

MARYNA KRYVOKHYZHA, PhD

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Education and Key Qualifications

- 2020 Ph.D., Thesis: “The effect of ionising and ultraviolet radiation on the flowering of *Arabidopsis thaliana* plants”. Kyiv, 2019. PhD Thesis Mentor: Prof. Namik Rashydov, PhD
Institute of Cell Biology and Genetic Engineering, National Academy of Sciences of Ukraine.
- 2011 Master/ Genetics, Faculty of Biology, B.N. Karazin National University of Kharkiv, Ukraine.

Key Qualifications: proteomics, posttranslational proteomics, protein extraction and purification, DNA/RNA extraction, PCR/qPCR, RNA SEQ library prep, *in vitro* plant cultivation, statistics, scientific writing, and data presentation.

After completing my PhD in 2017, I took a five-year break from academic research, during which I assumed organisational and managerial roles at my home institute. Unfortunately, the results of my R&D work were not permitted for publication. During this period, I developed a strong background in managing commercial laboratories.

Current and previous positions:

- Since 01/03/2023 *Institute of Plant Genetics and Biotechnology of the Slovak Academy of Sciences, Slovakia*
Postdoctoral researcher, 100%. Funded by the EU NextGenerationEU through the Recovery and Resilience Plan for Slovakia. Proteomic studies, phosphoproteomic workflow performance, *in vitro* plant cultivation, bioinformatics (MapMan, PLAAC, STRING).
- Since 2017 *Institute of Cell Biology and Genetic Engineering of the National Academy of Sciences of Ukraine*
Postdoctoral researcher at 30% (on sabbatical leave). 2014-2017 Ph.D. student. Plant stressors study, qPCR, infrared and Raman spectroscopy, proteomic data analysis, and *in vitro* plant culture. Internships at the University of Göttingen, Department of Forest Genetics.
- 2022 – 2023 *RNA Sequencing Department, private research company MultiplexDX, Bratislava, Slovakia*
R&D senior scientist, SCO Assistant, 100%. Breast cancer research, FFPE-RNA extraction, RNA SEQ library prep, statistical analysis (GraphPad Prism, R), post-analytic stage, statistical results verification.
- 2021 – 2022 *Integrated Medical Group Ltd. (Kyiv, Ukraine), private research company*
Molecular Biology Project Manager, 100%. Projects to implement IVD methods as PCR-diagnostic, RNA SEQ, contact with suppliers, brand management, lab space planning and design, equipment operations, and consultation.
- 2020-2021 *Interstarch Ukraine (Kyiv, Ukraine), food industry*
Head of Biotechnology R&D, 100%. Team leadership of the biotechnology, microbial synthesis, bacterial cultivation, HPLC, focusing on recycling agro-industrial wastes.
- 2017-2020 *Lightgene Ltd. (Kyiv, Ukraine).*
Molecular biology application specialist, 100%. Implementation and customer support in PCR, sampling automation, liquid cytology, NGS consultations, and reclamation solving.
- 2012-2014 *“Dvorichansky” National Nature Park (Kharkiv region, Ukraine)*

Research Assistant, 100%. Study the botanical and biodiversity aspects of plants in a nature reserve territory, focusing on ecological and geobotanical research, as well as the implementation of geographic information systems.

2010-2012 *National Nature Park “Gomilshansky lesy” (Kharkiv region, Ukraine)*

Ecological education and recreation specialist, 50-100%. Study the botanical and biodiversity aspects of plants in a nature reserve territory, focusing on environmental and geobotanical research, as well as the implementation of geographic information systems.

MAIN RESEARCH ACHIEVEMENTS

1. Paul E.D., Huraiová B., Valková N., Matyasovska N., Gábrišová D., Gubová S., Ignačáková H., Ondris T., Gala M., Barroso L., Bendíková S., Bíla J., Buranovská K., Drobná D., Krchňáková Z., **Kryvokhyzha M.**, Lovíšek D., Mamoiylk V., Mancikova V., Vojtaššáková N., Ristová M., Comino-Méndez I., Andrašina I., Morozov P., Tuschl T., Pareja F., Kather J.N., Čekan P. The spatially informed mFISHseq assay resolves biomarker discordance and predicts treatment response in breast cancer. (2025) Nature Communications, 16 (1), art. no. 226, DOI: 10.1038/s41467-024-55583-2
2. **Kryvokhyzha M.**, Litvinov S., Danchenko M., Khudolieieva L., Kutsokon N., Baráth P., Rashydov N. (2024) How does ionizing radiation affect amyloidogenesis in plants? International Journal of Radiation Biology, 100 (6), pp. 922 - 933, DOI: 10.1080/09553002.2024.2331126. IF 2.1 (2023), Q1
3. **Kryvokhyzha M.V.**, Krutovsky K.V., Rashydov N.M. Differential expression of flowering genes in Arabidopsis thaliana under chronic and acute ionising radiation. (2019) International Journal of Radiation Biology, 95 (5), pp. 626 - 634, Cited nine times. DOI: 10.1080/09553002.2019.1562251. IF 2.266 (2018), Q1
4. Danchenko M., Klubicova K., **Krivohizha M.**, Berezhna V.V., Sakada V.I., Hajduch M., Rashydov N. Systems biology is an efficient tool for investigation of low-dose chronic irradiation influence on plants in the Chornobyl zone. (2016) Cytology and Genetics, 50 (6), pp. 400 - 414, Cited four times. DOI: 10.3103/S0095452716060050. IF 0,27 (2015)

PEER RECOGNITION AND AWARDS

2025 – Slovak Academy of Sciences Award 2025, Issued by the Slovak Academy of Science

The prestigious scientific award in Slovakia for teamwork on the plant stress study. My contribution involves studying the influence of radiation on amyloid formation in plants following radiation exposure.

2025 – the Prize of the Parliament of Ukraine for Young Scientists. This recognition was granted for my research on the impact of radiation on plant reproduction.

2024 – Certified Associate in Project Management (CAPM)®, Issued by Project Management Institute

2023 – Fellowship for excellent researchers threatened by the war in Ukraine of EU NextGenerationEU through the Recovery and Resilience Plan for Slovakia 09I03-03-V01-00142

2020-2022 – Ukrainian National Research Fund, 84/02.2020 “Influence of stress factors on protein synthesis with prion properties in plants.” Total funds are ~400,000 EUR. Team member and co-author of the proposal.

2017 – Graduate Student Fellowship of the Slovak Republic, Plant Science and Biodiversity Centre, Slovak Academy of Sciences (Nitra, Slovakia).