Acquired resistance in pancreatic cancer: characterization and exploration of actionable targets of a multifactorial disease

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About the author

Cecilia Bergonzini was born on May 13th 1995, in Correggio (RE), Italy. However, it should be mentioned that she grew up in Modena. In 2014, she began her Bachelor's degree in Biotechnology at the University of Bologna, Italy. During her undergraduate studies, she undertook an internship at the department of Agricultural and Food Sciences of University of Bologna, isolating and characterizing new species of *Bifidobacterium spp.* in bat microbiota.

After completing her Bachelor's degree in 2017, she focused on biotechnological applications in drug discovery through a Master's degree in Pharmaceutical Biotechnologies, at University of Bologna. In 2019, she received a scholarship to perform her internship abroad, and joined the medical oncology at the VU Medical Center (VuMC) Cancer Center under the supervision of Dr. Giovannetti. Here, she worked on testing the potential anticancer effects of novel compounds on pancreatic ductal adenocarcinoma cell lines. The data gathered during this internship were used for her Master's Thesis.

After graduating from her Master's in November 2019, she started a PhD program at the University of Leiden, under the supervision of Prof. Erik Danen. The project was part of a joint effort between the Cancer Drug Target Discovery group led by Prof. Danen, the Biophysics group led by Prof. Schmidt of Leiden University and the Medical Oncology group in Amsterdam UMC led by Dr. Giovannetti. The aim of this project was to investigate pancreatic cancer mechanisms of chemoresistance with a multidisciplinary approach, combining -omics data with pharmacological and biophysical techniques, to find alternative therapeutic targets. The results of this project are described in this thesis.

In July 2025, after returning to Italy, she joined the Medical Affairs department of GlaxoSmithKline (GSK) in Verona, as a Scientific Advisor, translating scientific evidence into actionable medical strategies and supporting cross-functional teams with clinical and scientific insights.

List of publications

- **Bergonzini C**, Urbanowicz K, Pastore A, Mantini G, Gregori A, McDonnell LA, Smolenski RT, Peters GJ, Giovannetti E, and Danen EHJ. Suppression of dCK activity is shared between gemcitabine resistant PDAC models. *Manuscript in preparation*
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- **Bergonzini C**, Giovannetti E, Danen EHJ. Targeting ABC transporters in PDAC - past, present, or future? Oncotarget. 2024 Jun 20;15:403-406.
- Che PP*, Gregori A*, **Bergonzini C**, Ali M, Mantini G, Schmidt T, Finamore F, Fraga Rodrigues SM, Frampton AE, McDonell LA, Danen EHJ, Slotman BJ, Sminia P & Giovannetti E. Differential sensitivity to ionizing radiation in acquired gemcitabine- and paclitaxel-resistant pancreatic adenocarcinoma cells. Int J Radiat Oncol Biol Phys. 2024 Apr 1;118(5):1328-1343.
- **Bergonzini C***, Gregori A*, Hagens TMS, van der Noord VE, van de Water B, Zweemer AJM, Coban B, Capula M, Mantini G, Botto A, Finamore F, Garajova I, McDonnell LA, Schmidt T, Giovannetti E, Danen EHJ. ABCB1 overexpression through locus amplification represents an actionable target to combat paclitaxel resistance in pancreatic cancer cells. J Exp Clin Cancer Res. 2024 Jan 2;43(1):4.
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- **Bergonzini C**, Kroese K, Zweemer AJM, Danen EHJ. Targeting Integrins for Cancer Therapy - Disappointments and Opportunities. Front Cell Dev Biol. 2022 Mar;9;10:863850.
- Coban B*, **Bergonzini C***, Zweemer AJM, Danen EHJ. Metastasis: crosstalk between tissue mechanics and tumour cell plasticity. Br J Cancer. 2021 Jan;124(1):49-57
- **Bergonzini C**, Leonetti A, Tiseo M, Giovannetti E, Peters GJ. Is there a role for dacomitinib, a second-generation irreversible inhibitor of the epidermal-growth factor receptor tyrosine kinase, in advanced non-small cell lung cancer? Expert Opin Pharmacother. 2020 Aug;21(11):1287-1298.
- Cascioferro S, Petri GL, Parrino B, Carbone D, Funel N, **Bergonzini C**, Mantini G, Dekker H, Geerke D, Peters GJ, Cirrincione G, Giovannetti E, Diana P. Imidazo[2,1-b] [1,3,4]thiadiazoles with antiproliferative activity against primary and gemcitabine-resistant pancreatic cancer cells. Eur J Med Chem. 2020 Mar 1;189:112088.