

Mikolaj Kocikowski, PhD

contact@kocikowski.com | kocikowski.com

BIOINFORMATICS & BIOTECH

About Me

PhD in cancer immunology and bioinformatics with experience across academia and industry, including work on a therapeutic antibody now available to patients. I focus on improving cancer immunotherapy and matching treatments to individuals. My research spans antibody engineering, omics and immune repertoire analysis with results presented at AACR and Oxford, published in peer-reviewed journals, and supported by competitive grants. Entrusted by the European Innovation Council to monitor a funded Pathfinder consortium in next-generation immunotherapy. I'm committed to open, reproducible science, with formal training through the UK Reproducibility Network and EMBL. I served as a mentor in Polonium Foundation, organized popular science festivals and taught immunology in a Scottish top security prison. Outside of work, I enjoy forest hiking, wildlife photography, and dancing bachata.

Experience

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|---|------------------|
| Bioinformatician — Freelance (Linköping, SE) | 2023-Now |
| <ul style="list-style-type: none">• European Commission expert for grant monitoring• Bioinformatics projects in long-read NGS, scFv discovery, anti-COVID antibodies | |
| PhD Student — University of Gdansk (PL) & University of Edinburgh (UK) | 2017-2023 |
| <ul style="list-style-type: none">• <i>"Of Dogs and Men: Tracing Immune Checkpoint Signatures Across Cancers and Unleashing the Potential of Canine PD-1 Antibodies"</i>; defended on 2024-04-12; details: kocikowski.com/phd.• Worked at the Roslin Institute (UK), Edinburgh Cancer Research Centre (a CRUK institute, UK), and International Centre for Cancer Vaccine Science HQ (Poland)• Profiled immune checkpoint expression patterns across cancers (RNAseq, R, Bash, HPC, Slurm)• Analyzed immune repertoires (MiXCR, IMGT, IgBlast, Immunarch, Illumina/PacBio/Nanopore)• Performed antibody species translation (protein engineering, PyMol, Schrödinger Bioluminate)• Developed antibodies (wet lab: cell culture, phage display, WB, ELISA, PCR, qPCR, FC) | |
| QC Specialist — Polpharma Biologics (Gdansk, PL) | 2017 |
| <ul style="list-style-type: none">• Wrote technical documentation and translated to English under GDP• Designed GMP laboratories and coordinated technology trainings | |
| R&D Associate — Polpharma Biologics (Gdansk, PL) | 2016-2017 |
| <ul style="list-style-type: none">• Took part in a successful development of a therapeutic antibody• Developed analytical methods and automated data analysis under GMP/GLP | |
| Researcher — Medical University of Gdansk (Gdansk, PL) | 2013-2014 |
| <ul style="list-style-type: none">• A ministerial student grant "Generation of the Future" on lncRNA in prostate cancer | |
| Student Scientist — Pomeranian Science and Technology Park (Gdynia, PL) | 2011-2012 |
| <ul style="list-style-type: none">• Developed a genetic diagnostics tool for a leading Polish company | |
| Summer Intern — Biological Threats Identification and Countermeasure Centre (Pulawy, PL) | 2011 |
| <ul style="list-style-type: none">• Isolated bacteriophages against pathogenic bacteria of military significance | |

Education

MSc Medical Biotechnology — University of Gdansk (PL) & Marche Polytechnic University (IT) **2015**

- Graduated with honours, Dean's, Rector's, and Province Marshal's awards
- Thesis project on the endocrine disrupting properties of plastic additives

BSc Biotechnology — University of Gdansk & Medical University in Gdansk (PL) **2013**

- Vice-president of BIO-MED students association: science outreach, research
- Thesis project on reducing the genotoxicity of chemotherapy

Grants

- **British Society for Immunology** – Career Enhancing Grant (2021)

Molecular modeling techniques for computational screening of canine anti-cancer antibody candidates

- **Polish National Agency for Academic Exchange** – PROM Mobility Grant (2020)

Internship at the Royal (Dick) School of Veterinary Studies, Edinburgh, UK

- **European Union** – International Research Agendas Programme (2017)

PhD position funded via a strategic grant establishing the *International Centre for Cancer Vaccine Science*

- **Polish Ministry of Science and Higher Education** – Generation of the Future (2013)

The role of non-coding RNA in chromatin methylation and prostate cancer metastasis

Conference talks

Kocikowski, M., (2022). "Of dogs and men. How canines can help cure human cancers"; Science – Polish Perspectives, University of Oxford, Oxford UK

Outreach

- Delivered lectures on immunology for inmates at a Scottish top-security prison (2019)
- Co-organized public engagement at the Festival of Physics, Edinburgh (2018)
- Co-organized a workshop for teens at the Easter Bush Science Outreach Centre (2018)

Teaching and Supervision

- Mentor in Polonium Foundation, guided students to achieve their goals (2022-2024)
- Co-mentored MSc, PhD students, and Vets at the Roslin Institute (2018-2020)
- Taught lab techniques at the Royal (Dick) School of Veterinary Science (2019)

Selected Training

- BioAI Hackathon - gene prioritization via Graph Neural Networks (CeNT, Warsaw, 2025)
- Computing skills for reproducible research (EMBL Heidelberg, 2025)
- Introduction to Computational Antibody Engineering (Schrödinger online, 2021)
- Winter school in Advanced Methods for Reproducible Science (Windsor, 2020)
- Project Management and Entrepreneurship (University of Edinburgh, 2018-2020)
- Mass Spectrometry School in Biotechnology and Medicine (Dubrovnik, 2019)
- Bioinformatics for Genomics (Edinburgh Genomics, 2019)
- Network Analysis with Graphia (Kajeka Ltd., Roslin, 2019)
- Masterclass in Scientific Writing and Publishing (Nature, Edinburgh, 2018)
- Young Entrepreneur Scheme Workshop and Competition (YES, Manchester, 2018)

Publications

Submitted

Kocikowski M, Mayordomo M, Alfaro J, Parys M. *Barking up the right tree: Immune checkpoint signatures of human and dog cancers*. bioRxiv (2024): doi.org/10.1101/2024.06.26.600825. Final revisions at PLOS Computational Biology.

Grabarczyk D*, **Kocikowski M***, Parys M, Houston DR, Hupp T, Alfaro JA, Cohen SB. *DoggifAI: A transformer-based approach for antibody caninisation*. bioRxiv (2025): doi.org/10.1101/2025.05.28.656573. Submitted to Immunoinformatics.

Waleron M, Kallor AA, Pałkowski A, Daghir-Wojtkowiak E, Borole P, **Kocikowski M**, et al. *Expanding the definition of MHC Class I peptide binding promiscuity to support vaccine discovery across cancers with CARMEN*. bioRxiv (2024): doi.org/10.1101/2025.05.08.651510. Submitted to Nature Communications.

Peer-Reviewed

Kocikowski M, Dziubek K, Węgrzyn K, Hrabal V, Zavadil-Kokas F, Vojtesek B, Alfaro JA, Hupp T, Parys M. *Comparative characterization of two monoclonal antibodies targeting canine PD-1*. Front Immunol. 2024. doi.org/10.3389/fimmu.2024.1382576

O'Neill JR, Yébenes Mayordomo M, Mitulović G, Al Shboul S, Bedran G, Faktor J, Hernychova L, Uhrik L, Gómez-Herranz M, **Kocikowski M**, et al. *Multi-omic analysis of esophageal adenocarcinoma uncovers candidate therapeutic targets and cancer-selective posttranscriptional regulation*. Mol Cell Proteomics. 2024. doi.org/10.1016/j.mcpro.2024.100764

Minoli L*, Licenziato L*, **Kocikowski M***, Cino M, Dziubek K, Iussich S, Fanelli A, Morello E, Martano M, Hupp T, Vojtesek B, Parys M, Aresu L. *Development of monoclonal antibodies targeting canine PD-L1 and PD-1 and their clinical relevance in canine apocrine gland anal sac adenocarcinoma*. Cancers. 2022. doi.org/10.3390/cancers14246188

Bojko M, Węgrzyn K, Sikorska E, **Kocikowski M**, Parys M, Battin C, Steinberger P, Kogut MM, Winnicki M, Sieradzan AK, Spodzieja M, Rodziejewicz-Motowidło S. *Design, synthesis and biological evaluation of PD-1 derived peptides as inhibitors of PD-1/PD-L1 complex formation for cancer therapy*. Bioorg Chem. 2022. doi.org/10.1016/j.bioorg.2022.106047

Uhrik L, Hernychova L, Muller P, Kalathiya U, Lisowska MM, **Kocikowski M**, et al. *Hydrogen deuterium exchange mass spectrometry identifies the dominant paratope in CD20 antigen binding to the NCD1.2 monoclonal antibody*. Biochem J. 2021. doi.org/10.1042/BCJ20200674

Kocikowski M, Dziubek K, Parys M. *Hyperprogression under immune checkpoint-based immunotherapy: Current understanding, the role of PD-1/PD-L1 tumour-intrinsic signalling, future directions and a potential large animal model*. Cancers. 2020. doi.org/10.3390/cancers12040804

Kote S, Faktor J, Dapic I, Mayordomo MY, **Kocikowski M**, Kagansky A, Goodlett D, Vojtesek B, Hupp T, Wilcockson D, Piper R. *Analysis of venom sac constituents from the solitary, aculeate wasp *Cerceris rybyensis**. Toxicon. 2019. doi.org/10.1016/j.toxicon.2019.07.012

Poster presentations

Kocikowski, M. (2023). Twins. *Immune checkpoint transcription patterns of dog and human brain cancers*. Canvas Spring School, Sobieszewo, Poland.

Kocikowski, M., Dziubek, K., Wojtesek, B., Argyle, D., Hupp, T., & Parys, M. (2020). Abstract 2234: *Development of caninized monoclonal antibodies against PD1*. Cancer Research, 80(16 Supplement), 2234–2234. doi.org/10.1158/1538-7445.AM2020-2234, AACR, virtual, USA.

Dziubek, K., **Kocikowski, M.**, Wojtesek, B., Argyle, D., Lisowska, M., Hupp, T., & Parys, M. (2020). Abstract 5637: *Investigating tumor intrinsic PD-1/PD-L1 signaling in canine osteosarcoma cell lines as a spontaneous model for human disease*. Cancer Research, 80(16 Supplement), 5637–5637. doi.org/10.1158/1538-7445.AM2020-5637, AACR, virtual, USA.

Wang, Y.J., Pietrzak, K., **Kocikowski, M.**, Argyle, D., Hupp, T., & Parys, M. (2019). Abstract 3972: *Investigation of tumor intrinsic PD1/PD-L1 in canine urothelial carcinomas as a spontaneous translational model for human invasive bladder cancer*. Cancer Research, 79 (13_Supplement): 3972. doi.org/10.1158/1538-7445.AM2019-3972, AACR, Atlanta, USA.

Kocikowski, M.M., Hupp, T.R., Argyle, D.J. & Parys, M. (2019). *Dogizing Antibodies Against PD1 and CD20*. Mass Spectrometry School in Biotechnology and Medicine, Dubrovnik, Croatia.

I hereby give consent for my personal data included in the application to be processed for the purposes of future recruitment processes in accordance with Art. 6 paragraph 1 letter a of the Regulation of the European Parliament and of the Council (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).