an integrated approach for the investigation of genetic causes of rare inherited disorders", Research Council of Lithuania, S-MIP-21-15, Vilnius University, Faculty of Medicine, Institute of Biomedical Sciences, 2021-2023.

Owner of the project "CRISPR-Cas13 technology application to investigate resistance to chemotherapy agents", The Research Promotion Fund of Vilnius University, MSF-JM-2/2021, Vilnius University, Life Sciences Center, Institute of Biosciences, 2021-2022.

Participant in the project "Self-assembling Phage Proteins for Targeted Nanomedicine", Research Council of Lithuania, S-SEN 20-4, Vilnius University, Life Sciences Center, Institute of Biochemistry 2020-2021.

Participant in the project "A systems biology approach to analyze the functional interaction of protein coding RNAs and non-coding RNAs", German Federal Ministry of Education and Research (BMBF), Heidelberg University, Heidelberg, Germany, 2017-2018.

Participant in the project "Carcinoma cells resistance to chemotherapy in vitro: autophagy, cytokines and oxidative stress", Research Council of Lithuania, Vilnius University, Life Sciences Center, Institute of Biosciences, 2014-2016.

## Academic experience

**Lecturer since 2021**

Laboratory practicals to Bachelor' students of Molecular Biology program in Molecular Biology course. Topics: PCR, RNA extraction, copy DNA synthesis etc.

Short practical course to Master' students of Molecular Biology study program in Molecular Cell Biology course. Topic of practise "Analyzing fluorescence microscopy images with Fiji".

**Supervision:**

Supervisor of three Bachelor students of Molecular biology program (2021, 2022, 2024).

Consultant of four Bachelor students of Molecular biology (2020), Biochemistry (2019, 2020) and Genetics (2023) programs.

## Internships and training

**Internships:**

PhD internship, 2017.08-2018.08 (12 months), BioQuant, Heidelberg University, Heidelberg, Germany.

ERASMUS+, 2017.02-2017.08 (6 months), BioQuant, Heidelberg University, Heidelberg, Germany.

**Training:**

"High Throughput Screening and Image Analysis for BioSciences", 2021.05.25-28, Instituto de Investigação e Inovação em Saúde, University of Porto, Porto, Portugal.

"Advanced Application Training Leica TCS SP8 STED 3x / FALCON" 2019.10.8-9, Vilnius University, Vilnius, Lithuania.

Course in Experimental Laboratory Animal Science (Certificate of FELASA category C), 2017, Vilnius University, Vilnius, Lithuania.

## Skills

Human cancer cells' cultivation (experience of ten years)

Cell viability tests: MTT, crystal violet, CTB

Gene expresion downregulation using siRNA, sgRNA, Cas9-sgRNA riboprotein complexes

RT-PCR

Western blot

ELISA

Immunofluorescence microscopy

## Publications

1. Zitkute V, Jasinevicius A, Vaitiekaite G, Kukcinaviciute E, Aleksandraviciute B, Eidenaite E, Sudeikis L, Jonusiene V, Sasnauskiene A. The role of p62 in cell death and survival of 5-fluorouracil and oxaliplatin-resistant colorectal cancer cells. J Cell Biochem, 124; 2023; 1779-1791. DOI: 10.1002/jcb.30488

2. Gabrielaitis D[#], Zitkute V[#], Saveikyte L, Labutyte G, Skapas M, Meskys R, Casaite V, Sasnauskiene A[†], Neniskyte U[†]. Nanotubes from bacteriophage tail sheath proteins: internalisation by cancer cells and macrophages. Nanoscale advances. 1. 5; 2023; 3705-3716. DOI: 10.1039/D3NA00166K

3. Siavriene E, Petraityte G, Mikstiene V, Maldziene Z, Sasnauskiene A, Zitkute V, Ambrozaityte L, Rancelis T, Utkus A, Kucinskas V, Preiksaitiene E. Molecular and Functional Characterisation of a Novel Intragenic 12q24.21 Deletion Resulting in MED13L Haploinsufficiency Syndrome. Medicina (Kaunas); 59; 2023. DOI: 10.3390/medicina59071225

4. Zitkute V, Kukcinaviciute E, Jonusiene V, Starkuviene V, Sasnauskiene A. Differential effects of 5-fluorouracil and oxaliplatin on autophagy in chemoresistant colorectal cancer cells. J Cell Biochem. 2022;123:1103-1115. DOI: 10.1002/jcb.30267

5. Grigaitis P, Jonusiene V, Zitkute V, Dapkunas J, Dabkeviciene D, Sasnauskiene A. Exogenous interleukin-1alpha signaling negatively impacts acquired chemoresistance and alters cell adhesion molecule expression pattern in colorectal carcinoma cells HCT116. Cytokine. 2019;114:38-46. DOI: 10.1016/j.cyto.2018.11.031

6. Dabkeviciene D, Jonusiene V, Zitkute V, Zalyte E, Grigaitis P, Kirveliene V, Sasnauskiene A. The role of interleukin-8 (CXCL8) and CXCR2 in acquired chemoresistance of human colorectal carcinoma cells HCT116. Med Oncol. 2015;32:258. DOI: 10.1007/s12032-015-0703-y

# Equally contributed to the first authorship
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