



Summer Research Program 2026 – Projects

Project #9

Title: Engineering of antibody fragment genes by Overlap Extension -PCR

Description: Nanobodies (Nbs) are single domain antibody fragments generated from camel heavy chain only antibodies. They have become a relevant class of biomolecules for many different applications because of several important advantages such as their small size, high solubility and stability. Our goal is to construct nanobody genes from synthetic overlapping primers and add a random diversity in the Complementarity-determining regions (CDRs) of the gene sequences. This allows us to have a full length nanobody genes with different sequences for cloning in a phagemid and for transformation in bacteria. A synthetic phage display library will be developed to produce Nbs against key targets in cancer.

Mentor: Dr. Vladimir Katanaev, Scientific Director, vkatanaev@hbku.edu.qa

