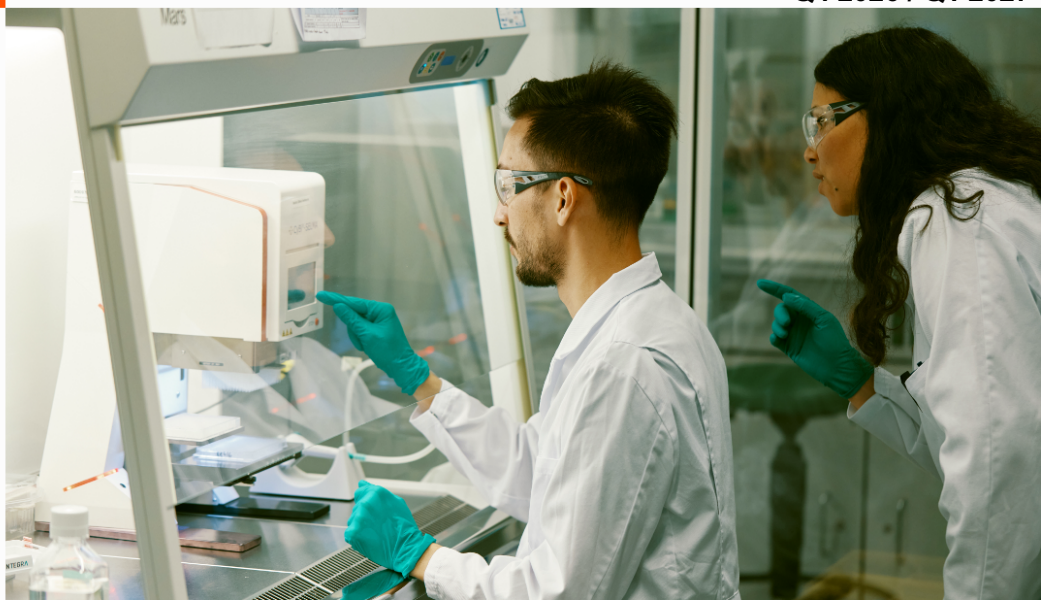
Bachelor / Master Thesis Proposal

NOVARTIS



Exploring New Technologies for Oncology Drug Discovery

Are you curious about how innovative technologies can advance cancer drug discovery? Join the Biochemistry & Biophysics group within the Oncology unit at Novartis Biomolecular Research in Basel and help explore promising bioanalytical approaches.

Your project will begin with mass photometry, a label-free technique that measures the molecular mass of proteins in solutions. You will help develop its applications to investigate protein oligomeric states under different conditions, with a focus on multi-pass transmembrane proteins, trying to answer key questions:

- can we detect dimer formation for GPCR proteins produced in detergent?
- can we determine the oligomeric status of WRN helicase protein in absence or presence of DNA?

You will also explore spectral shift and TRIC technologies to characterize protein–ligand interactions. The main goal will be to identify the added value of these new readouts as compared to conventional biochemical technologies (FP, TR-FRET).

Bring your curiosity and passion for science—and discover how biochemical and biophysical approaches help us understand the molecular interactions behind drug discovery. The project will be tailored in scope and complexity to maximize learning and success based on internship duration as defined by the academic partner institute.

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Desired project start: Q1 2027

Project duration: > 6 months, but flexible in agreement with the regulations of the academic partner institute

This proposal does not entail any future financial compensation as it is part of a BSc/MSc framework program to foster educational collaboration in accordance with specific terms and regulations of both Novartis and its academic partners.