

# MANUELLA PETKOVIC

091 572 4007 | [mpetko.business@gmail.com](mailto:mpetko.business@gmail.com)

## PROFESSIONAL SUMMARY

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Quantitative biology graduate with 6+ years of laboratory experience across molecular biology, microbiology, and chemical analysis. Skilled in PCR, chromatography, compound synthesis, bacterial cultures, as well as big data analysis and visualization using Python and R. Experienced in interdisciplinary research through academic projects and internships in biotechnology, medical labs, and applied bioinformatics. Strong collaborator with resilience, adaptability, and commitment to sustainable and innovative scientific research.

## EDUCATION

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### **Kerschensteiner Schule**

*Chemical-technical assistant*

2018 – 2021

*final grade: 2.2*

### **Heinrich Heine University, HHU**

*Bachelor of Quantitative Biology*

2021 – 2025

*final grade: 2.5*

## WORK EXPERIENCE AND INTERNSHIPS

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### **JÜLICH RESEARCH CENTER**

*Biotechnology internship*

2024

*Jülich, Germany*

- Optimization of itaconic acid production in *ustilago cytodontis* on a laboratory scale
- Upscaling fermentation process for industrial production of itaconic acid in bioreactors
- Mutant phenotyping for presence/absence of genes

### **CABREIRO LAB INTERNSHIP**

*Bachelor preparation internship*

2024

*Köln, Germany*

- High-throughput screen of auranofin susceptibility in *E. coli* pangenome
- Data interpretation and visualization using Python
- Growth media, agar plates, cell cultures, data analysis

### **SCHLAFLABOR NEUSS**

*Medical assistant*

May 2023 – Aug 2024

*Neuss, Germany*

- Administered cables for neurological, heartrate and leg movement monitoring
- Conducted CPAP-based measurements; evaluation of breathing patterns for potential apneas; prepared data for physician analysis
- Administrative work, i.e. transfer of patient data into the system, taking health insurance data, preparing data for further examination by the doctors, preparing the patients for discharge

### **GEMEINSCHAFTSPRAXIS FÜR LABORMEDIZIN**

*Medical assistant*

Feb 2022 – Dec 2022

*Düsseldorf, Germany*

- Administrative work, i.e. patient data management and reporting
- PCR testing of samples for Covid-19 infection

### **NIERENZENTRUM STUTTGART-VAIHINGEN**

*Internship as a medical assistant*

2018

*Stuttgart, Germany*

- Medical assistant at a dialysis center
- Documentation of patient information, appointment scheduling, accompanying patients
- Preparation of the room in between patients, preparation of the blood samples for shipment to labs
- Measuring blood pressure, analysis of urine samples

- Participated in scientific workshops (magnetic field demos, soldering, pocket warmer creation)

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**OTHER WORK EXPERIENCE**

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**BIERGARTEN IM SCHLOSSGARTEN**

Apr 2025 – Sep 2025

*Cashier*

Stuttgart, Germany

- Customer service, order handling, food and beverage preparation, HACCP hygiene compliance

**SCHWABEN-BACK GmbH**

Apr 2020 – Sep 2020

*Cashier*

Stuttgart, Germany

- Sales and preparation baked goods, customer service, inventory management, HACCP hygiene compliance

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**SELECTED ACADEMIC PROJECTS**

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**Microbloom.**

2023

*University project*

Düsseldorf, Germany

- Developed sustainable biotech concept for rose oil production using engineered bacteria
- Conducted literature research, wrote grant proposal, and built website for project
- Presented project and integrated feedback for improvement

**HIV-degrading enzymes**

2024

*University project*

Düsseldorf, Germany

- Designed theoretical research project to develop enzymes degrading HIV particles in blood
- Targeted blood donation shortages in war zones and low-resource countries
- Conducted cost analysis and drafted grant proposal

**Auranofin Resistance Patterns in E. coli Pangenome and Their Impact on C. elegans Longevity**

Apr 2024- Mar 2025

*Bachelor Thesis*

Düsseldorf, Germany

- Genetic analysis of selected AF-resistant and AF-sensitive *E. Coli* strains
- Genetic engineering of *E. coli*
- Host-Microbe interaction investigation on the lifespan using *C. elegans* and *E. coli*
- Growth media, agar plates, DNA extraction and purification, gel electrophoresis, phage transduction, media preparation, *C. elegans* maintenance

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**Technical Skills**

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**Programming and Data Analysis:** Python, R, JavaScript, MS Office, GraphPad Prism**Molecular Biology:** PCR, gel electrophoresis, compound synthesis and identification, bacterial cell culture**Analytical Techniques:** chromatography, spectroscopy, titration**Data management:** literature research, documentation, visualization, statistical analysis, mathematical modelling**Laboratory safety:** handling S2 organisms, hazardous chemicals, waste disposal, safety protocols

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**Soft Skills**

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Teamwork, empathy, time management, creative problem solving, attention to detail, reliability, flexibility