

Samuel Charles Fehling, PhD

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Professional Profile

Scientist with a PhD in Biomedical Sciences / Cancer Biology and 10+ years of experience spanning translational oncology research and preclinical pharmacology, including small-molecule and antibody therapeutic discovery, target validation and translational biomarker development.

Work Experience

BioCryst Pharmaceuticals Inc.

Sr. Research Biologist

July 2025 – Present

- Designed, optimized and qualified pharmacodynamic assays to quantify total and free therapeutic target levels using the Gyrolab xPlore ELISA for non-human primate (NHP) studies, authoring validation reports.
- Accelerated preclinical development of biologic therapeutics by screening antibody candidates and generating data packages, figures and study reports to support IND-enabling studies.
- Performed surface plasmon resonance (SPR) assays on the Biacore T200 utilizing Protein A and CM5 chips to evaluate binding kinetics and cross-reactivity for antibody therapeutics.

Research Biologist

December 2022 – July 2025

- Screened and characterized the efficacy and mechanism of action of thousands of small-molecule therapeutics and antibody candidates using high-throughput cell-based and cell-free *in vitro* assays to support medicinal chemistry and protein science pipelines.
- Evaluated *in vivo* pharmacodynamic biomarkers in rodent and NHP studies by analyzing plasma samples to quantify total and free protein expression levels to support efficacy and safety assessments.

BioGX Inc.

Research and Development Scientist

February 2020 – December 2022

- Developed 30+ direct-addition PCR assays for custom and FDA EUA-approved diagnostics, executing developments and IQ/OQ/PQ qualifications on BD MAX, QuantStudio, Bio-Rad and ABI 7500 platforms.
- Utilized data modeling and QC risk assessments to validate outgoing products, guide design decisions and train technical personnel.

University of Alabama at Birmingham (UAB)

Graduate Research Assistant

August 2014 – December 2019

- Discovered synergistic drug combination therapies for cholangiocarcinoma by evaluating small-molecule BET bromodomain inhibitors that downregulated c-Myc and Chk1.
- Conducted preclinical *in vivo* oncology studies using athymic nude and C57BL/6 mice, managing oral gavage, intraperitoneal (IP) injections and patient-derived xenograft (PDX) efficacy studies.
- Developed primary and drug-resistant cancer models (*in vitro* and PDX *in vivo*) to investigate therapeutic resistance mechanisms and identify translational biomarkers of drug response.

Education

University of Alabama at Birmingham – Ph.D., Biomedical Sciences / Cancer Biology, December 2019

University of Wisconsin – Eau Claire – B.S., Biochemistry & Molecular Biology, May 2014

Selected Publications

Aubrey L. Miller, Patrick L. Garcia, **Samuel C. Fehling**, Tracy L. Gamblin, Rebecca B. Vance, Leona N. Council, Dongquan Chen, Eddy S. Yang, Robert CAM van Waardenburg, Karina J. Yoon (2021). *The BET Inhibitor JQ1 Augments the Antitumor Efficacy of Gemcitabine in Preclinical Models of Pancreatic Cancer*. Cancers.

Samuel C. Fehling, Aubrey L. Miller, Patrick L. Garcia, Rebecca B. Vance, Karina J. Yoon (2019). *The Combination of BET and PARP Inhibitors is Synergistic in Models of Cholangiocarcinoma*. Cancer Letters.