GlyCanDrug

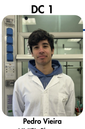
Marie-Sklodowska-Curie Actions - Doctoral Network

A training network on the design of precision therapeutics that target key glycan motifs implicated in cancer

Newsletter 02 — May, 2025

Meet The Doctoral Candidates

DC 1



Pedro Vieira
UNIFI, Florence

My name is ***Pedro****, from Portugal, with a background in organic chemistry. Now based in Italy, where I traded bacalhau for pasta to pursue a career in chemical sciences. Focusing on cancer therapy, I am trying to find new ways to inhibit certain proteins that are essential for cancer survivability.*

DC 2

Georgia-Myrto Prifti
UNIFI, Florence

I am ***Myrto****, a pharmacist originally from Greece. My research focuses on discovering synthetic approaches for precisely targeting cancer glycosylation—more specifically, on the precise delivery of drugs to cancer cells by unlocking new avenues for targeting cancer, such as the Golgi-targeting strategies.*

DC 3

Jordan Gotti
i3s, Porto

I'm ***Jordan****, an Italian researcher with a master's degree in Industrial Biotechnology from the University of Milan. I joined the GlyCanDrug network by starting my PhD in Porto under the supervision of Professor Celso Reis. My project focuses on the evaluation of inhibitors of glycosyltransferases, specifically sialyl- and fucosyltransferases, in gastrointestinal cancer models.*

DC 4

Khanh Nguyễn Tấn
UNIZAR, Zaragoza

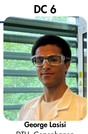
My name is ***Khanh****. I graduated from Hue University of Medicine and Pharmacy in Vietnam and earned my Master's degree in Pharmacy at Dongguk University in South Korea. My expertise includes protein expression, molecular modeling, and drug discovery. My DC project focuses on the biochemical and structural characterization of recombinant glycosyltransferases in complexes with inhibitors.*

DC 5

Edward Meier
DTU, Copenhagen

I'm ***Edward****, originally from Canada, where I earned my MSc. In November 2024, I moved to Denmark to begin my PhD at DTU under the guidance of Professor Andreas Hougaard Laustsen-Kiel. My research focuses on designing antibody-based precision immunotherapeutics that target cancer-specific epitopes. When I'm not in the lab, you can find me outdoors—snowboarding, climbing, biking, and exploring new places.*

DC 6



George Lasisi
DTU, Copenhagen

My name is ***George****, and before starting my PhD at the Technical University of Denmark, I lived in the Netherlands and completed my Master's in Sweden—experiences that have greatly influenced my academic path.*
My project mainly focuses on the development of a test that will help me and other scientists figure out which molecules have the potential to be further developed into promising medicines.

DC 7

Natan Koraj
UL, Ljubljana

My name is ***Natan****. I'm originally a pharmacist from Croatia, now pursuing a PhD Biomedicine in neighbouring Slovenia. In my work, I focus on the discovery and synthesis of new inhibitors of selected glycosyltransferases.*

DC 8

Adelyn Betances
CSIC, Seville

Adelyn*. I hold a Bachelor's and a Master's degree in Chemistry. In my PhD, I specialize in the structural and dynamic characterization of bioactive molecule complexes with GTs and scFv antibodies using NMR.*

DC 9

Sushmaa Dangudubiyyam
CNRS, Lille

My name is ***Sushmaa****, I'm from India, and I'm a Biochemist by specialization. As a part of this network, I'm working on developing microplate-based assays to study glycosyltransferases and screen for their inhibitors.*

DC 10

Cathal Forkan
UCPH, Copenhagen

I am ***Cathal****, originally from Galway, Ireland. My project is to develop a cell-based platform for screening of inhibitors of glycosyltransferases. I'll be using genetic engineering to make cell models, which we will use to test these inhibitors.*

Try clicking on DCs' pictures to learn more from them

The News

From our published articles

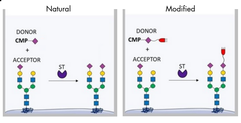
A Rapid and Sensitive MicroPlate Assay (MPSA) Using an Alkyne-Modified CMP-Sialic Acid Donor to Evaluate Human Sialyltransferase Specificity

Kiamungongo Clairene Filipe, Sushmaa Dangudubiyyam, Cédric Lion, Mathieu Declocquement, Roxana Elin Teppa, Christophe Biot, and Anne Harduin-Lepers
doi.org/10.1002/cbic.202400539

- In this work, the researchers have developed a method to measure the activity of enzymes called sialyltransferases—**ST** for short
- This will **help us** better **understand how STs work** and **identify potential novel drugs**

How does it work?

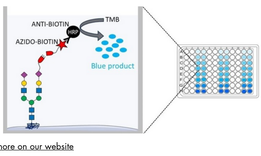
Step 1:



- Naturally, **ST** transfers a part of a **donor** to the **acceptor**
- Researchers have **modified** the **donor** with an additional fragment

Step 2:

- Because of the additional fragment, researchers can attach another molecule that produces a blue product
- By measuring the amount of blue product, they can determine how active **ST** is
- **More blue product means more work done by the ST**
- **Potential new drugs would lower the amount of blue product measured**



Find out more on our website

You might have seen us here

Development of microplate glycosyltransferase assays for enzymatic characterization and inhibitor screening

Sushmaa Dangudubiyyam has presented the development of a microplate assay at the **Joint Glycobiology Meeting** 2024. This method will allow us to **discover** and **characterise new inhibitors of glycosyltransferases**.

Precision cancer therapy: strategy to selectively inhibit the biosynthesis of cancer associated glycans

Pedro Miguel Ascenso Vieira held a presentation on the design strategy for selective inhibition of glycosyltransferases at **PICSU** 2025. **Designing selective inhibitors** allows us to **target cancer cells** at a specific molecular level.

Multivalent Golgi-targeting compounds for the precision delivery of cancer therapeutics

Prifti Georgia-Myrto presented her research at **PICSU** 2025, focusing on the precision delivery of cancer therapeutics to the **Golgi** apparatus, where glycosyltransferases are found. Developing **targeting compounds** will lead to enhanced **delivery of therapeutics**.

Assay Development and Activity Screening of Inhibitors of Sialyl- and Fucosyltransferases

George Lasisi presented his work on the development of a **high-throughput assay** for GTs, at DTU's PhD Symposium 2025. **High-throughput screening** allows us to test a **large number** of compounds for **inhibitory activity** against GTs.

The Timeline

Kickoff Meeting
1st Conference Meeting
I & II Soft Skills Workshop
2023 - 2024

Secondment
DC9
Ljubljana
March-April
2025

Secondment
DC2
Porto
May-June

2nd Conference Meeting
Porto, Portugal
May, 2025

Scientific Workshop & III Soft Skills Workshop

Secondments, conferences, and more

Stay tuned!

Stay tuned for **project updates** from our researches, their **experiences from secondments** and **gripping interviews with experts** in the field of glycosciences.
To learn more about GlyCanDrug visit https://www.glycandrug.eu/

MARIE CURIE ACTIONS
Horizon Europe